



# **Wetland Functional Assessment**

# **Wetland Functional Assessment Report**

**A Technical Report in Support of the  
Environmental Impact Statement for the  
Disposal and Reuse of  
Naval Air Station Brunswick  
Brunswick, Maine**

**June 2009**

**Prepared for:**

**U.S. DEPARTMENT OF NAVY**  
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## **L**ist of Abbreviations and Acronyms

AMSL	above mean sea level
E & E	Ecology and Environment, Inc.
EIS	Environmental Impact Statement
FHWA	Federal Highway
GPS	Global Positioning System
NAS	Naval Air Station
USACE	U.S. Army Corps of Engineers

# 1

## Introduction

This report has been prepared to support the Environmental Impact Statement (EIS) for the disposal and reuse of Naval Air Station (NAS) Brunswick in Brunswick, Maine. The Navy contracted with Ecology and Environment, Inc. (E & E) to conduct a functional assessment of the wetlands at NAS Brunswick and its outlying properties in the spring of 2009. The United States Army Corps of Engineers (USACE) recommends the use of the Federal Highway Methodology (FHWA method) as a descriptive approach to evaluating wetland functions and values for the Clean Water Act Section 404 Permit Program (USACE 1993). This approach incorporates a qualitative description of the wetland and the identification of wetland functions and values in order to come to conclusions based on wetland science and “best professional judgment.”

The following report provides a brief overview of NAS Brunswick and the outlying properties (Section 2). Section 3 describes the methods used to evaluate the functions and values of the wetlands found at NAS Brunswick. Section 4 describes the locations of wetlands assessed on NAS Brunswick and its outlying properties during a reconnaissance field visit and includes a discussion of the wetland types found on the property. Section 5 describes the functions and values of the wetlands assessed on the property during the reconnaissance field visit.

# 2

## Site Description

NAS Brunswick is located on approximately 3,117 acres in the town of Brunswick, Cumberland County, Maine (see Figure 2-1). NAS Brunswick lies between the Androscoggin River and U.S. Route 1, with Maine Route 24 to the north and Casco Bay to the south. Three outlying properties (the McKeen Street Housing Annex, East Brunswick Radio Transmitter Site, and Sabino Hill Rake Station) that are being reviewed in the EIS were initially included as part of this study; however, these properties do not support wetland habitat. The East Brunswick Radio Transmitter Site and Sabino Hill Rake Station are characterized entirely as upland communities and do not contain wetland habitat. The McKeen Street Housing Annex does support the headwaters of Mere Brook on the southern end of the property; however, no wetland habitat was identified during the site survey conducted by E & E biologists in April 2009. Therefore, these three properties are not discussed further in this report.

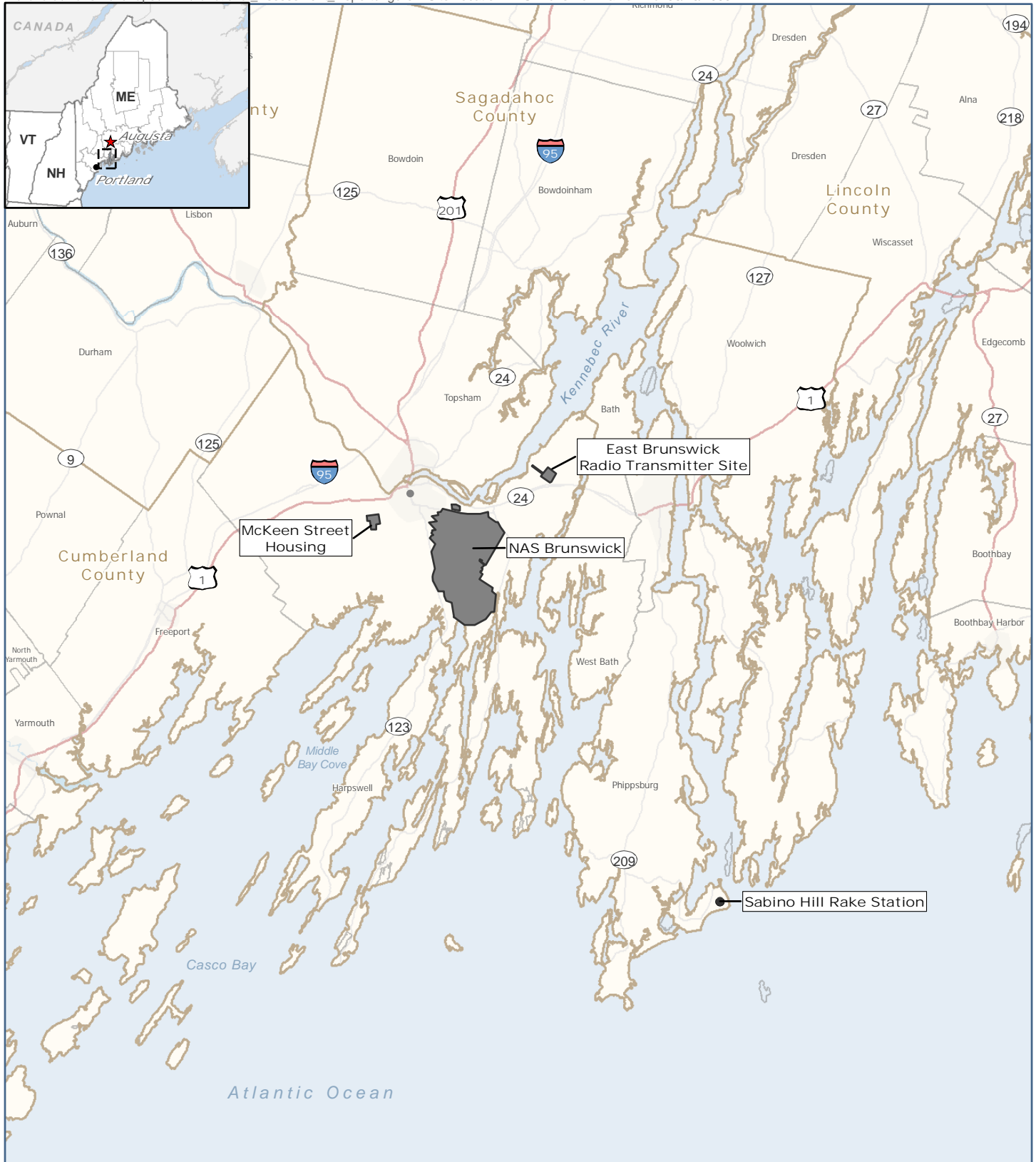
NAS Brunswick is located within the Central Maine Coastal and Interior Ecoregion. This area is comprised of glacially scoured and dissected peneplain, which slopes toward the coast and exhibits glacial features such as kames, eskers, and terraces. The topography is relatively flat to gently rolling, with elevations ranging from sea level to 1,000 feet above mean sea level (AMSL). Forests are the dominant vegetation type and consist of northern hardwood, northern hardwood-spruce, northern coastal spruce-fir, and spruce-fir-northern hardwood communities. Coastal pitch pine communities are known to occur in this ecoregion but are now uncommon. Open communities such as grasslands and tidal marshes also occur, but they do not comprise a large percentage of the overall land cover of this ecoregion (McNab and Avers 1994).

The land surrounding NAS Brunswick is predominately residential with areas of undeveloped forests and wetlands. Upland forests are the dominant vegetation community on the installation, covering approximately 1,336 acres (41%) of the total land area (E & E 2008). Large forested communities are located on the western, southern, and eastern portions of the base. These forested communities are interspersed with wetlands, ponds, and streams. Other vegetation communities at NAS Brunswick include a variety of grasslands, wetlands, and maintained lands. Developed areas occupy the central and north-central portions of the installation. Much of the eastern and western portions of the installation are forested and interspersed with wetlands, streams, and ponds. The southern and sou-

theastern portions of the base are characterized by forest and tidal wetlands associated with Harpswell Cove and Buttermilk Cove. The ecological communities mapped at NAS Brunswick are depicted on Figure 2-2.

NAS Brunswick is located within four watersheds: the Mere Brook/Harpswell Cove watershed, Buttermilk Cove watershed, Middle Bay watershed, and the Androscoggin River watershed. The installation is located within 0.5 mile of the Androscoggin River and Casco Bay. The installation is bisected by Mere Brook, which eventually drains into Harpswell Cove. Numerous streams, wetlands, and permanent freshwater ponds are scattered throughout the installation. Approximately 389 acres of wetlands are present on NAS Brunswick, of which 72% are freshwater and 28% are tidal (E & E 2008). A more detailed discussion of wetland types at NAS Brunswick is provided in Section 4 of this report.








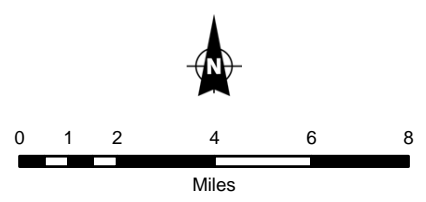
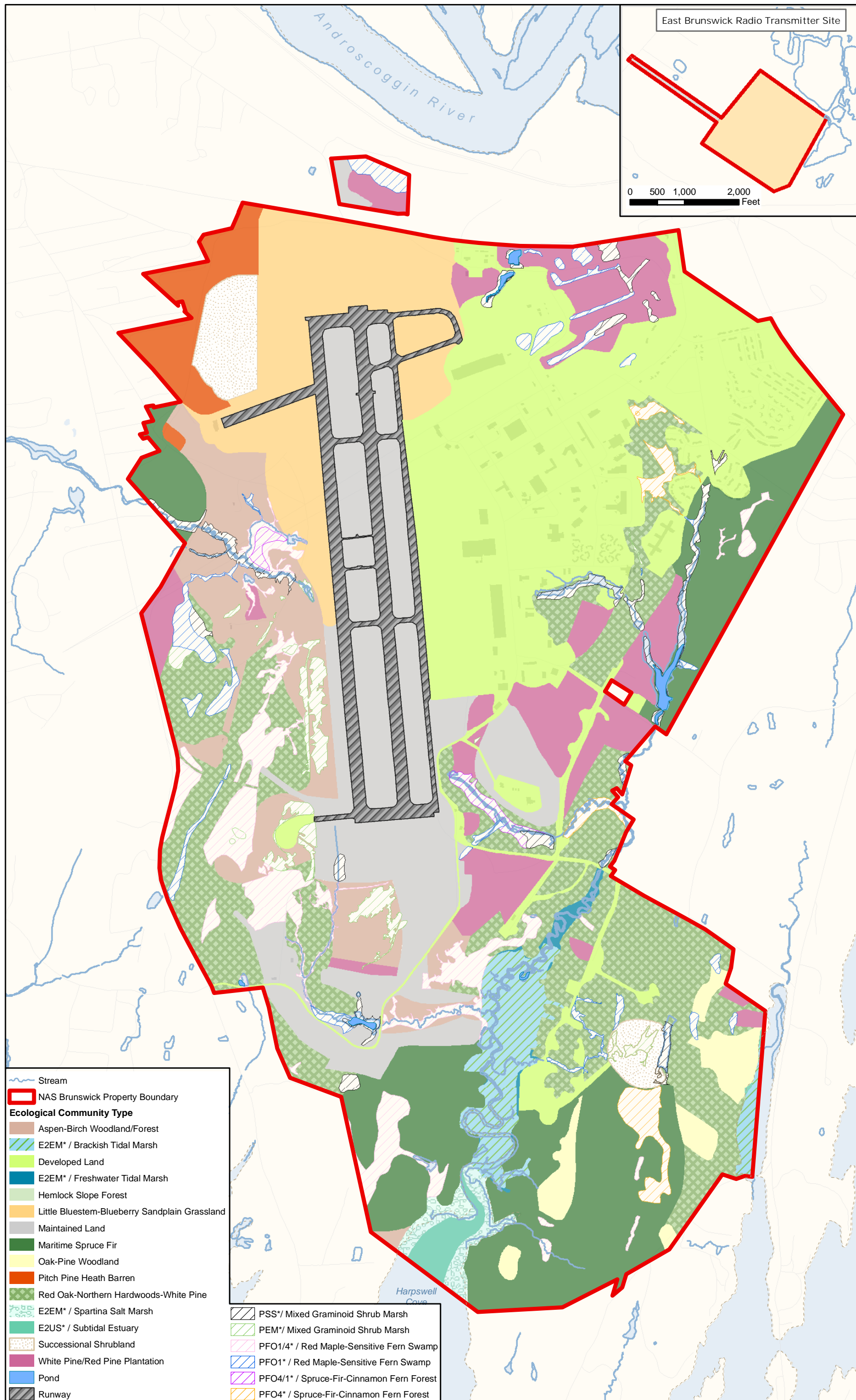
-  NAS Brunswick
-  Municipal Boundary
-  County Boundary

Figure 2-1  
NAS Brunswick and  
Outlying Properties  
Brunswick, Maine





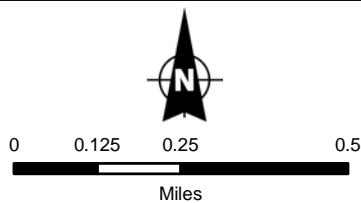
- Stream
- NAS Brunswick Property Boundary
- Ecological Community Type**
- Aspen-Birch Woodland/Forest
- E2EM\* / Brackish Tidal Marsh
- Developed Land
- E2EM\* / Freshwater Tidal Marsh
- Hemlock Slope Forest
- Little Bluestem-Blueberry Sandplain Grassland
- Maintained Land
- Maritime Spruce Fir
- Oak-Pine Woodland
- Pitch Pine Heath Barren
- Red Oak-Northern Hardwoods-White Pine
- E2EM\* / Spartina Salt Marsh
- E2US\* / Subtidal Estuary
- Successional Shrubland
- White Pine/Red Pine Plantation
- Pond
- Runway

- PSS\*/ Mixed Graminoid Shrub Marsh
- PEM\*/ Mixed Graminoid Shrub Marsh
- PFO1/4\* / Red Maple-Sensitive Fern Swamp
- PFO1\* / Red Maple-Sensitive Fern Swamp
- PFO4/1\* / Spruce-Fir-Cinnamon Fern Forest
- PFO4\* / Spruce-Fir-Cinnamon Fern Forest

Notes: Ecological Communities based on the Natural Landscapes of Maine (Gawler and Cutko 2004).

\*Wetland Classification based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al 1979).

**Figure 2-2**  
**Ecological Communities**  
**NAS Brunswick**  
**Brunswick, Maine**



# 3

## Methodology

Field surveys of the wetlands at NAS Brunswick were conducted by E & E wetland biologists in May 2009. The objective of the field surveys was to conduct an assessment of the functions and values of wetlands previously identified on the base.

### 3.1 Review of Previous Wetland Surveys

Prior to conducting the field surveys, existing NAS Brunswick studies, plans, and environmental documents were reviewed to obtain information on wetlands at NAS Brunswick.

The Navy conducted a wetland inventory of NAS Brunswick in 1998 for planning-level purposes (Normandeu Associates 1998). The inventory was produced through aerial photo-interpretation and review of existing soils and wetlands data. Brief on-site reconnaissance was conducted to confirm the approximate locations of wetland boundaries. Wetland communities were described according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). The Cowardin wetland community classification system is used widely throughout the United States for the purpose of inventory, evaluation, and management of wetlands. Under this system, wetlands are classified based on hydrology, soils, and plant communities. The inventory resulted in the mapping of approximately 443 acres of wetlands at NAS Brunswick. Of the 443 acres, approximately 116 acres of estuarine wetland were mapped, most of which are located around Harpswell Cove and Buttermilk Cove. The remaining 327 acres of wetland were classified as palustrine or freshwater wetlands. Under the Cowardin (1979) classification, the palustrine wetlands present at NAS Brunswick are emergent (PEM), scrub-shrub (PSS) and forested (PFO). Freshwater ponds are also included and are classified as PUB.

In addition to the planning-level wetland survey, maps of formally delineated wetland were also reviewed. Formal wetland delineation surveys were conducted at NAS Brunswick in the recent past using the *Corps of Engineers Wetland Delineation Manual* (1987). These field wetland surveys were conducted in support of planning and permitting for a variety of projects; however, formal wetland delineations have not been completed for the entire NAS Brunswick property or its outlying properties. Based on review of wetland delineation reports and associ-

ated mapping, approximately 80 acres of wetlands have been delineated at NAS Brunswick.

In 2008, E & E biologists conducted a reconnaissance survey of wetlands at NAS Brunswick and the outlying properties (E & E 2008). The objective of the survey was to field-verify the location of wetlands identified in the planning-level survey and the previously delineated wetland boundaries. As a result, E & E biologists confirmed the presence of approximately 389 acres of wetlands at NAS Brunswick (see Figure 3-1).

### **3.2 Field Methodology**

Using the methodology outlined in the *Highway Methodology Workbook Supplement* (USACE 1999) and the Modified Functions and Values Assessment for Significant Nexus datasheet (USACE 2007), a functional assessment of previously identified wetlands was completed at NAS Brunswick in May 2009. These wetlands were grouped into clusters based on their geographic proximity and hydrologic connections (see Table 3-1 and Attachment 3). A walkover of each cluster was conducted to assess the function and values of each wetland community type. Previously identified wetlands were located using a Global Positioning System (GPS) unit. Each wetland location was recorded with a single GPS point, and a photograph was taken to document the existing conditions of the site (see Attachment A). For each wetland, a standardized datasheet was completed (see Attachment B), and the dominant vegetation within the wetland and upland border was recorded.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
<b>Cluster 1</b>				
FA 5	GWR, S&S	PFO	Possible hydrologic connection to Androscoggin River	Red maple ( <i>Acer rubrum</i> ) wetland adjacent to a stream and ponded area originating from a storm water outflow; connected to FA 6 via a culvert under Perimeter Road.
FA 6	GWR	PFO	Possible hydrologic connection to Androscoggin River	Red maple wetland adjacent to ponded area. Originating from FA 5 via culvert under Perimeter Road and connected to FA 7 via culvert before culverted under Bath Road.
FA 7	GWR/D, FFA	PFO	Possible hydrologic connection to Androscoggin River	Small, linear wetland within a forested area along an ephemeral stream; vegetation dominated by red maple. Originating from a stormwater culvert under Perimeter Rd and connected to FA 6 via culvert before culverted under Bath Road.
FA 11	S&TR, NR&R	PSS	Possible hydrologic connection to Androscoggin River	Scrub-shrub wetland formed at the convergence of two man-made ditches through a white pine ( <i>Pinus strobus</i> ) plantation. A ditch flows east from the wetland into a storm water culvert under Perimeter Road.
FA 13	GWR/D, FFA, S&TR, NR&R	PFO	Possible hydrologic connection to Androscoggin River	Small red maple swamp bordered by white pine plantation. Southern portion drains into a ditched area that flows east and likely into the storm water system along Fitch Avenue.
FA 15	GWD, FFA, S&TR, NR&R, PE, WLH	PEM	Possible hydrologic connection to Androscoggin River	Linear wetland within white pine plantation. Adjacent to FA 16 and FA 17; drains west into FA 17.
FA 16	GWD, FFA, S&TR, NR&R	PSS	Possible hydrologic connection to Androscoggin River	Linear wetland within white pine plantation. Drains west to FA 15 and FA 17.
FA 17	GWR, S&TR, NR&R	PFO	Possible hydrologic connection to Androscoggin River	Linear wetland within mixed forest dominated by red maple, white pine, and red oak ( <i>Quercus rubra</i> ). Adjacent to FA 15. Likely drains FA 15 and FA 16 into storm water system at the intersections of Sixth Avenue and Fuel Farm Road with Pegasus Avenue.
FA 18	GWR	PFO	Possible hydrologic connection to Androscoggin River	Forested wetland dominated by red maple, white pine, and red oak, with a drainage ditch running along roadside. Likely drains into storm water system along Pegasus Avenue.
FA 19	GWR	PFO	Possible hydrologic connection to Androscoggin River	Forested wetland dominated by red maple, white pine, and red oak, with a drainage ditch running along roadside. Likely drains into storm water system along Pegasus Avenue and Fuel Farm Road.



**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
FA 78	GWD, PE	PFO	Possible hydrologic connection to Androscoggin River	Seepage wetland adjacent to a well-defined perennial stream. Dominated by red maple, skunk cabbage ( <i>Symplocarpus foetidus</i> ), and jewelweed ( <i>Impatiens capensis</i> ).
<b>Cluster 2</b>				
FA 8	GWR, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated wet depression in mixed forested area dominated by red maple, white pine, and red oak.
FA 9	GWR, S&TR, NR&R WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated wet depression in mixed forested area dominated by red maple, white pine, and red oak.
FA 10	FFA, S&TR, NR&R	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated wet depression in mixed forested area dominated by red maple, white pine, and red oak.
FA 12	S&TR	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated wet depression in white pine plantation bordered by white birch.
<b>Cluster 3</b>				
FA 14	GWR, FFA	PFO	Possible hydrologic connection to an unnamed tributary of Mere Brook	Forested wetland dominated by red maple that drains into a ditch flowing south into the storm water system at the intersection between Avenue B and First Street.
FA 25	GWR, REC, WLH	PFO	Possible hydrologic connection to an unnamed tributary of Mere Brook	Convergence of two small ephemeral streams from culverts originating off the property. Drains into FA 23.
FA 26	FFA, PE, WLH	PEM	Possible hydrologic connection to an unnamed tributary of Mere Brook	Emergent wetland bordering tributary to Mere Brook. Flows south into ponded area – FA 23. Vegetation dominated by grasses, sphagnum moss ( <i>sphagnum</i> spp.), and steplebush ( <i>Spiraea tomentosa</i> ).
FA 27	GWR/D, FFA, PE, WLH	PFO	Possible hydrologic connection to an unnamed tributary of Mere Brook	Forested wetland bordering a large stream (a tributary of Mere Brook) and dominated by red maple and sphagnum moss. Drains south into FA 26.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
FA 32	GWR, FFA, S&TR, NR&R, PE, WLH, S&S	PEM	Possible hydrologic connection to an unnamed tributary of Mere Brook	Emergent wetland surrounding a stream from a storm water detention culvert under First Street. Drains south where it is culverted under Chickadee Circle and converges with FA 36 and into FA 27.
FA 33	S&TR	PFO	Possible hydrologic connection to an unnamed tributary of Mere Brook	Small forested wetland depression between residential development and roadway. Likely drains into storm water system along First Street.
FA 34	S&TR	PFO	Possible hydrologic connection to an unnamed tributary of Mere Brook	Forested wetland dominated by red maple between residential development and roadway. Likely drains into storm water system along First Street.
FA 35	FFA, S&TR	PFO	Possible hydrologic connection to an unnamed tributary of Mere Brook	Forested wetland dominated by red maple, white pine, and red spruce ( <i>Picea rubens</i> ). This wetland connects to FA 36 by a small stream.
FA 36	FFA, S&TR	PEM	Possible hydrologic connection to an unnamed tributary of Mere Brook	Storm water detention pond within a residential area dominated by cattails ( <i>Typha</i> spp.). Connected to FA 35 by a small stream. Culverted under Neptune Drive.
FA 37	GWD, FFA, S&TR	PEM	Possible hydrologic connection to an unnamed tributary of Mere Brook	Emergent wetland within ROW dominated by soft rush ( <i>Juncus effusus</i> ) and sedges ( <i>Scirpus</i> spp.). Drains to the east into a forested wetland bordering a small stream – FA 38.
FA 38	Connecting tributary		Possible hydrologic connection to an unnamed tributary of Mere Brook	Small stream draining from FA 37. Dominated by red maple. Culverted under Neptune Drive, where it converges with FA 27.
<b>Cluster 4</b>				
FA 20	GWR	PFO	Hydrologic connection to an unnamed tributary of Mere Brook	Narrow border of forested wetland along an unnamed tributary of Mere Brook. Culverted in several places under roadways, including Neptune Drive, before converging with FA 22 and draining to FA 23.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
FA 21	GWR, FFA, S&TR, S&S	POW	Hydrologic connection to an unnamed tributary of Mere Brook	Ponded area with some emergent border from culvert on NW side likely from under airfield. Culverted under dirt road where it becomes FA 22.
FA 22	GWR, S&TR, REC, WLH, S&S	PEM	Hydrologic connection to an unnamed tributary of Mere Brook	Emergent marsh bordering a slow, meandering stream. Drains south into a ponded area – FA 23.
FA 23	GWR, F&SH, S&TR, REC, S&S	POW	Hydrologic connection to an unnamed tributary of Mere Brook	Open water area adjacent to FA formed by drainage from FA 22, FA 20, FA 25, and FA 26. Appears degraded – cloudy water, little emergent or submerged vegetation, posted signs indicating no fishing or swimming. Drains via culvert to FA 24.
FA 24	GWR, FFA	PSS	Hydrologic connection to an unnamed tributary of Mere Brook	Wetland bordering perennial stream originating via culvert from FA 23. Scrub-shrub wetland dominated by speckled alder ( <i>Alnus incana</i> ). Flows south into FA 47.
FA 47	GWR, FFA, F&SH, WLH	PEM	Hydrologic connection to an unnamed tributary of Mere Brook	Emergent wetland bordering perennial stream dominated by grasses and sensitive fern ( <i>Onoclea sensibilis</i> ). Stream flows south to its confluence with Mere Brook.
<b>Cluster 5</b>				
FA 28	GWR, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated wet depression in maritime spruce fir forest dominated by balsam fir ( <i>Abies balsamea</i> ), red spruce, and white pine.
FA 29	GWD	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated wet depression in maritime spruce fir forest dominated by balsam fir, red spruce, and white pine.
FA 30	GWR/D, FFA, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated wet depression in maritime spruce fir forest dominated by balsam fir, red spruce, and white pine.
FA 31	GWR/D, FFA, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated wet depression in maritime spruce fir forest dominated by balsam fir, red spruce, and white pine.



**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
<b>Cluster 6</b>				
FA 1	FFA, NR&R, PE, WLH	E2EM	Hydrologic connection to Mere Brook	Salt marsh wetland adjacent to a small stream dominated by cordgrass ( <i>spartina</i> spp).
FA 2	FFA, PE, WLH	E2EM	Hydrologic connection to Mere Brook	Salt marsh wetland adjacent to a small stream.
FA 48	PE, WLH	PEM	Hydrologic connection to Mere Brook	Emergent wetland bordering Mere Creek. Wetland contains significant vernal pool no. 32.
FA 49	PE, WLH	PSS	Hydrologic connection to Mere Brook	Scrub/shrub wetland bordering Mere Creek dominated by meadowsweet ( <i>Spirea latifolia</i> ), steplebush, and a variety of emergent vegetation.
FA 60	GWD, WLH	PFO	Hydrologic connection to Mere Brook	Forested wetland dominated by red maple, balsam fir, and skunk cabbage. Drains south into brackish tidal marsh along Mere Brook.
FA 61	WLH	PFO	Hydrologic connection to Mere Brook	Forested wetland dominated by red maple, red spruce, balsam fir, cinnamon fern ( <i>Osmunda cinnamomea</i> ), and sphagnum. Connects with FA 60.
FA 63	GWR/D, S&TR, NR&R, PE, WLH	PFO	Hydrologic connection to Mere Brook	Forested wetland dominated by red maple bordering open water with cattails at southern end. Flows into a perennial stream bordered by FA 64.
FA 64	Connecting tributary		Hydrologic connection to Mere Brook	Small stream draining from FA 64. Culverted and draining through Weapons storage compound to Mere Brook.
FA 65	GWR, F&SH, S&TR, PE, WLH	PSS	Hydrologic connection to Mere Brook	Shrub wetland bordering an impounded area of Mere Brook. This is culverted under a road as a perennial stream.
FA 66	Tributary to Mere Brook		Hydrologic connection to Mere Brook	Small stream draining into Mere Brook.
FA 67	Tributary to Mere Brook		Hydrologic connection to Mere Brook	Small stream draining into Mere Brook.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
<b>Cluster 7</b>				
FA 3	S&TR, NR&R, WLH	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Scrub/shrub swamp
FA 4	GWR, S&TR, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Forested wetland dominated by balsam fir and spruce.
FA 40	GWR, REC, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Southern forested portion of isolated wetland. Northern portion is FA 41. Dominated by red maple and balsam fir.
FA 41	GWR, REC, WLH, ED/S	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Northern shrub swamp portion of isolated wetland. Southern portion is FA 40. Dominated by steplebush, meadowsweet, speckled alder, soft rush, and sedges.
FA 42	GWR, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Western forested portion of isolated wetland. Eastern portion is FA 43. Dominated by red maple, red oak, and balsam fir.
FA 43	GWR	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Eastern shrub swamp portion of isolated wetland. Western portion is FA 42. Dominated by unknown shrubs, possibly speckled alder.
FA 44	WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Three north/south linear depressions hold water in this forested wetland dominated by red maple, balsam fir, and white pine.
FA 45	WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Southern forested portion of isolated wetland. Northern portion is FA 46. Dominated by red maple, balsam fir, and white pine.
FA 46	WLH	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Northern shrub swamp portion of isolated wetland. Southern portion is FA 40. Dominated by meadowsweet, speckled alder, soft rush, and sedges.
FA 62	S&TR, NR&R, PE	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Shrub swamp adjacent to pond on eastern side of EOD pit. Dominant species include specked alder and meadowsweet.
<b>Cluster 8</b>				
FA 50	F&SH, PE	E2EM	Hydrologic connection to Harpswell Cove	Emergent wetland adjacent to spartina salt marsh. Poned water upstream drains through a culvert into the wetland before flowing into Harpswell Cove.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
FA 51	FFA, S&TR, N&RR, WLH	PFO	Hydrologic connection to unnamed tributary to Harpswell Cove	Forested wetland that has been bermed, impounding water, with a culverted outflow. Culvert drains into FA 50. Wetland originates from a small stream draining from FA 52.
FA 52	PE, WLH	PFO	Hydrologic connection to unnamed tributary to Harpswell Cove	Forested wetland dominated by balsam fir, red spruce and red maple. Drains into a small stream flowing into impounded area of FA 51.
<b>Cluster 9</b>				
FA 56	GWD, PE, REC	PFO	Hydrologic connection to unnamed tributary to Mere Brook	Forested wetland bordering perennial stream running through golf course. Groundwater seepage observed. Flows into impounded area that is culverted under roadway.
FA 57	PE, REC	PSS	Hydrologic connection to unnamed tributary to Mere Brook	Scrub/shrub wetland bordering perennial stream running through golf course. Flows into impounded area that is culverted under roadway.
FA 58	PE	PFO	Hydrologic connection to unnamed tributary to Mere Brook	Forested wetland dominated by red maple bordering perennial stream running through golf course. Flows from culvert under roadway.
FA 59	GWR, FFA, S&TR, NR&R, PE, REC, WLH	PEM	Hydrologic connection to unnamed tributary to Mere Brook	Emergent wetland bordering perennial stream flowing into Mere Brook. Wetland dominated by cattails and grasses.
FA 68	GWR/D	PEM	Hydrologic connection to unnamed tributary to Mere Brook	Emergent wetland located in grasslands in the southwest portion of the airfield. Ditched and draining south into a perennial stream.
FA 69	GWD, PE	PSS	Hydrologic connection to unnamed tributary to Mere Brook	Large shrub swamp formed in depressions within forested area. Drains into a tributary of Mere Brook.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
FA 70	GWR, WLH	PFO	Hydrologic connection to unnamed tributary to Mere Brook	Large forested wetland formed in depressions within forested area.
FA 71	GWR, WLG	PFO	Hydrologic connection to unnamed tributary to Mere Brook	Forested wetland adjacent to a small seasonal stream. Wetland dominated by red maple, skunk cabbage, cinnamon fern.
FA 76	S&TR, NR&R	PEM	Possible hydrologic connection to unnamed tributary to Mere Brook	Emergent wetland at the northern extent of the golf course driving range. Appears to connect to an ephemeral stream course across the dirt road to the east of the driving range.
FA 77	S&TR, PE, WLH, S&S	PFO	Hydrologic connection to unnamed tributary to Mere Brook	Forested wetland narrowly bordering the convergence of an ephemeral stream and a perennial stream that flow south.
FA 79	FFA, S&TR	PEM	Hydrologic connection to unnamed tributary to Mere Brook	Scrub-shrub wetland adjacent to airfield dominated by meadowsweet, nannyberry ( <i>Viburnum lentago</i> ), and steeplebush.
FA 80	GWR, S&TR	PEM	Hydrologic connection to unnamed tributary to Mere Brook	Emergent wetland drainage along the edge of the airfield.
<b>Cluster 10</b>				
FA 53	NR&R, PE, WLH	PSS	Hydrologic connection to unnamed tributary of Middle Bay Cove	Scrub shrub wetland supplemented by runoff from the adjacent golf course and culverted in to a small stream flowing into Middle Bay Cove. Wetland is dominated by speckled alder, willow ( <i>Salix</i> spp.), grey birch ( <i>Betula populifolia</i> ), and red maple saplings.
FA 55	FFA, S&TR, NR&R, S&S	PUB	Hydrologic connection to unnamed tributary of Middle Bay Cove	Ponded area adjacent to golf course culverted under roadway into a perennial tributary of Middle Bay Cove.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
<b>Cluster 11</b>				
FA 73	GWR, S&TR, PE, REC, WLH	PFO	Possible hydrological connection to Miller Brook	Forested wetland dominated by red maple bordering seasonal stream flowing south.
FA 74	FFA, WLH	PSS	Possible hydrological connection to Miller Brook	Scrub/shrub wetland dominated by speckled alder bordering seasonal stream flowing south.
<b>Cluster 12</b>				
FA 54	S&TR, NR&R, WLH, ED/S	PEM	No Apparent Surface Water Connection to Waters of the U.S.	This is a large isolated emergent wetland that serves as a significant vernal pool.
FA 72	FFA, S&TR, WLH	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Red maple swamp within forested depression adjacent to Harpswell Road. TRC significant vernal pools 42 & 44.
FA 75	GWR/D, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Isolated forested wetland within a topographic depression.
FA 82	GWR, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Small forested wetland area in depression between to upland ridges. Wetland is bisected by dirt road cutting off hydrologic connection to FA 73 and 74.
FA 83	GWR, S&TR	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Small forested wetland in a depression by dirt road. Cut off from a possible hydrologic connection with FA 72 by the roadway.
FA 84	S&TR, NR&R, WLH	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Small forested wetland in a depression within upland forested area.
<b>Cluster 13</b>				
FA 81	GWR, FFA, WLH	PFO	Possible hydrologic connection to Mere Brook	Forested wetland dominated by red maple and cinnamon fern.
FA 86	GWR	PFO	Possible hydrologic connection to Mere Brook	Forested wetland depression dominated by red maple.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
FA 87	WLH	PFO	Possible hydrologic connection to Mere Brook	Large forested wetland that functions as valuable vernal pool habitat.
FA 88	S&TR	PSS	Possible hydrologic connection to Mere Brook	Scrub-shrub swamp adjacent to airfield.
FA 89	GWD, FFA, PE	PEM	Possible hydrologic connection to Mere Brook	Emergent wetland adjacent to airfield.
FA 90	S&TR	PFO	Possible hydrologic connection to Mere Brook	Forested wetland adjacent to airfield.
<b>Cluster 14</b>				
FA 91	S&TR	PFO	No Apparent Surface Water Connection to Waters of the U.S.	Small isolated linear wetland in a topographic depression along road. Dominated by red maple.
FA 92	FFA, S&TR	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Small isolated wetland in a topographic depression along road. Dominated by willow, meadowsweet, and steplebush.
FA 93	S&TR, WLH	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Small isolated wetland in a topographic depression within an open field. Maintained areas nearby. Dominated by leatherleaf ( <i>Chamaedaphne calyculata</i> ), willow, meadowsweet, and steplebush.
FA 99	F&SH, REC, WLH	PSS	No Apparent Surface Water Connection to Waters of the U.S.	Ponded area bordered by scrub-shrub wetland dominated by willow.
<b>Cluster 15</b>				
FA 85	WLH	PFO	Hydrologic connection to unnamed tributary of Mere Brook	Large forested wetland that functions as valuable vernal pool habitat.
FA 94	GWR/D, FFA, PE, WLH	PSS	Hydrologic connection to unnamed tributary of Mere Brook	Forested wetland dominated by red maple. Converges with FA 95 and drains into FA 100.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
FA 95	GWR/D	PFO	Hydrologic connection to unnamed tributary of Mere Brook	Narrow forested wetland bordering small stream. Dominated by red maple. Small seepage from steeply sloping sides. Drains into FA 100.
FA 96	GWR/D, FFA, S&TR, NR&R, WLH	PEM	Hydrologic connection to unnamed tributary of Mere Brook	Emergent wetland in maintained field with antennae site. Site of TRC Vernal pools 29B and 29C.
FA 97	GWR, FFA, PE, WLH, S&S	PSS	Hydrologic connection to Mere Brook	Scrub-shrub wetland dominated by willow and speckled alder bordering Mere Brook.
FA 100	GWR,/D, F&SH, S&TR, PE, WLH	PFO	Hydrologic connection to unnamed tributary of Mere Brook	Narrow forested wetland bordering small stream. Dominated by red maple, skunk cabbage, and jewelweed. Drains from FA 95 into Mere Brook.
FA 101	GWR/D, FFA, F&SH, S&TR, NR&R, WLH	PFO	Hydrologic connection to unnamed tributary of Mere Brook	Narrow forested wetland bordering small stream. Dominated by red maple and skunk cabbage. Drains in to Mere Brook.
FA 102	GWR/D, FFA, S&TR, PE, WLH, S&S	PSS	Hydrologic connection to Mere Brook	Shrub wetland broadly bordering Mere Brook. Dominated by speckled alder with red maple along the forested edges.
FA 103	GWR, S&TR, PE, WLH	PFO	Hydrologic connection to unnamed tributary of Mere Brook	Forested wetland bordering a small stream. Dominated by red maple, skunk cabbage, and cinnamon fern.
FA 104	GWR, FFA, WLH	PFO	Hydrologic connection to Mere Brook	Forested wetland dominated by red maple.
FA 105	WLH	PFO	Hydrologic connection to Mere Brook	Forested wetland area within a white pine plantation.

**Table 3-1 Wetlands Summary, NAS Brunswick**

Wetland ID	Primary Functions and Values	Wetland Community Type <sup>1</sup>	Hydrologic Connection	Additional Comments
FA 106	GWR, S&TR, PE, WLH	PSS	Hydrologic connection to unnamed tributary of Mere Brook	Narrow scrub-shrub wetland bordering a tributary to Mere Brook.
FA 107	GWR, S&TR, PE, WLH	PEM	Hydrologic connection to unnamed tributary of Mere Brook	Emergent wetland bordering a tributary draining from the airfield.
FA 108	GWR, FFA, S&TR, WLH,	PSS	Hydrologic connection to unnamed tributary of Mere Brook	Scrub-shrub wetland dominated by speckled alder, willow, and sensitive fern.

Note:

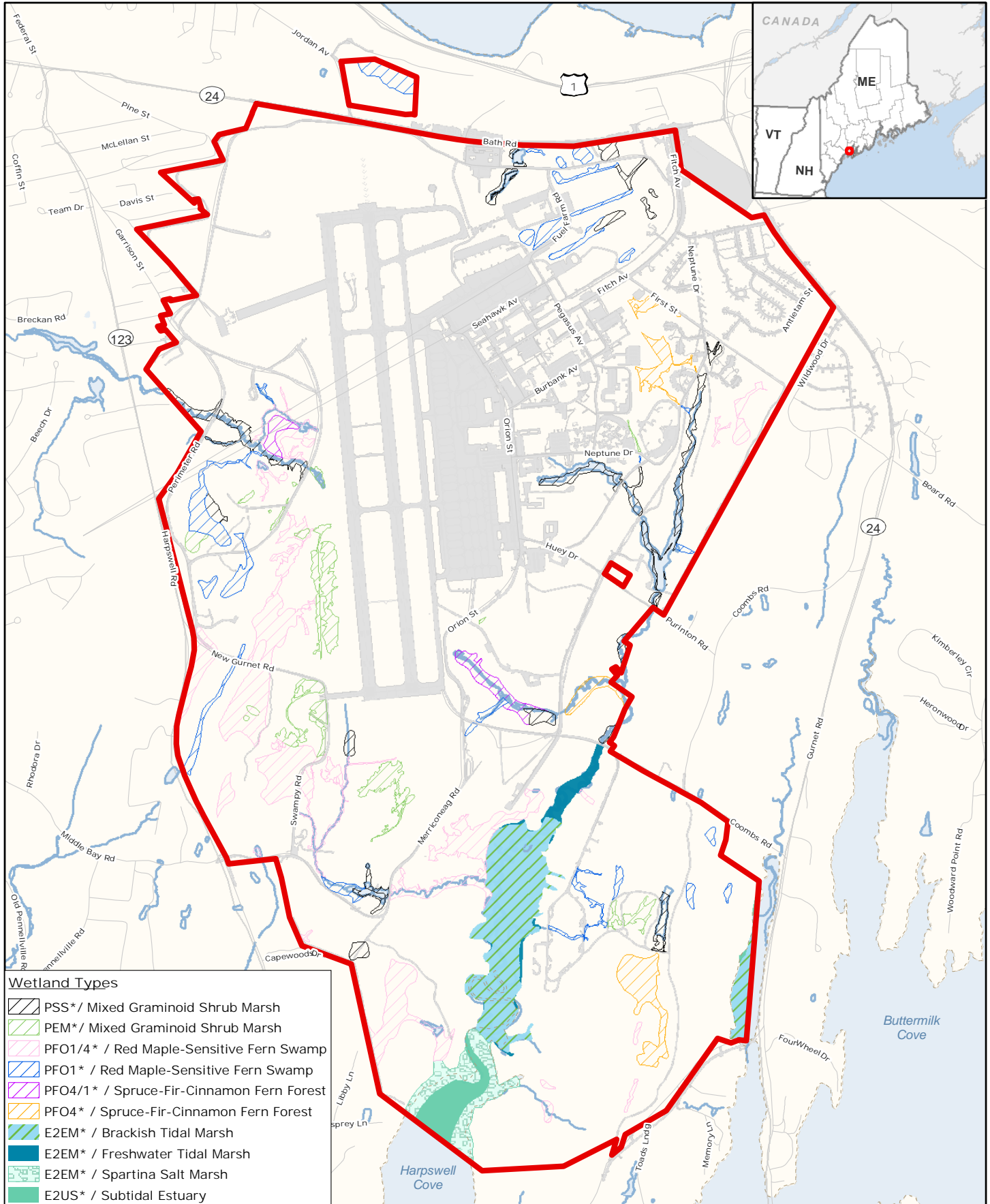
<sup>1</sup> Based on Cowardin et al. 1979.

Key:

Functions and Values

- ED/S = Educational/scientific value.
- ESH = Endangered species habitat.
- F&SH = Finfish habitat.
- FFA = Floodflow attenuation.
- GWD = Groundwater discharge.
- GWR = Groundwater recharge.
- NR&R = Nutrient removal/retention/transformation.
- PE = Production export.
- REC = Recreation.
- S&S = Sediment/shoreline stabilization.
- S&TR = Sediment/toxicant/pathogen retention.
- U/H = Uniqueness/heritage.
- WLH = Wildlife habitat.





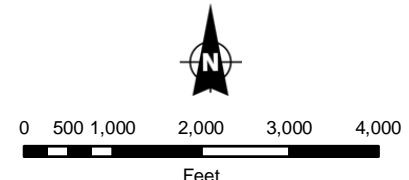
**Wetland Types**

	PSS* / Mixed Graminoid Shrub Marsh
	PEM* / Mixed Graminoid Shrub Marsh
	PFO1/4* / Red Maple-Sensitive Fern Swamp
	PFO1* / Red Maple-Sensitive Fern Swamp
	PFO4/1* / Spruce-Fir-Cinnamon Fern Forest
	PFO4* / Spruce-Fir-Cinnamon Fern Forest
	E2EM* / Brackish Tidal Marsh
	E2EM* / Freshwater Tidal Marsh
	E2EM* / Spartina Salt Marsh
	E2US* / Subtidal Estuary

**Legend**

	Stream
	NAS Brunswick
	County Boundary

**Figure 3-1  
 Wetlands of  
 NAS Brunswick  
 Brunswick, Maine**



# 4

## Wetlands Types

According to the 2008 reconnaissance-level survey, there are approximately 280 acres of freshwater wetlands, 109 acres of tidal wetlands, and 9 acres of ponds at NAS Brunswick (E & E 2008). Figure 3-1 identifies the wetland types at NAS Brunswick according to the Cowardin et al. (1979) classification system and the *Natural Landscapes of Maine* (Gawler and Cutko 2004). The Cowardin et al. system classifies wetland vegetation according to the community structure.

The freshwater, or palustrine, wetlands were generally classified as emergent (PEM), shrub-scrub (PSS), and forested (PFO) wetlands. The forested wetlands (PFO) were composed of predominantly deciduous tree species (hardwoods) (PFO1), coniferous species (PFO4), or a mixture of both (PFO1/4 or PFO 4/1). Tidal, or estuarine, wetlands were generally classified as subtidal (E1) or intertidal wetlands (E2). The classification of the wetlands according to Cowardin et al. (1979) was then compared to the descriptions of the ecological communities for freshwater wetlands in *Natural Landscapes of Maine* (Gawler and Cutko 2004). Typically, the Cowardin et al. (1979) classification is broader than Gawler and Cutko (2004) and is not detailed enough for determining species composition of a specific wetland community. Below is a brief description of each of the wetland community types identified by E & E in July 2008. A more detailed description can be found in the Ecological Communities and Wetland Resources Report (E & E 2008).

### 4.1 Spruce-Fir-Cinnamon Fern Forest

Spruce-fir-cinnamon fern forests are forested wetlands dominated by black spruce (*Picea mariana*) or red spruce and balsam fir. These systems are defined as PFO4, and approximately 40 acres of this wetland type are present on the installation. This community occurs within the maritime spruce-fir forest in the southeastern portion of NAS Brunswick in a long, poorly drained valley between two ridges. This community has pronounced pit and mound topography. The herb layer is productive and dominated by cinnamon fern, but it also contains a variety of sedges, grasses, and other herbs such as three-seeded sedge (*Carex trisperma*), mannagrasses (*Glyceria* spp.), golden thread (*Coptis trifolia*), saxifrage (*Saxifraga pensylvanica*), and skunk cabbage. There are a few scattered shrubs, mainly wild raisin (*Viburnum cassinoides*) and winterberry (*Ilex verticillata*). The forest floor is blanketed with sphagnum mosses.

## **4.2 Red Maple-Sensitive Fern Swamp**

Red maple-sensitive fern swamps are a common forested wetland community type in Maine. Red maple-sensitive fern swamps have been identified at NAS Brunswick in several areas, including along the edges of the retention ponds in the eastern portion of the installation; adjacent to Mere Brook in the northwest portion of the installation; in the weapons compound; and in the northern clear zone parcel, north of Bath Road. There are approximately 162 acres of this wetland type at NAS Brunswick, comprising 5% of the installation's area.

The structure of this community varies, with the canopy ranging from open to closed and the shrub layer ranging from prominent to nonexistent. Red maple-sensitive fern swamps with balsam fir as a co-dominant tree species are classified as PFO1/4 or PFO 4/1 in the Cowardin et al. (1979) classification system. Wetlands in which balsam fir is dominant over the deciduous tree species but still comprises approximately less than 75% are classified as PFO4/1. Wetlands in which the deciduous trees species comprise more than 50% of the coverage, with balsam fir comprising enough cover to be considered dominant, are classified as PFO1/4. Red maple-sensitive fern swamps in which balsam fir is not a dominant species are classified as PFO1.

## **4.3 Mixed Graminoid-Shrub Marsh**

Mixed graminoid-shrub marsh, a common community in Maine, is present throughout NAS Brunswick. These areas may be transitional to other wetland types or to open water, or they may occur as a large wetland complex. The plant community structure ranges from containing only herbs and no shrubs to having a dominant shrub layer (Gawler and Cutco 2004). In the Cowardin et al. (1979) classification system, the wetlands with predominately herbaceous cover are classified as PEM wetlands, and those with predominately shrubs as cover are classified as PSS wetlands. At NAS Brunswick, these communities range from being dominated by herbs to dominated by shrubs. There are an estimated 78 acres of mixed graminoid-shrub marsh at NAS Brunswick. Mixed graminoid-shrub marshes dominated by herbs were observed at the southern end of the airfield; in a meadow adjacent to an antenna field on the west side of the airfield; and in a wetland located in the south-central portion of the installation. Mixed graminoid-shrub marshes dominated by shrubs were observed in the weapons compound.

## **4.4 Freshwater Tidal Marsh**

Freshwater tidal marshes are found in the upper reaches of tidal influence and are typically fed by a freshwater stream or river. The salinity is typically less than 0.5 parts per thousand (ppt) (Gawler and Cutco 2004). In the Cowardin et al. (1979) classification system, these wetlands are classified as E2EM. Freshwater tidal marshes are found in small areas where Mere Brook and other smaller tributaries empty into Harpswell Cove and Buttermilk Cove. There are approximately 9 acres of freshwater tidal marshes on NAS Brunswick. This wetland community type is dominated by herbaceous vegetation, including cattails, rice cutgrass (*Leersia oryzoides*), northern water plantain (*Alisma triviale*), and pickerelweed (*Pontederia cordata*).

#### **4.5 Brackish Tidal Marsh**

Large expanses of brackish tidal marshes are located along the coastal areas of NAS Brunswick. In the Cowardin et al. (1979) classification system, these wetlands are classified as E2EM. These marshes were identified in the upper portion of Harpswell Cove and Buttermilk Cove, downgradient of the freshwater tidal marsh communities, and were also identified along the edges of the estuaries. Salinity levels within this community can range from 0.5 to 18 ppt (Gawler and Cutko 2004). The vegetation consists of a mixture of saltmeadow cordgrass (*Spartina patens*), smooth cordgrass (*Spartina alterniflora*), and a variety of rushes and sedges. Approximately 77 acres of brackish tidal marsh are located at NAS Brunswick.

#### **4.6 Spartina Salt Marsh**

Spartina salt marshes are dominated by smooth cordgrass and are often referred to as “high marshes.” In the Cowardin et al. (1979) classification system, these wetlands are classified as E2EM. The name “high marsh” comes from the higher elevation in which the salt marsh forms. They are typically found on elevated plateaus in which organic matter can build up to several meters thick. Spartina salt marshes are able to tolerate high levels of salinity. This coastal wetland community is found on the southern portion of NAS Brunswick, in Harpswell Cove. Approximately 23 acres of spartina salt marshes are located at NAS Brunswick.

#### **4.7 Subtidal Estuary**

Brunswick is a coastal area that borders Casco Bay of the Atlantic Ocean. Harpswell Cove and Buttermilk Cove are subtidal estuaries within Casco Bay. Subtidal estuaries are characterized as open-water areas heavily influenced by the tide. They support submerged and floating plants but, due to the varying conditions, not emergent vegetation. These areas include tidal flats, which serve as important feeding areas for shorebirds and habitat for a variety of fish and crustaceans. The locations of the estuaries were visually noted during the 2008 field surveys, but surveys for plant community composition were not conducted. Approximately 18 acres of subtidal estuaries are located at NAS Brunswick.

# 5

## Wetland Functions and Values

### 5.1 Functions and Values Assessed

Wetland functions are the dynamic ecological properties provided or performed by a wetland. These functions are developed by biotic and abiotic means within the wetland, with self-sustaining properties that are not gauged or affected by human values. The benefits that society derives from one or more of the wetland functions are the wetland values. The following sections outline the functions and values that the USACE takes into account during the Section 404 permit process. These definitions were taken directly from the *Highway Methodology Workbook* (USACE 1993).

#### 5.1.1 Functions

##### **Groundwater Recharge/Discharge**

This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

##### **Floodflow Alteration**

This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion- and/or flood-prone areas.

##### **Fish and Shellfish Habitat**

This function considers the effectiveness of seasonal watercourses or permanent waterbodies associated with wetlands for fish habitat.

##### **Sediment/Toxicant/Pathogen Retention**

This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

##### **Nutrient Removal/Retention/Transformation**

This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of

the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

**Production Export**

This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization**

This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat**

This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**5.1.2 Values**

**Recreation (Consumptive and Non-consumptive)**

This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value**

This value considers the suitability of the wetland as a site for an “outdoor classroom” or as a location for scientific study or research.

**Uniqueness/Heritage**

This value considers the effectiveness of the wetland or its associated water bodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, and its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation, and habitat diversity.

**Visual Quality/Aesthetics**

This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat**

This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

In total, 103 wetland areas at NAS Brunswick were assessed for the functions and values listed above (see Table 5-1). Attachment 3 includes a series of figures identifying wetlands assessed by cluster.

**Table 5-1 Wetland Functions and Values**

Functions	Values
Groundwater Recharge/Discharge	Recreation
Floodflow Alteration	Education/Scientific Value
Fish and Shellfish Habitat	Uniqueness/Heritage
Sediment/Toxicant/Pathogen Retention	Visual Quality/Aesthetics
Nutrient Removal/Retention/Transformation	Endangered Species Habitat
Production Export	
Sediment/Shoreline Stabilization	
Wildlife Habitat	

## 5.2 Cluster 1

Eleven wetlands (FA 5, 6, 7, 11, 13, 15, 16, 17, 18, 19, 78) in the northern portion of NAS Brunswick have a possible hydrologic connection with the Androscoggin River (see Figure 1 of Attachment 3). These wetlands are predominately classified as forested wetlands (FA 11 and FA 16 are PSS, and FA 15 is PEM) within upland communities of white pine plantation or mixed forest dominated by white pine, red oak, and red maple. Many of these wetlands have been highly impacted by development within and adjacent to NAS Brunswick and the construction of the storm water system on the site and are generally of low quality. Primary functions of these wetlands include groundwater recharge, floodflow alteration, sediment/toxicant/pathogen retention, and nutrient removal/retention/transformation.

## 5.3 Cluster 2

Four wetlands (FA 8, 9, 10, 12) in the northern portion of NAS Brunswick do not have an apparent surface water connection to waters of the U.S (see Figure 2 of Attachment 3). These isolated wetlands still perform many of the same functions as other wetlands; however, they may not be considered jurisdictional by the USACE and, therefore, would not be regulated under the Clean Water Act. These are forested wetlands formed in topographic depressions dominated by red maple within upland communities of white pine plantation or mixed forest dominated by white pine, red oak, and red maple. These wetlands exhibit many of the functions normally associated with wetlands; however, due to their position in the landscape and the degradation caused by adjacent development, the level of functionality is minimal and these wetlands are therefore of low quality. The primary functions of these wetlands include groundwater recharge, floodflow alteration, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation and limited wildlife habitat.

## 5.4 Cluster 3

Eleven wetlands (FA 14, 25, 26, 27 32, 33, 34, 35, 36, 37, 38) in the northeastern portion of NAS Brunswick have a hydrologic connection to an unnamed tributary of Mere Brook (see Figure 3 of Attachment 3). These are forested wetlands or emergent wetlands primarily bordering the unnamed tributary of Mere Brook.

Adjacent upland communities are forested areas of red oak-northern hardwoods-white pine, or maritime spruce-fir habitat. Many of these wetlands have been highly impacted by development on the site. The wetlands within the developed areas (FA 14, 32, 33, 34, 35, 36, 37, 38) are generally of low quality due to habitat fragmentation and alteration. Their primary functions include groundwater recharge, floodflow alteration, sediment/toxicant/pathogen retention, nutrient removal and retention, production export, wildlife habitat, and sediment/shoreline stabilization. The wetlands within the forested portions (FA 25, 26, 27) are less impacted and have greater function and value, including groundwater discharge, floodflow alteration, wildlife habitat, recreation, and production export.

### **5.5 Cluster 4**

Six wetlands (FA 20, 21, 22, 23, 24, 47) in the eastern-central portion of NAS Brunswick have a hydrologic connection to an unnamed tributary of Mere Brook (see Figure 4 of Attachment 3). These are forested, emergent, and scrub-shrub wetlands primarily bordering the unnamed tributary of Mere Brook. Adjacent upland communities are forested areas of red oak-northern hardwoods-white pine, white pine plantations, or maritime spruce-fir habitat. These wetlands have been highly impacted by development on the site. The wetlands within the developed areas (FA 20, 21, 22) are generally of low quality due to habitat fragmentation and alteration. Their primary functions include groundwater recharge, floodflow alteration, sediment/toxicant/pathogen retention, and sediment/shoreline stabilization, with some limited functions as wildlife habitat. The wetlands within the forested portions (FA 23, 24, 47) are less impacted and provide greater function and value, including groundwater recharge, floodflow alteration, sediment/toxicant/pathogen retention, wildlife habitat (including finfish habitat), and sediment/shoreline stabilization. The upland forest bordering these wetlands currently provides recreational value with a picnic area, ball fields, and hiking trails; however, activities within the wetlands and open water, such as fishing and swimming, are prohibited.

### **5.6 Cluster 5**

Four wetlands (FA 28, 29, 30, 31) in the eastern portion of NAS Brunswick do not have an apparent surface water connection to waters of the U.S (see Figure 5 of Attachment 3). These are forested wetlands formed in topographic depressions dominated by red maple within upland maritime spruce-fir communities. While these wetlands exhibit many of the functions normally associated with wetlands, the degree of functionality is minimal due to their position in the landscape and degradation caused by nearby development. Primary functions of these wetlands include groundwater recharge, floodflow alteration, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, and wildlife habitat. In addition, these wetlands serve an important function as vernal pools, providing crucial habitat for breeding amphibians such as spotted salamanders (*Ambystoma maculatum*) and wood frogs (*Rana sylvatica*) (E & E 2009).

### **5.7 Cluster 6**

Eight wetlands in the east-central (FA 48, 49, 60, , 61, 63, 64, 65, 66, 67) and southeastern (FA 1, 2) portions of NAS Brunswick have a surface hydrologic connec-



tion to Mere Brook where it reemerges to the surface from under the eastern side of the airfield (see Figure 6 of Attachment 3). The northern six wetlands are forested, emergent and scrub-shrub wetlands primarily bordering Mere Brook (FA 48, 49, 60, 65) or alternately draining into Mere Brook through an adjacent wetland or small tributary (FA 61, 63, 64, 66, 67). Adjacent upland communities are forested areas of red oak-northern hardwoods-white pine, or maritime spruce-fir habitat. These wetlands provide a variety of functions and values, including groundwater recharge and discharge, floodflow alteration, production export, and wildlife habitat, including vernal pool habitat and potentially finfish habitat (E & E 2009). These wetlands are currently located within a fenced area with restricted access and, therefore, provide limited recreational value. In addition, there are potential safety concerns due their proximity to an explosive ordnance disposal pit.

Two of these wetlands are located adjacent to Mere Brook in the southeastern portion of the site, where they are tidally influenced: FA 1 (a spartina salt marsh) and FA 2 (a brackish tidal marsh). The adjacent upland is maritime spruce-fir forest. The primary functions of these wetlands include floodflow alteration, production export, and wildlife habitat. In addition, this large forested area remains undeveloped and has the potential to provide recreational value for hiking.

### **5.8 Cluster 7**

Ten wetlands (FA 3, 4, 40, 41, 42, 43, 44, 45, 46, 62) in the southeastern portion of NAS Brunswick do not have an apparent surface water connection to waters of the U.S (see Figure 7 of Attachment 3). These are forested and scrub-shrub wetlands formed in topographic depressions within upland communities of mixed red oak-northern hardwoods-white pine, or maritime spruce-fir forest. While these wetlands exhibit many of the functions normally associated with wetlands, the functions they perform may be limited due to the lack of hydrologic connections resulting from their position in the landscape. The primary functions of these wetlands include groundwater recharge, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, and wildlife habitat (including significant vernal pool habitat) (E & E 2009). In addition, this large forested area remains undeveloped and has the potential to provide recreational value for hiking and educational/scientific value for the study of vernal pools and their inhabitants.

### **5.9 Cluster 8**

Three wetlands (FA 50, 51, 52) in the southern portion of NAS Brunswick are hydrologically connected to each other by a small stream and culverts, which have a hydrologic connection to Harpswell Cove (see Figure 8 of Attachment 3). The adjacent upland community is maritime spruce-fir forest. While these wetlands have been altered (FA 51 is impounded by a berm and outflow is culverted into FA 50), these wetlands provide a variety of functions. Their primary functions include floodflow alteration, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, and wildlife habitat (including significant vernal pool habitat and potential finfish habitat) (E & E 2009). In addition, this large forested area remains undeveloped and has the potential to

provide recreational value for hiking and educational/scientific value for the study of vernal pools and their inhabitants.

### **5.10 Cluster 9**

Twelve wetlands (FA 56, 57, 58, 59, 68, 69, 70, 71, 76, 77, 79, 80) in the southern portion of NAS Brunswick have a surface hydrologic connection to Mere Brook from the western side of the installation through several unnamed tributaries (see Figure 9 of Attachment 3). Surrounding forested upland communities include mixed red oak, northern hardwoods and white pine, and aspen-birch woodlands. Many of these wetlands border the main tributary that flows through the golf course and have been highly altered to drain runoff from the course. In addition, several impounded areas within the golf course are bordered by wetlands.

Wetlands FA 56, 57, 58, 59, 68, and 77 are relatively narrow, directly bordering unnamed perennial tributaries. These are forested, emergent, and scrub-shrub wetlands. Their primary functions include groundwater recharge and discharge, floodflow attenuation, sediment/toxicant/pathogen retention, production export, and wildlife habitat, and they also provide value for recreation.

Wetlands FA 69, 70, 71, 76, 79, and 80 are larger areas of forested, scrub-shrub and emergent wetlands that drain into unnamed perennial tributaries of Mere Brook. Their primary functions include groundwater discharge, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, wildlife habitat, and sediment and shoreline stabilization.

In addition, in 2008 and 2009, Cluster 9 wetlands were found to contain 12 vernal pools, some of which are considered significant (TRC 2008; E & E 2009).

### **5.11 Cluster 10**

Two wetlands (FA 53, 55) in the southwestern portion of NAS Brunswick have surface hydrologic connections to unnamed tributaries of Middle Bay Cove (see Figure 10 of Attachment 3). Wetland FA 53 is a large scrub-shrub wetland bordered by forested upland communities, including maritime spruce fir and mixed red oak, northern hardwoods, and white pine. This wetland, which is located adjacent to the golf course, is formed in a depression within the forest landscape and is bisected by a dirt road. It is connected to an ephemeral tributary of Middle Bay Cove by a system of culverts. While this wetland is highly altered, its primary functions include nutrient removal/retention/transformation, production export, and wildlife habitat, including significant vernal pool habitat (E & E 2009).

FA 55 is a large ponded area within a mixed red oak, northern hardwoods, and white pine forest. Located adjacent to the golf course, this area is culverted under the roadway into a perennial tributary of Middle Bay Cove. Due to its highly altered condition, this area provides limited wetland functions, but does provide some level of floodflow alteration, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, and sediment/shoreline stabilization.

### **5.12 Cluster 11**

Two wetlands (FA 73, 74) in the southwestern portion of NAS Brunswick have a potential surface hydrologic connection to Miller Brook (located outside of the installation boundaries) where it flows from an impoundment on the western side of Harpswell Road (see Figure 11 of Attachment 3). Both wetlands border a seasonal stream that is culverted under the roadway. Wetland FA 73 is a forested wetland dominated by red maple and speckled alder. Wetland FA 74 is a scrub-shrub wetland dominated by speckled alder. The surrounding upland is red oak, mixed hardwoods, and white pine forest. These wetlands appear to be of high quality due to limited impacts resulting from the development at NAS Brunswick; however, construction of a roadway to the north of these wetlands appears to have isolated FA 82 from this drainage. The primary functions of these wetlands are groundwater recharge, floodflow alteration, wildlife habitat, production export. These wetlands have the potential for recreational value by providing hiking opportunities.

### **5.13 Cluster 12**

Six wetlands (FA 54, 72, 75, 82, 83, 84) in the southwestern and western portions of NAS Brunswick do not have an apparent surface water connection to waters of the U.S (see Figure 12 of Attachment 3). These wetlands are primarily forested wetlands (FA 54 is emergent and FA 72 is scrub-shrub) formed in topographic depressions dominated by red maple within upland communities of maritime spruce fir. While these wetlands exhibit many of the functions normally associated with wetlands, the level of functionality is minimal due to their position in the landscape and degradation caused by adjacent development; therefore, these wetlands are of low quality. Though limited, the primary functions these wetlands provide include groundwater recharge, floodflow attenuation, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, and wildlife habitat. In addition, this cluster of wetlands serves an important function in terms of wildlife habitat and were found to contain significant vernal pool habitat (TRC 2008; E & E 2009). These wetlands also have potential value for recreation and educational opportunities.

### **5.14 Cluster 13**

Six wetlands (FA 81, 86, 87, 88, 89, 90) in the western portion of NAS Brunswick have a potential hydrologic connection to Mere Brook (see Figure 13 of Attachment 3). These wetlands are located in low-laying areas to the west of the airfield and, based on topography, appear to drain northward and converge at a location that either links underground to Cluster 12 or drains under the airfield into Mere Brook. These wetlands are predominantly forested (FA 88 is scrub-shrub and FA 89 is emergent) surrounded by upland forested communities of red oak-northern hardwoods-white pine, or aspen-birch forest. These wetlands have been altered and degraded due to the development of the airfield and other facilities at NAS Brunswick. However, they do provide the primary functions of groundwater recharge, floodflow alteration, sediment/toxicant/pathogen retention, production export, and wildlife habitat. In addition, these wetland provide valuable vernal pool habitat for breeding amphibians (TRC 2008).

### **5.15 Cluster 14**

Four wetlands (FA 91, 92, 93, 99) in the western portion of NAS Brunswick do not have an apparent surface water connection to waters of the U.S (see Figure 14 of Attachment 3). These isolated wetlands still perform many of the same functions as other wetlands; however, they are not considered jurisdictional by the USACE and are not protected by the Clean Water Act. These wetlands are predominantly scrub-shrub wetlands (FA 91 is forested) formed in topographic depressions within upland communities of white pine plantation or aspen-birch woodland. While these wetlands exhibit many of the functions normally associated with wetlands, the level of functionality is minimal due to their position in the landscape and degradation caused by adjacent development; therefore, these wetlands are of low quality. The primary functions they provide include floodflow alteration, sediment/toxicant/pathogen retention, and wildlife habitat. In addition, FA 99 surrounds a pond that may provide finfish habitat and limited opportunities for recreation.

### **5.16 Cluster 15**

Fourteen wetlands (FA 85, 94, 95, 96, 97, 100, 101, 102, 103, 104, 105, 106, 107, 108) in the western portion of NAS Brunswick have a surface hydrologic connection to unnamed tributaries of Mere Brook or directly to Mere Brook (see Figure 15 of Attachment 3). Many of these wetlands have been highly impacted by development of the airfield. Mere Brook flows under the airfield and reemerges on the eastern side. The primary functions of these wetlands include groundwater recharge and discharge, floodflow alteration, sediment/toxicant/pathogen retention, production export, and wildlife habitat. In addition, in 2008 this cluster of wetlands was found to contain a significant vernal pool (TRC 2008).

# 6

## Conclusions and Summary

Considering these wetlands as individual units or smaller groupings would minimize their functionality and reduce their value to the ecosystem. Alternatively, considering all of the site's wetlands as one large unit with tidal and non-tidal components, including forested, scrub-shrub, and emergent cover types and the interspersed upland communities, would unnecessarily increase their assessed value to the ecosystem. Therefore, it was concluded that assessing these wetlands in functionally related clusters based on their degree of hydrologic connection/interdependence and/or physical location and proximity within the landscape was the most effective way in which to assess the functionality of the site's wetlands.

Owing to the unique nature of the site as a limited-access naval base, the site's wetlands do not currently provide recreational or educational value. However, following redevelopment of the installation, several areas could provide high recreational or educational value.

No known endangered or threatened species are known to utilize the wetlands on the installation. However, many of the wetland areas provide valuable wildlife habitat, including significant vernal pools that serve as primary breeding habitat for amphibians (TRC 2008; and E & E 2009).

At many locations the visual/aesthetic appeal of the landscape has been compromised by significant site development. In addition, many wetlands have been highly altered to provide for the storm water detention and drainage system on the site. These alterations, while necessary for prior development on the site, have limited the ability of many wetlands to provide functions such as groundwater recharge and discharge, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, and wildlife habitat by channelizing drainages and artificially directing the flow of water on the site.

The primary wetland functions identified include groundwater recharge, flood-flow alteration, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, wildlife habitat, and sediment/shoreline stabilization. All of these functions are served to some extent by the installation's wetlands. Future site development that would impact site wetland functions may require further analysis and quantification of wetland functions.

# 7

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# 1

## Photographs of the Wetlands for Functional Assessment





**Wetland 1 – Photo 251 Southwest**



**Wetland 2 – Photo 183 Northwest**





**Wetland 3 – Photo 184 North**



**Wetland 4 – Photo 185 East**





**Wetland 5 – Photo 192 Southwest**



**Wetland 6 – Photo 193 Southwest**





**Wetland 7 – Photo 194 Northwest**



**Wetland 8 – Photo 195 North**





**Wetland 9 – Photo 196 North**



**Wetland 10 – Photo 197 North**





**Wetland 11 – Photo 198 East**



**Wetland 12 – Photo 199 North northwest**





**Wetland 13 – Photo 200 South southwest**



**Wetland 14 – Photo 201 Northwest**





**Wetland 15 – Photo 202 North**



**Wetland 16 – Photo 203 Southwest**





**Wetland 17 – Photo 204 Southwest**



**Wetland 18 – Photo 205 South**





**Wetland 19 – Photo 206 Southeast**



**Wetland 20 – Photo 207 South**





**Wetland 21 – Photo 208 East**



**Wetland 22 – Photo 209 South**





**Wetland 23 – Photo 210 Northeast**



**Wetland 24 – Photo 211 Southwest**



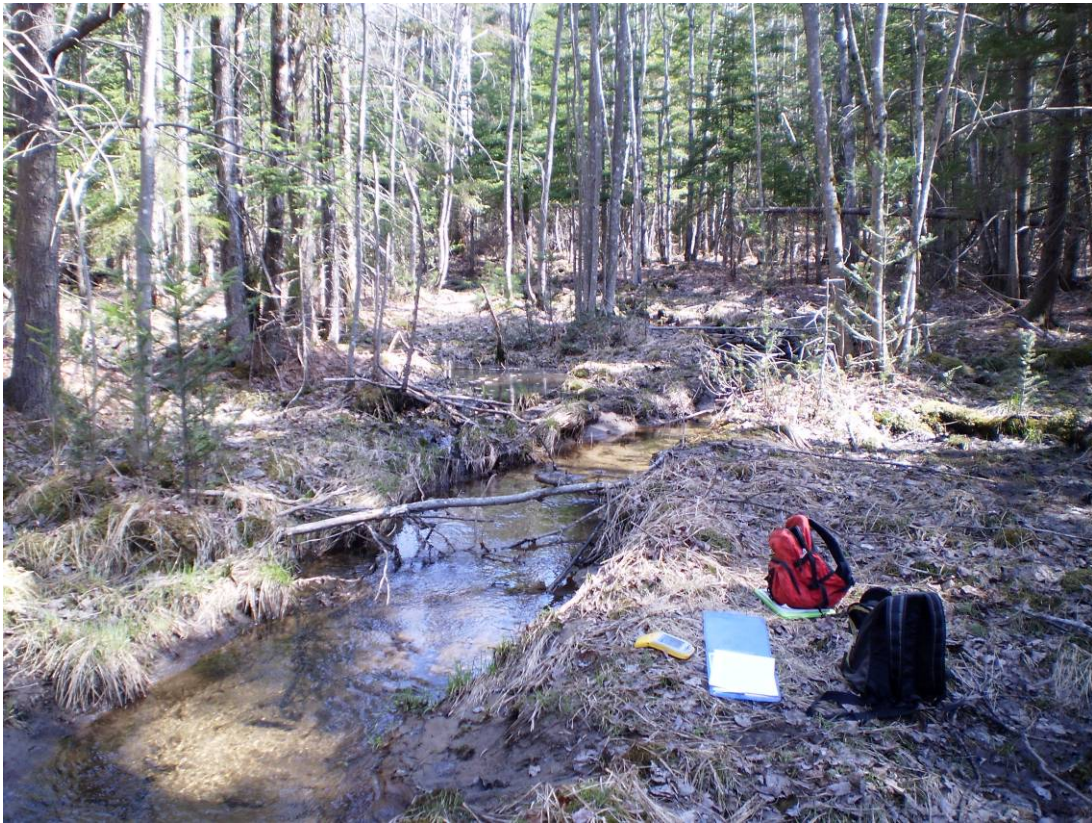


**Wetland 25 – Photo 212 West**



**Wetland 26 – Photo 213 North**





**Wetland 27 – Photo 214 Northeast**



**Wetland 28a – Photo 215 Northeast**





**Wetland 28b – Photo 216 Southwest**



**Wetland 29 – Photo 217 Northwest**





**Wetland 30 – Photo 218 Northeast**



**Wetland 31 – Photo 219 East**





**Wetland 32 – Photo 220 Northeast**



**Wetland 33 – Photo 221 South**





**Wetland 34 – Photo 222 South**



**Wetland 35 – Photo 223 South southeast**





**Wetland 36 – Photo 224 Southeast**



**Wetland 37 – Photo 225 South**





**Wetland 38 – Photo 226 North northwest**



**Wetland 39 – Photo 227 North**





**Wetland 40 – Photo 228 South**



**Wetland 41 – Photo 229 North**





**Wetland 42 – Photo 230 South**



**Wetland 43 – Photo 231 South**





**Wetland 44 – Photo 232 South**



**Wetland 45 – Photo 233 South**





**Wetland 46 – Photo 234 North northeast**



**Wetland 47 – Photo 235 Southeast**





**Wetland 48 – Photo 236 West**



**Wetland 49 – Photo 237 West**





**Wetland 50 – Photo 238 Southwest**



**Wetland 51 – Photo 239 Northwest**





**Wetland 52 – Photo 240 North**

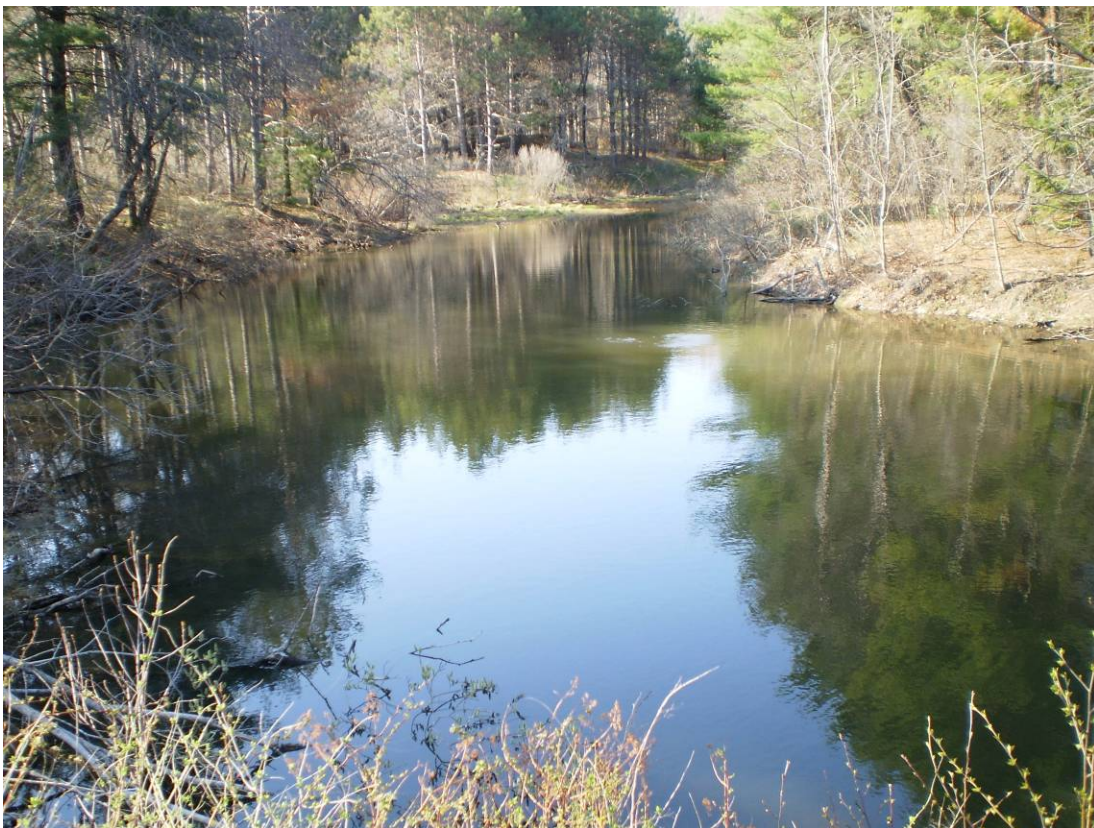


**Wetland 53 – Photo 241 South**





**Wetland 54 – Photo 242 East**



**Wetland 55 – Photo 243 North**





**Wetland 56 – Photo 244 Northwest**



**Wetland 57 – Photo 245 North**





**Wetland 58 – Photo 246 East**



**Wetland 59 – Photo 247 Northwest**





**Wetland 60 – Photo 248 North**



**Wetland 61 – Photo 249 Southeast**





**Wetland 62 – Photo 256 North**



**Wetland 63 – Photo 257 North**





**Wetland 64 – Photo 258 West**



**Wetland 65 – Photo 259 Northwest**





**Wetland 66 – Photo 260 East**



**Wetland 67 – Photo 262 West**





**Wetland 68 – Photo 263 North**



**Wetland 69 – Photo 264 Southwest**





**Wetland 70 – Photo 265 South**



**Wetland 71 – Photo 266 East**





**Wetland 72 – Photo 267 Southwest**



**Wetland 73 – Photo 268 Northeast**





**Wetland 74 – Photo 269 Southwest**



**Wetland 75 – Photo 270 West**





**Wetland 76 – Photo 271 Northwest**



**Wetland 77 – Photo 272 North northeast**





**Wetland 78 – Photo 274**



**Wetland 79 – Photo 275 North northeast**





**Wetland 80 – Photo 276 East**



**Wetland 81 – Photo 277 Northeast**





**Wetland 82 – Photo 278 Northeast**



**Wetland 83 – Photo 279 North**





**Wetland 84 – Photo 280 Northeast**



**Wetland 85 – Photo 281 South**





**Wetland 86 – Photo 282 Northeast**



**Wetland 87 – Photo 283 South**





**Wetland 88 – Photo 284 North**



**Wetland 89 – Photo 285 North**





**Wetland 90 – Photo 286 Southwest**



**Wetland 91 – Photo 287 Southwest**





**Wetland 92 – Photo 288 Northwest**



**Wetland 93 – Photo 289 West**





**Wetland 94 – Photo 290 Northeast**



**Wetland 95 – Photo 291 South southwest**





**Wetland 96 – Photo 292 Southwest**



**Wetland 97 – Photo 293 Southeast**





**Wetland 98 – Photo 294 Northwest**



**Wetland 99 – Photo 295 Northwest**





**Wetland 100 – Photo 296 Southwest**



**Wetland 101 – Photo 297 West**





**Wetland 102 – Photo 298 Southeast**



**Wetland 103 – Photo 299 East**





**Wetland 104 – Photo 300 Southwest**



**Wetland 105 – Photo 301 Southwest**





**Wetland 106 – Photo 302 North**



**Wetland 107 – Photo 303 Northwest**





**Wetland 108 – Photo 304 Northwest**



# 2

## Wetland Functional Assessment Datasheets



Photo # 251 Direction: SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 1 Zone 7 Date: 4/16 N/A Functional Unit: Weather: Sunny N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent	Shrub	Salt-marsh, tidal influence			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes  No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes  No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines

Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees  
 stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems

Hypertrophied lenticels Stooling Inflated leaves,  
 Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle  Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate  Steep

Cover Types: Mature forest  Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density (S/M/D): Trees D Saplings M Shrubs NA Herbs S Grass S  
 slight/mod/dense

Soils: BuC2 - Buxton silt loam



Leaf litter:

Well developed

Moderately well developed

Absent

Cover objects:

Logs

Bark

Boulders

Rocks

Evidence of Erosion:

No Yes

(Explain) Stream incised along bank

GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		No		
Slope	Gentle		Moderate or Steep		
Function Present	Yes No				
Degree of Function	High	Mod	Low		

GWD/GROUNDWATER DISCHARGE

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		

FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	Gentle		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		No		
Wetland vegetation density	High		Low		
Wetland microrelief	Well developed		None/Poorly developed		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	Tidal
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input checked="" type="radio"/> High	<input type="radio"/> Mod	<input type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Insects + birds
Fish or shellfish develop/occur in wetland	<input checked="" type="radio"/> Yes	No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	<input type="radio"/> Mod	<input type="radio"/> Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes	No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes	<input checked="" type="radio"/> No	
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes	No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

some erosion

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	



Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	Yes	<del>No</del>	No recreation allowed
Degree of Function	High	Mod	

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes F	No	
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	Yes	No	to estuary
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	<del>Abundant</del>	Few	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)	H & LL		
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Mature forest - softwood
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<del>Abundant</del> SE	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	None or Low	High	
Function Present	<del>Yes</del>	No	
Degree of Function	<del>High</del>	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)			No	
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	No public access
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Airplanes
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	<input checked="" type="radio"/> No
Degree of Function	High	Mod <input checked="" type="radio"/> Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
MOD/High	High	/	Mod	High	High	Low	High	Low	Low	Mod	Low

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



Photo 183 Northwest  
**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS

Wet Id#: FA2 7

Zone

Date: N/A Functional Unit:

Weather:

Sunny

N/A

Time Start:

N/A

Time Stop: N/A

Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A

Below average

Average

Above Average

Don't Know

TBD

Wildlife Investigation Method: Cover search

Dip netting

Auditory

Scat

Tracks

Minnow Traps

Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
<u>PFL / Seasonally Flooded Flats</u>	<u>Emergent</u>	Shrub	<u>Tidally influenced</u>			
PEM / Wet Meadow	Ungrazed	Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous	Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present: Yes No

If Present: Slope or Depressional

Depth to free water:

Depth to saturation: 0

Surface water depth: average - maximum -

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks

Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees  
 stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems

Hypertrophied lenticels Stooling Inflated leaves,  
Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

**Upland Border:**

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs M Grass

Buc2 - Buxton silt loam



Leaf litter:

Well developed

Moderately well developed

Absent

Cover objects:

Logs

Bark

Boulders

Rocks

Evidence of Erosion:

No Yes

(Explain) Veg covered banks

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		No		
Slope	Gentle		Moderate or Steep		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	Gentle		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		No		
Wetland vegetation density	High		Low		
Wetland microrelief	Well developed		None/Poorly developed		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	Absent
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del>

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		<del>No</del>	
Duration of water retention in wetland	Long		<del>Short</del>	
Evidence of sediment trapping in wetland	<del>Yes</del>		Low	
Vegetation density	<del>High</del>		No	
Wetland edge broad and intermittently aerobic	<del>Yes</del>		Low	
Drainage ditches in wetland	No		<del>Yes</del>	
Water flow through wetland	Diffuse		<del>Channelized</del>	
Ponded water present	<del>Yes</del>		No	
Wetland basin topographic gradient	<del>Low</del>		High	
Fine grained mineral or organic soils present	<del>Yes</del>		No	
Watercourse, if present, has visible velocity decreases in wetland	<del>Yes</del>		No	
Indicators of erosion or high water velocities are present	No		<del>Yes</del>	
Function Present	<del>Yes</del>		No	
Degree of Function	High	<del>Mod</del>	Low	

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		<del>Small</del>	
Potential sources of excess nutrients upstream	Yes		<del>No</del>	
Wetland is saturated most of the season	Yes		<del>No</del>	
Emergent vegetation and/or dense woody stems are dominant	<del>Yes</del>		No	
Water flow through wetland	Diffuse		<del>Channelized</del>	
Vegetation density	<del>High</del>		Low	
Potential for sediment trapping exists	<del>Yes</del>		No	
Deep or open water habitat is present	<del>Yes</del>		No	
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	<del>Low</del>		High	
Wetland microrelief	<del>Well developed</del>		None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	
Fish or shellfish develop/occur in wetland	<input checked="" type="radio"/> Yes		No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes		<input checked="" type="radio"/> No	
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes		No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

No public access

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	M Tidal
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)	H, LL		
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	Logs
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	No public access
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	High	Low	mod	Mod	High	Low	High	Low	Low	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

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**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



Photo 1B4  
**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: FA3 2-7      Date: N/A      Functional Unit:      Weather: Sunny N/A      Time Start: N/A      Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed			Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded		Emergent		

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow  
 Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present: Yes      No

If Present: Slope or Depressional

Surface water depth: average - 4"      maximum - 7"

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators: Inundated      Saturated in upper 12"      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology: Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves,  
 stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: Well      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope: Nearly level      Gentle      Moderate      Steep

**Upland Border:**

Slope: Nearly level      Gentle      Moderate      Steep

Cover Types: Mature forest      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density(S/M/D): Trees D      Saplings M      Shrubs M      Herbs S      Grass D

→ Adj. to weapons area

wrB - wood bridge sandy loam

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		No	
Slope	Gentle		Moderate or Steep	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		No	
Wetland microrelief	Well developed		Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes		No	Both an inlet and outlet
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Amount of impervious surface in wetland watershed	Large		Small	
Wetland Slope	Gentle		Moderate      Steep	
Wetland characterized by variable water level?	Yes		No	
Wetland in floodplain of adjacent watercourse	Yes		No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No	
Watershed has a history of economic loss due to flooding	Yes		No	
Wetland outlet restricted	Yes		No	
Wetland vegetation density	High		Low	
Wetland microrelief	Well developed		None/Poorly developed	



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	Northern end
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	NA
Indicators of erosion or high water velocities are present	No	Yes	NA
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Egg masses
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)	SH, S, H, LL		
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Snags + Logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	No public access
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Airfield
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/mod	Mod	NO	High	High	High	No	High	Low	No	No	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: FA4-2096 <sup>4/16</sup>      Date: N/A      Functional Unit:      Weather: Sunny N/A      Time Start: N/A      Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic	
<u>PFO / Wooded Swamp</u>	Deciduous	<u>Evergreen</u>	<u>conifers</u>			
Bog	Compact shrub	Bushy shrub	Wooded		Emergent	

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present: Yes      No

If Present: Slope or Depressional

Surface water depth:      average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators:      Inundated      Saturated in upper 12"      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves, stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: Well      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      Nearly level      Gentle      Moderate      Steep

**Upland Border:**

Slope:      Nearly level      Gentle      Moderate      Steep

Cover Types:      Mature forest      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density(S/M/D):      Trees      D      Saplings      M      Shrubs      S      Herbs      S      Grass

WRB - Woodbridge sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	<u>Sand/gravel outwash</u>		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	<u>High</u>	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		<i>Unknown</i>
Wetland vegetation density	<u>High</u>		<u>Low</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	<i>Weapons Area</i>
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	





Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria			Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes F	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High W	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)	T, S, H, LL		
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant L	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant L	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	Wooded swamp
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
High/mod	Low	/	High	Mod	Mod	/	High	/	/	/	/

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA5 2906 Date: N/A Functional Unit: Sunny Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification:

Class	Subclass					
POW/ Open water	Vegetated <u>Non-Vegetated</u>					
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes  No

If Present: Slope or Depressional:

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes  No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs S Herbs Grass D

Soil: 30D - Udorthents - Adams Complex

Leaf litter:

Well developed

Moderately well developed

Absent

Cover objects:

Logs

Bark

Boulders

Rocks

Evidence of Erosion:

No

Yes

(Explain)

Stable banks around pond

GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		No		
Slope	Gentle		Moderate or Steep		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		Ponded Area

GWD/GROUNDWATER DISCHARGE

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		Inlet & Outlet
Function Present	Yes		No		
Degree of Function	High	Mod	Low		Ponded Area

FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	Gentle		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		No		
Wetland vegetation density	High		Low		
Wetland microrelief	Well developed		None/Poorly developed		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	No emergent veg
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	potential runoff from fuel field
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	Ponded
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	<del>Low</del>

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	<del>No</del>	
Detritus development is present within this wetland	<del>Yes</del>	No	Some leaf litter at bottom
Flowering plants used by nectar gatherers present	Yes	<del>No</del>	
Evidence of wildlife use in wetland	Yes	<del>No</del>	
Fish or shellfish develop/occur in wetland	<del>Yes</del>	No	Potentially
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del>	Low

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	<del>Yes</del>	No	
Potential sediment sources upstream or upslope	Yes	<del>No</del>	
Wetland border >10' adjacent to pond or water	Yes	<del>No</del>	
Distinct shoreline or bank evident between wetland and water	<del>No</del>	Yes	
Open water fetch present	<del>Yes</del>	No	
Boating activity present	Yes	<del>No</del>	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	<del>No</del>	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del>	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<del>No</del>	
Fishing is available in or from the wetland	Yes	<del>No</del>	
Hunting is permitted in wetland	Yes	<del>No</del>	
Hiking occurs or has potential to occur in wetland	Yes	<del>No</del>	
Wetland is a valuable wildlife habitat	Yes	<del>No</del>	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	Road/culverts
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	Mostly open water
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)		T	
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Snags/fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	Logs
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	Birds, waterfowl stopover
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (E=Forest, M=Meadow, S=Sapling/shrub thicket, A=Agriculture)	High		Low	Forest / mowed fields - roadways
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	Pond
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	Limited access

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	Seen from road
Views absent trash, debris, sign of degradation	Yes		No	Litter
Low noise level	Yes		No	Road noise / airplanes
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes		No
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
High/No	Mod	Mod	Mod	Low	Mod	/	Mod	No	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FAB Zone Date: <sup>4/16</sup> N/A Functional Unit: Weather: <sup>Sunny</sup> N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated	Non-Vegetated				
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent	Shrub				
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes  No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings S Shrubs S Herbs Grass

Soil: 30D - Udorthents - Adams Complex

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	<u>High</u>	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly Developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>		
Wetland in floodplain of adjacent watercourse	Yes		No		<i>Ponded Area</i>
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		



Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	<u>Forest, Shrub, Meadow</u>	<u>Lawn</u>	
Shallow littoral zone with emergent vegetation present?	Yes	<u>No</u>	
Waterbody at least 10' deep	<u>Yes</u>	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	<i>No emergent veg.</i>
Direct stormwater discharge via culvert?	No	<u>Yes</u>	
Sandbar present at inlet?	<u>No</u>	Yes	
Water transparency	<u>High</u>	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	<u>No</u>	Yes	
Pond size $\geq 0.5$ acre	Yes	<u>No</u>	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	<u>No</u>	Yes	
Function Present	<u>Yes</u>	No	<i>Culverts.</i>
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	<u>Low</u>	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Roadway / Air field / Fuel field
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	WF egg mass, green frog tadpoles
Fish or shellfish develop/occur in wetland	Yes		No	Red-spotted newts.
Function Present	<input checked="" type="radio"/> Yes		No	Potentially.
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	Ponded area
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	<input checked="" type="radio"/> Yes		No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes		<input checked="" type="radio"/> No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	Culverting
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	Through culverts
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	OW
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			T/S/SH
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			T/S/SH/LL
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	F/S
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
High/No	mod	mod	mod	mod	mod	No	mod	No	No	mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 7 zone Date: 4/16/16 Functional Unit: Sunny Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodslime & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic	
<u>PFO/ Wooded Swamp</u>	<u>Deciduous</u>		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded		Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Roofly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs S Herbs M Grass

Soil: 30D - Udorthents - Adairus Complex

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks

Evidence of Erosion: No Yes (Explain) *Stream is somewhat incised.*

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		<u>Hardpan, tight fine-grained soils, shallow ledge</u>	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	<u>Hardpan, shallow ledge</u>			
Seeps, springs observed?	<u>Yes</u>		No	
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	<i>Along stream</i>
Function Present	<u>Yes</u>		No	
Degree of Function	High	<u>Mod</u>	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>		
Amount of impervious surface in wetland watershed	Large	Small		
Wetland Slope	<u>Gentle</u>	Moderate	Steep	
Wetland characterized by variable water level?	Yes	<u>No</u>		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>	No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	No		
Watershed has a history of economic loss due to flooding	Yes	No		
Wetland outlet restricted	Yes	<u>No</u>		
Wetland vegetation density	<u>High</u>	Low		
Wetland microrelief	<u>Well developed</u>	None/Poorly developed		



Function Present	Yes	No	
Degree of Function	High	Mod	Low
<i>Relatively small area</i>			

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	<i>Also near roadway</i>
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream) *Seasonal stream***

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	<i>Seasonal stream</i>
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Roadway
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod <input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	<input type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High	<input type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Flowering plants used by nectar gatherers present	<input type="radio"/> Yes	<input type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Insects
Fish or shellfish develop/occur in wetland	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod <input checked="" type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	<input type="radio"/> Yes	
Open water fetch present	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Boating activity present	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Water not clear
Function Present	<input type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod <input checked="" type="radio"/> Low	

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+			Comments
Wetland degradation by human activity	Little or None	Moderate to High		Stormwater culvert at end
Wetland fragmentation by development	Little or None	Moderate to High		Road ways / culverts
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No		
Buffer width	Good to Excellent	Fair to Poor		Narrow border -
Connectivity with other wetlands	Yes	No		Culverted
Size of landscape block in which wetland is located	Large	Small		
Wildlife food sources in wetland	Abundant	Few		
Interspersion of vegetation and open water	High	Low		
Upland islands	Present	Absent		
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low		M
Vegetation density	High	Low		
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)				Sh/H
Wetland plant species diversity	High Mod Low			
Vernal pool	Yes	No		
Edge diversity (List types)				
Water regime	Wetter	Drier		
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few		
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few		Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	Absent		
Sphagnum hummocks next to shallow pools	Present	Absent		
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent		
Abundance of invasive exotic flora	None or Low	High		
Function Present	Yes	No		
Degree of Function	High	Mod	Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	F/S
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Airplanes / Roadway
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
mod/mod	Mod	/	Low	Low	Low	/	Low	/	/	Low	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 8 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous	Evergreen	Mixed			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes  No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes  No

Hydrology indicators: Inundated  Saturated in upper 12"  Water marks  Drift lines  Sediment deposits  Drainage patterns within wetlands  Other

Plant Adaptations to Hydrology: Pneumatophores  Polymorphic leaves  Buttressed trees  Hypertrophied lenticels  Stooling  Inflated leaves, stems, or roots  Adventitious roots  Rhizospheric oxidation  Shallow root systems  Floating leaves  Floating stems

Soil Drainage classes: Well  Moderately Well  Somewhat Poorly  Poorly  Very Poorly  Mapped Hydric Soil

Slope: Nearly level  Gentle  Moderate  Steep

Upland Border:

Slope: Nearly level  Gentle  Moderate  Steep

Cover Types: Mature forest  Sapling forest  Shrub thicket  Meadow  Mowed lawn  Farm

Vegetation Density(S/M/D): Trees  n?  Saplings  Shrubs  Herbs  Grass

Soil: 11A - Haplagnents - Finch complex

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		No		
Slope	Gentle		Moderate or Steep		
Function Present	Yes      No				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		None/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	Gentle		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	Yes		No		No inlet/outlet
Wetland vegetation density	High		Low		
Wetland microrelief	Well developed		None/Poorly developed		



Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	Yes	No	
Degree of Function	High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

S&SS/SEDIMENT/SHORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	No	
Fishing is available in or from the wetland	Yes	No	
Hunting is permitted in wetland	Yes	No	
Hiking occurs or has potential to occur in wetland	Yes	No	
Wetland is a valuable wildlife habitat	Yes	No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILD LIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	No	No	No	No	No	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: FA9 Zone      Date: N/A Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic	
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>	<u>Evergreen</u>	<u>mixed conifer</u>			
Bog	Compact shrub		Bushy shrub	Wooded	Emergent	

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present:      Yes      No

If Present: Slope or Depressional

Surface water depth:      average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators:      Inundated      Saturated in upper 12"      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      *Pneumatophores*      *Polymorphic leaves*      *Buttressed trees*      *Hypertrophied lenticels*      *Stooling*      *Inflated leaves,*  
*stems, or roots*      *Adventitious roots*      *Rhizospheric oxidation*      *Shallow root systems*      *Floating leaves*      *Floating stems*

Soil Drainage classes: Well      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      Nearly level      Gentle      Moderate      Steep

**Upland Border:**

Slope:      Nearly level      Gentle      Moderate      Steep

Cover Types:      Mature forest      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density(S/M/D):      Trees M      Saplings S      Shrubs      Herbs      Grass

Soil: WmB - windsor loamy Sand

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	Sand/gravel outwash	Hardpan, tight fine-grained soils, shallow ledge.	
Wetland associated w/ perennial or seasonal watercourse	Yes	No	
Slope	Gentle	Moderate or Steep	
Function Present	Yes    No		
Degree of Function	High	Mod      Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	No	
Wetland microrelief	Well developed	None/Poorly developed	
Wetland contains an outlet, no inlet	Yes	No	No obs. inlet or outlet
Function Present	Yes	No	
Degree of Function	High	Mod      Low	Isolated wetland?

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Amount of impervious surface in wetland watershed	Large	Small	
Wetland Slope	Gentle	Moderate    Steep	
Wetland characterized by variable water level?	Yes	No	
Wetland in floodplain of adjacent watercourse	Yes	No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	No	
Watershed has a history of economic loss due to flooding	Yes	No	
Wetland outlet restricted	Yes	No	No outlet
Wetland vegetation density	High	Low	
Wetland microrelief	Well developed	None/Poorly developed	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Roadway
Duration of water retention in wetland	Long	Short	No outlet
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No Low	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	Seasonally ponded
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	Yes	No	Forested wetland
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Birds/insects
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

No public access

#### WLH/WILDLIFE HABITAT

Criteria	+		Comments
Wetland degradation by human activity	Little or None	Moderate to High	Roadways / Pipeline area
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Roadways
Buffer width	Good to Excellent	Fair to Poor	Fragmented
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	No access
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**U/H/UNIQUENESS/HERITAGE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**VQA/VISUAL QUALITY/AESTHETICS**

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Roadway
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**ESH/ENDANGERED SPECIES HABITAT**

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
low/NO	NO	No	Low	Low	NO	NO	Low	NO	NO	NO	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



**Zone 1 MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS    Wet Id#: **FA 10**    Date: N/A Functional Unit:    Weather: N/A    Time Start: N/A    Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios    Recent Precipitation: N/A    Below average     Average     Above Average     Don't Know     TBD   
 Wildlife Investigation Method: Cover search     Dip netting     Auditory     Scat     Tracks     Minnow Traps     Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<b>PSS / Shrub Swamp</b>	Sapling	<b>Bushy</b>	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>	Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded		Emergent	

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present:    Yes    No

If Present: Slope or Depressional

Surface water depth:    average -    maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?    Yes    No

Hydrology indicators:    **Inundated**    **Saturated in upper 12"**    Water marks    Drift lines    Sediment deposits    Drainage patterns within wetlands    Other

Plant Adaptations to Hydrology:    *Pneumatophores*    *Polymorphic leaves*    *Buttressed trees*    *Hypertrophied lenticels*    *Stooling*    *Inflated leaves,*  
*stems, or roots*    *Adventitious roots*    *Rhizospheric oxidation*    *Shallow root systems*    *Floating leaves*    *Floating stems*

Soil Drainage classes: Well    Moderately Well    Somewhat Poorly    **Poorly**    Very Poorly    Mapped Hydric Soil

Slope:    **Nearly level**    Gentle    Moderate    Steep

**Upland Border:**

Slope:    **Nearly level**    Gentle    Moderate    Steep

Cover Types:    **Mature forest**    Sapling forest    Shrub thicket    Meadow    Mowed lawn    Farm

Vegetation Density(S/M/D):    **Trees**    **D**    **Saplings**    **m**    Shrubs    Herbs    Grass

Similar to FA 9

*Wa - Walpole fine sandy loam - hydric*

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	<u>Sand/gravel outwash</u>	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes	<u>No</u>	
Slope	<u>Gentle</u>	Moderate or Steep	
Function Present	<u>Yes</u> No		
Degree of Function	High	Mod	<u>Low</u>

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	<u>No</u>	
Wetland microrelief	<u>Well developed</u>	Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes	<u>No</u>	<u>Isolated, no inlet or outlet</u>
Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Amount of impervious surface in wetland watershed	<u>Large</u>	Small	
Wetland Slope	<u>Gentle</u>	Moderate      Steep	
Wetland characterized by variable water level?	<u>Yes</u>	No	
Wetland in floodplain of adjacent watercourse	Yes	<u>No</u>	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>	No	
Watershed has a history of economic loss due to flooding	Yes	No	<u>Unknown</u>
Wetland outlet restricted	<u>Yes</u>	No	<u>No outlet</u>
Wetland vegetation density	<u>High</u>	Low	
Wetland microrelief	<u>Well developed</u>	None/Poorly developed	



Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant		Mostly tolerant	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		No	<i>Runoff from roadways</i>
Duration of water retention in wetland	Long		Short	
Evidence of sediment trapping in wetland	Yes		Low	
Vegetation density	High		No	
Wetland edge broad and intermittently aerobic	Yes		Low	
Drainage ditches in wetland	No		Yes	
Water flow through wetland	Diffuse		Channelized	
Ponded water present	Yes		No	
Wetland basin topographic gradient	Low		High	
Fine grained mineral or organic soils present	Yes		No	
Watercourse, if present, has visible velocity decreases in wetland	Yes		No	<i>No watercourse</i>
Indicators of erosion or high water velocities are present	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Potential sources of excess nutrients upstream	Yes		No	
Wetland is saturated most of the season	Yes		No	
Emergent vegetation and/or dense woody stems are dominant	Yes		No	
Water flow through wetland	Diffuse		Channelized	
Vegetation density	High		Low	
Potential for sediment trapping exists	Yes		No	
Deep or open water habitat is present	Yes		No	
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	Low		High	
Wetland microrelief	Well developed		None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition:  No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp + shrub swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, shrub, herb, leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Tree, sapling, herb
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest,
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Rowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
low/No	Mod	No	High	High	NO	NO	Low	NO	NO	NO	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

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**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Zone 1

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 11 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead	Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust		Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy		Compact	Aquatic	Speckled Alder	
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub		Bushy shrub		Wooded	Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
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Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No  
 If Present: Slope or Depressional  
 Surface water depth: average - maximum -

Depth to free water:  
 Depth to saturation:  
 Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines

Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees  
 stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems

Hypertrophied lenticels Stooling Inflated leaves,  
 Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep  
 Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm  
 Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs Grass

Soil - 11A - Haplaquents - Finch Complex - sandy  
 plantation

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No	<i>Ditch system</i>
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	<u>Yes</u>		No	
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed	<i>Hummocks</i>
Wetland contains an outlet, no inlet	Yes		<u>No</u>	
Function Present	<u>Yes</u>		No	
Degree of Function	High	Mod	<u>Low</u>	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		<i>Into another ditch</i>
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Roadway
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	Yes	<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	Yes	<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes	<input checked="" type="radio"/> No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		Comments
Wetland degradation by human activity	Little or None	Moderate to High	Ditching / Plantation
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Roadways & Ditching
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			SH - speckled Alder
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Plantation
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Road / Airplanes
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Low	Mod	No	High	High	Mod	No	Low	No	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: <sup>Zone 1</sup> FA 12 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip-netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic	
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>	Evergreen				
Bog	Compact shrub		Bushy shrub	Wooded	Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves  
 stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well **Somewhat Poorly** Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** D Saplings Shrubs Herbs Grass

white pine plantation

Soil: S2 Swanton fine sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	<u>Sand/gravel outwash</u>		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		Isolated
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		<u>No</u>		
Wetland outlet restricted	Yes		<u>No</u>		No outlet present
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	P
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Road runoff
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	No	
Fishing is available in or from the wetland	Yes	No	
Hunting is permitted in wetland	Yes	No	
Hiking occurs or has potential to occur in wetland	Yes	No	
Wetland is a valuable wildlife habitat	Yes	No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		Comments
Wetland degradation by human activity	Little or None	Moderate to High	Planted white pines surround Roadways / Pine Plantation
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (B=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes Forest	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	No open water
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			L, H
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**U/H/UNIQUENESS/HERITAGE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**VQA/VISUAL QUALITY/AESTHETICS**

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**ESH/ENDANGERED SPECIES HABITAT**

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/NO	NO	NO	Mod	Low	NO	NO	Low	NO	NO	NO	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: FA 13 Zone1      Date: N/A      Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>	Evergreen	<u>Red maple, speckled Alder</u>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present: Yes      No

If Present: Slope or Depressional

Surface water depth:      average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators:      Inundated      Saturated in upper 12"      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves,  
 stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: Well      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      Nearly level      Gentle      Moderate      Steep

**Upland Border:**

Slope:      Nearly level      Gentle      Moderate      Steep

Cover Types:      Mature forest      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density(S/M/D):      Trees      D      Saplings      Shrubs      Herbs      Grass

*white pine plantation*

*Soil: De A - Deerfield loamy sand*



Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		No	
Slope	Gentle		Moderate or Steep	
Function Present	Yes	No		
Degree of Function	High	Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		No	
Wetland microrelief	Well developed		Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large	Small		
Amount of impervious surface in wetland watershed	Large	Small		
Wetland Slope	Gentle	Moderate	Steep	
Wetland characterized by variable water level?	Yes		No	
Wetland in floodplain of adjacent watercourse	Yes		No	Ditch at SE end.
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No	
Watershed has a history of economic loss due to flooding	Yes		No	Unknown
Wetland outlet restricted	Yes		No	
Wetland vegetation density	High		Low	
Wetland microrelief	Well developed		None/Poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	<input checked="" type="radio"/> Forest, Shrub, Meadow	<input type="radio"/> Lawn	<del>White Pine Plantation</del>
Shallow littoral zone with emergent vegetation present?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Waterbody at least 10' deep	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
% of pond covered by submerged or emergent vegetation	<input type="radio"/> 15-40%	<input type="radio"/> Other	
Direct stormwater discharge via culvert?	<input type="radio"/> No	<input type="radio"/> Yes	
Sandbar present at inlet?	<input type="radio"/> No	<input type="radio"/> Yes	
Water transparency	<input type="radio"/> High	<input type="radio"/> Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	<input type="radio"/> No	<input type="radio"/> Yes	
Pond size $\geq 0.5$ acre	<input type="radio"/> Yes	<input type="radio"/> No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	<input type="radio"/> No	<input type="radio"/> Yes	
Function Present	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<input type="radio"/> Yes	<input type="radio"/> No	
Gravel spawning areas present	<input type="radio"/> Yes	<input type="radio"/> No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	<input type="radio"/> No	<input type="radio"/> Yes	
Dominant bottom substrate	<input type="radio"/> Gravel/cobbles	<input type="radio"/> Sand/silt	
Substrate embeddedness by sand & silt	<input type="radio"/> Low	<input type="radio"/> High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	<input type="radio"/> High	<input type="radio"/> Low	
Channel alterations (channelization, islands or point bars)	<input type="radio"/> Absent or Few	<input type="radio"/> Numerous	
Bank stability	<input type="radio"/> Stable	<input type="radio"/> Unstable, eroding	
Bank vegetative cover	<input type="radio"/> High (trees, shrubs)	<input type="radio"/> Low	
Cover objects (fallen logs, boulders, undercut banks)	<input type="radio"/> Many	<input type="radio"/> Absent/few	
Riparian zone	<input type="radio"/> Wide	<input type="radio"/> Narrow	
Watershed development	<input type="radio"/> Low	<input type="radio"/> High	
Water quality	<input type="radio"/> Good	<input type="radio"/> Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	SE end drains east
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	White Pine Plantation
Wetland fragmentation by development	Little or None	Moderate to High	White Pine Plantation/Housing
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			T, S, SH, H, LL
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**U/H/UNIQUENESS/HERITAGE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**VQA/VISUAL QUALITY/AESTHETICS**

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**ESH/ENDANGERED SPECIES HABITAT**

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Mod	No	Mod	Mod	Low	NO	Low	NO	No	No	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 14 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous	Evergreen	Mixed Forest			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators:

Inundated

Saturated in upper 12"

Water marks

Drift lines

Sediment deposits

Drainage patterns within wetlands

Other

Plant Adaptations to Hydrology: stems, or roots

Pneumatophores  
Adventitious roots

Polymorphic leaves  
Rhizospheric oxidation

Buttressed trees  
Shallow root systems

Hypertrophied lenticels  
Floating leaves

Stooling  
Floating stems

Inflated leaves,

Soil Drainage classes: Well

Moderately Well

Somewhat Poorly

Poorly

Very Poorly

Mapped Hydric Soil

Slope:

Nearly level

Gentle

Moderate

Steep

Upland Border:

Slope:

Nearly level

Gentle

Moderate

Steep

Cover Types:

Mature forest

Sapling forest

Shrub thicket

Meadow

Mowed lawn

Farm

Vegetation Density(S/M/D):

Trees

D

Saplings

Shrubs

Herbs

Grass

Soil: 12A - Haplagnents - Naumburg Complex Sandy

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		No		
Slope	Gentle		Moderate or Steep		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	Gentle		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		No		Unknown
Wetland vegetation density	High		Low		
Wetland microrelief	Well developed		None/Poorly developed		



Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream) *Seasonal drainage*

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No (Low)	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low
<i>Drainage ditches in PFO-drain into stormwater system</i>			

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		No	
Fishing is available in or from the wetland	Yes		No	
Hunting is permitted in wetland	Yes		No	
Hiking occurs or has potential to occur in wetland	Yes		No	
Wetland is a valuable wildlife habitat	Yes		No	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, herb, Leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	logs
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	Yes		(No)	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest, mowed fields
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		(No)	Drainage ditch
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	Yes		(No)	Near airfield + road
Visual landuse contrast with wetland	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	mod	No	No	No	No	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 15 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated		Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs Grass

white pine

Soil: DeA - Deerfield loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		No		
Slope	Gentle		Moderate or Steep		
Function Present	Yes No				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	Gentle		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	Yes		No		
Wetland vegetation density	High		Low		
Wetland microrelief	Well developed		None/Poorly developed		

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	<del></del>
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	<del></del>
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	sw end ditched
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Birds / Insects
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

S&SS/SEDIMENT/SHORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	Slopes SW
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes	<input checked="" type="radio"/> No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+			Comments
Wetland degradation by human activity	Little or None	Moderate to High		White pine plantation, ditching
Wetland fragmentation by development	Little or None	Moderate to High		Baseball field & Fuel field/Roadway
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No		White pine
Buffer width	Good to Excellent	Fair to Poor		
Connectivity with other wetlands	Yes	No		
Size of landscape block in which wetland is located	Large	Small		
Wildlife food sources in wetland	Abundant	Few		
Interspersion of vegetation and open water	High	Low		
Upland islands	Present	Absent		
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low		
Vegetation density	High	Low		
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)				T, S, SH, H, LL
Wetland plant species diversity	High Mod Low			
Vernal pool	Yes	No		
Edge diversity (List types)				T, S, SH
Water regime	Wetter	Drier		
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few		
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few		
Flat rocks in/near watercourse (stream salamanders)	Present	Absent		
Sphagnum hummocks next to shallow pools	Present	Absent		
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent		
Abundance of invasive exotic flora	None or Low	High		
Function Present	Yes	No		
Degree of Function	High	Mod	Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S= Sapling/shrub thicket A=Agriculture)	High		Low	
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes		No
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/mod	mod	No	mod	mod	mod	No	mod	No	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet id#: FA 16      Date: N/A Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed			Grazed		
PSS/ Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally-saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present:      Yes      No

If Present: Slope or Depressional

Surface water depth:      average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators:      Inundated      Saturated in upper 12"      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves,  
 stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: Well      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      Nearly level      Gentle      Moderate      Steep

**Upland Border:**

Slope:      Nearly level      Gentle      Moderate      Steep

Cover Types:      Mature forest      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density (STM/D):      Trees      Saplings      Shrubs      Herbs      Grass

White Pine Plantation

Soil: DeA - Deerfield loamy sand -



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+			-	Comments
Soils	Sand/gravel outwash			<u>Hardpan, tight fine-grained soils, shallow ledge</u>	
Wetland associated w/ perennial or seasonal watercourse	Yes			<u>No</u>	
Slope	<u>Gentle</u>			Moderate or Steep	
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+			-	Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes			<u>No</u>	
Wetland microrelief	<u>Well developed</u>			Non/Poorly developed	
Wetland contains an outlet, no inlet	<u>Yes</u>			No	
Function Present	<u>Yes</u>			No	
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large	<u>Small</u>			
Amount of impervious surface in wetland watershed	<u>Large</u>	Small			
Wetland Slope	<u>Gentle</u>	Moderate	Steep		
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	Yes	<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		Comments
Wetland degradation by human activity	Little or None	Moderate to High	Roadways + Pine Plantation
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	White Pine Plantation
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)	SH, H		
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (E=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest - white pine
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes		No
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/mod	Mod	No	Mod	Mod	Low	No	Low	No	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo 204-SW

Zone 1 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS

Wet Id#: FA 17

Date: N/A Functional Unit:

Weather: Sunny N/A Time Start: N/A Time Stop: N/A

Site investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD

Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass	
POW/ Open water	Vegetated	Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody	Shrub Sub-shrub Robust Narrow-leaved Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved Broad-leaved Floating leaved
PFL / Seasonally Flooded Flats	Emergent	Shrub
PEM / Wet Meadow	Ungrazed	Grazed
PSS / Shrub Swamp	Sapling	Bushy Compact Aquatic
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>	<b>Evergreen</b>
Bog	Compact shrub	Bushy shrub Wooded Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

**Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years**

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits **Drainage patterns within wetlands** Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well **Moderately Well** Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level **Gentle** Moderate Steep

Upland Border:

Slope: Nearly level Gentle **Moderate** Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **3 trees** D **Saplings** S **Shrubs** S Herbs Grass

Soil: 10A - Udorthents - croghan complex

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	<u>Sand/gravel outwash</u>	Hardpan, light fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes	<u>No</u>	
Slope	<u>Gentle</u>	Moderate or Steep	
Function Present	<u>Yes</u> No		
Degree of Function	High <u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	<u>No</u>	
Wetland microrelief	<u>Well developed</u>	Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes	<u>No</u>	<u>No inlet or outlet</u>
Function Present	<u>Yes</u> No	No	
Degree of Function	High Mod <u>Low</u>		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Amount of impervious surface in wetland watershed	<u>Large</u>	Small	
Wetland Slope	<u>Gentle</u>	Moderate Steep	
Wetland characterized by variable water level?	<u>Yes</u>	No	
Wetland in floodplain of adjacent watercourse	Yes	<u>No</u>	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>	No	
Watershed has a history of economic loss due to flooding	Yes	No	<u>Unknown</u>
Wetland outlet restricted	Yes	<u>No</u>	
Wetland vegetation density	High	<u>Low</u>	
Wetland microrelief	<u>Well developed</u>	None/Poorly developed	



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Runoff from roads
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input checked="" type="radio"/> Mod	<input type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		<input type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		<input type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Flowering plants used by nectar gatherers present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input checked="" type="radio"/> Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		<input type="radio"/> Yes	
Open water fetch present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Boating activity present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Indications of erosion or siltation present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input checked="" type="radio"/> Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input type="radio"/> Yes		<input checked="" type="radio"/> No	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	Fragmented by roadways & ball field
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	FA 15 + FA 16
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)	T, S, SH, H, LL		
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Snags, Logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Low	Low	No	Mod	Mod	Low	No	Low	No	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 10 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes **No**

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes **No**

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits **Drainage patterns within wetlands** Other

Plant Adaptations to Hydrology: *Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems*

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees **W?** Saplings Shrubs Herbs Grass

Soil: 30A - Underflints - Adams complex

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	<u>Sand/gravel outwash</u>		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		No		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	Yes		<input checked="" type="radio"/> No	
Flowering plants used by nectar gatherers present	Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Mountain College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**U/H/UNIQUENESS/HERITAGE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**VQA/VISUAL QUALITY/AESTHETICS**

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**ESH/ENDANGERED SPECIES HABITAT**

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/>	No
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	NO	NO	NO	NO	NO	NO	low	NO	NO	NO	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: **FA 19**      Date: N/A      Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent			Shrub		
PEM / Wet Meadow	Ungrazed			Grazed		
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally-saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present: Yes  **No**

If Present: Slope or Depressional

Surface water depth: average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes  No

Hydrology indicators: Inundated      Saturated in upper 12"      Water marks      Drift lines      Sediment deposits      **Drainage patterns within wetlands**      Other

Plant Adaptations to Hydrology: Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves, stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: **Well**      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope: **Nearly level**      Gentle      Moderate      Steep

**Upland Border:**

Slope: **Nearly level**      Gentle      Moderate      Steep

Cover Types: **Mature forest**      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density(S/M/D): **Trees**      **M**      **Saplings**      **S**      Shrubs      Herbs      Grass

Soil: 30A - Udorthents - Adams Complex



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	<u>Sand/gravel outwash</u>		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<u>unknown</u>
Wetland outlet restricted	Yes		No		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	Yes		<input checked="" type="radio"/> No	
Flowering plants used by nectar gatherers present	Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<del>Moderate to High</del>	
Wetland fragmentation by development	Little or None	<del>Moderate to High</del>	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	<del>No</del>	
Buffer width	Good to Excellent	<del>Fair to Poor</del>	
Connectivity with other wetlands	Yes	<del>No</del>	
Size of landscape block in which wetland is located	Large	<del>Small</del>	
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Wooded swamps
Vegetation density	High	<del>Low</del>	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, leaf litter
Wetland plant species diversity	High Mod <del>Low</del>		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			
Water regime	Wetter	<del>Drier</del>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<del>Abundant</del>	Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	<del>Abundant</del>	Few	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del>

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin college
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes			(No)
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	No	No	No	No	No	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo 207-5

Zone 1

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

4120

Project Name: Brunswick NAS

Wet Id#: FA 20

Date: N/A Functional Unit:

Weather: N/A

Time Start: N/A

Time Stop: N/A

Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A

Below average

Average

Above Average

Don't Know

TBD

Wildlife Investigation Method: Cover search

Dip netting

Auditory

Scat

Tracks

Minnow Traps

Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass	
POW/ Open water	Vegetated	Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody	Shrub Sub-shrub Robust Narrow-leaved Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved Broad-leaved Floating leaved
PFL / Seasonally Flooded Flats	Emergent	Shrub
PEM / Wet Meadow	Ungrazed	Grazed
PSS / Shrub Swamp	Sapling	Bushy Compact Aquatic
<u>PFO / Wooded Swamp</u>	Deciduous	<u>Evergreen</u>
Bog	Compact shrub	Bushy shrub Wooded Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes  No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes  No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs Grass

Soil: 25A - Adams loamy fine sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	<u>Sand/gravel outwash</u>		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	<u>Yes</u>		No		<i>known</i>
Wetland vegetation density	High		<u>Low</u>		<i>Stream culverted in several places</i>
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	Culverted in several places
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	Unknown

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High	Low		
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No		
Wetland has high degree of plant community structure and species diversity	Yes	<input checked="" type="radio"/> No		
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No		
Flowering plants used by nectar gatherers present	Yes	<input checked="" type="radio"/> No		
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No		
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No		
Function Present	<input checked="" type="radio"/> Yes	No		
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No		
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No		
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No		
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes		
Open water fetch present	Yes	<input checked="" type="radio"/> No		
Boating activity present	Yes	<input checked="" type="radio"/> No		
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No		
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No		
Function Present	<input checked="" type="radio"/> Yes	No		
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No		
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No		
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No		
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No		
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No		



Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input type="radio"/> No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		-	Comments
Wetland degradation by human activity	Little or None		Moderate to High	
Wetland fragmentation by development	Little or None		Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes		No	
Buffer width	Good to Excellent		Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes		No	
Size of landscape block in which wetland is located	Large		Small	
Wildlife food sources in wetland	Abundant		Few	
Interspersion of vegetation and open water	High		Low	
Upland islands	Present		Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High		Low	Wooded swamp
Vegetation density	<input checked="" type="radio"/> High		Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)				Tree, sapling, leaf litter
Wetland plant species diversity	High	Mod	<input checked="" type="radio"/> Low	
Vernal pool	Yes		No	
Edge diversity (List types)				
Water regime	Wetter		Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input checked="" type="radio"/> Abundant		Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input checked="" type="radio"/> Abundant		Few	logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present		Absent	
Sphagnum hummocks next to shallow pools	Present		Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present		Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low		High	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			(No)
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/NO	LOW	LOW	LOW	LOW	LOW	NO	LOW	NO	NO	LOW	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA21 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent			

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees m Saplings Shrubs Herbs Grass

Soil: DeA - Deerfield loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	Sand/gravel outwash	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes	No	
Slope	Gentle	Moderate or Steep	
Function Present	Yes No		
Degree of Function	High Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	No	
Wetland microrelief	Well developed	Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes	No	
Function Present	Yes	No	
Degree of Function	High Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Amount of impervious surface in wetland watershed	Large	Small	
Wetland Slope	Gentle	Moderate Steep	
Wetland characterized by variable water level?	Yes	No	
Wetland in floodplain of adjacent watercourse	Yes	No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	No	
Watershed has a history of economic loss due to flooding	Yes	No	Unknown
Wetland outlet restricted	Yes	No	culverted under dirt road
Wetland vegetation density	High	Low	
Wetland microrelief	Well developed	None/Poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	<input checked="" type="radio"/> Forest, Shrub, Meadow	<input type="radio"/> Lawn	
Shallow littoral zone with emergent vegetation present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Waterbody at least 10' deep	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
% of pond covered by submerged or emergent vegetation	15-40%	<input checked="" type="radio"/> Other	< 15%
Direct stormwater discharge via culvert?	<input type="radio"/> No	<input checked="" type="radio"/> Yes	
Sandbar present at inlet?	<input checked="" type="radio"/> No	<input type="radio"/> Yes	
Water transparency	High	<input checked="" type="radio"/> Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	<input type="radio"/> No	<input type="radio"/> Yes	
Pond size ≥ 0.5 acre	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	<input type="radio"/> No	<input checked="" type="radio"/> Yes	
Function Present	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<input type="radio"/> Yes	<input type="radio"/> No	
Gravel spawning areas present	<input type="radio"/> Yes	<input type="radio"/> No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	<input type="radio"/> No	<input type="radio"/> Yes	
Dominant bottom substrate	<input type="radio"/> Gravel/cobbles	<input type="radio"/> Sand/silt	
Substrate embeddedness by sand & silt	<input type="radio"/> Low	<input type="radio"/> High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	<input type="radio"/> High	<input type="radio"/> Low	
Channel alterations (channelization, islands or point bars)	<input type="radio"/> Absent or Few	<input type="radio"/> Numerous	
Bank stability	<input type="radio"/> Stable	<input type="radio"/> Unstable, eroding	
Bank vegetative cover	<input type="radio"/> High (trees, shrubs)	<input type="radio"/> Low	
Cover objects (fallen logs, boulders, undercut banks)	<input type="radio"/> Many	<input type="radio"/> Absent/few	
Riparian zone	<input type="radio"/> Wide	<input type="radio"/> Narrow	
Watershed development	<input type="radio"/> Low	<input type="radio"/> High	
Water quality	<input type="radio"/> Good	<input type="radio"/> Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No (Low)	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	Booms in place to contain input of unknown substance
Degree of Function	High	Mod	

#### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	<input checked="" type="radio"/> Yes		No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<input type="radio"/> Moderate to High	
Wetland fragmentation by development	Little or None	<input type="radio"/> Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	Good to Excellent	<input type="radio"/> Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	Large	<input type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> Few	
Interspersion of vegetation and open water	High	<input type="radio"/> Low	
Upland islands	Present	<input type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="radio"/> Low	Wooded swamp, open water
Vegetation density	High	<input type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, leaf litter, herb
Wetland plant species diversity	High Mod <input type="radio"/> Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			
Water regime	<input checked="" type="radio"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input type="radio"/> Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Near air field/roadways
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Low	Mod	Low	Mod	Low	Low	No	Low	No	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



Photo 209 S

Zone 2

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS

Wet Id#: FA22

Date: N/A Functional Unit: #120

Weather: N/A

Time Start: N/A

Time Stop: N/A

Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A

Below average

Average

Above Average

Don't Know

TBD

Wildlife Investigation Method: Cover search

Dip netting

Auditory

Scat

Tracks

Minnow Traps

Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent	Shrub				
PEM / Wet Meadow	Ungrazed	Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded		Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes  No

Depth to free water:

If Present: Slope or Depressional

Depth to saturation:

Surface water depth: average - maximum -

Signs of altered hydrology? Yes  No

Hydrology indicators: Inundated  Saturated in upper 12"  Water marks  Drift lines  Sediment deposits  Drainage patterns within wetlands  Other

Plant Adaptations to Hydrology: Pneumatophores  Polymorphic leaves  Buttressed trees  Hypertrophied lenticels  Stooling  Inflated leaves, stems, or roots  Adventitious roots  Rhizospheric oxidation  Shallow root systems  Floating leaves  Floating stems

Soil Drainage classes: Well  Moderately Well  Somewhat Poorly  Poorly  Very Poorly  Mapped Hydric Soil

Slope: Nearly level  Gentle  Moderate  Steep

Upland Border:

Slope: Nearly level  Gentle  Moderate  Steep

Cover Types: Mature forest  Sapling forest  Shrub thicket  Meadow  Mowed lawn  Farm

Vegetation Density(S/M/D): Trees  Saplings  Shrubs  Herbs  Grass

Soil: DeA - Deerfield loamy sand

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		No	
Slope	Gentle		Moderate or Steep	
Function Present	Yes	No		
Degree of Function	High	Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		No	
Wetland microrelief	Well developed		Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes		No	Converted under road from ponded area FA 21
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Amount of impervious surface in wetland watershed	Large		Small	
Wetland Slope	Gentle		Moderate      Steep	
Wetland characterized by variable water level?	Yes		No	
Wetland in floodplain of adjacent watercourse	Yes		No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No	
Watershed has a history of economic loss due to flooding	Yes		No	Unknown
Wetland outlet restricted	Yes		No	
Wetland vegetation density	High		Low	
Wetland microrelief	Well developed		None/Poorly developed	

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	<u>Forest, Shrub, Meadow</u>	Lawn	<u>+ Development</u>
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	<u>No</u>	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<u>Yes</u>	
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<u>Low</u>	
Channel alterations (channelization, islands or point bars)	Absent or Few	<u>Numerous</u>	
Bank stability	<u>Stable</u>	Unstable, eroding	
Bank vegetative cover	<u>High (trees, shrubs)</u>	Low	
Cover objects (fallen logs, boulders, undercut banks)	<u>Many</u>	Absent/few	<u>logs</u>
Riparian zone	<u>Wide</u>	Narrow	
Watershed development	Low	<u>High</u>	
Water quality	Good	<u>Poor</u>	<u>Cloudy - Ponded area had a spill</u>

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	Yes	<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	Yes	<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes	No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes	No	<i>Silty water in stream</i>
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes	No	<i>Picnic Area</i>
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	Stream system
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			H, LL
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	S, L
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	L
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**U/H/UNIQUENESS/HERITAGE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**VQA/VISUAL QUALITY/AESTHETICS**

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**ESH/ENDANGERED SPECIES HABITAT**

Criteria	+	-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes	No	
Wetland contains critical habitat for state or federal listed species	Yes	No	
Area appears in state or national database	Yes	No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/low	Low	Low	mod	Low	Low	Mod	mod	No	No	mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: **FA 23**      Date: N/A      Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present:      Yes      No

If Present: Slope or Depressional

Surface water depth:      average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators:      Inundated      Saturated in upper 12"      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves,  
 stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: Well      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      Nearly level      Gentle      Moderate      Steep

**Upland Border:**

Slope:      Nearly level      Gentle      Moderate      Steep

Cover Types:      Mature forest      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density(S/M/D):      Trees D      Saplings      Shrubs      Herbs      Grass

Soil: BqC2 - Be grade very fine sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	<u>Sand/gravel outwash</u>	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>	No	
Slope	<u>Gentle</u>	Moderate or Steep	
Function Present	<u>Yes</u> No		
Degree of Function	High <u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	<u>No</u>	
Wetland microrelief	Well developed	<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes	<u>No</u>	
Function Present	Yes	<u>No</u>	
Degree of Function	High <u>Mod</u>	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	<u>Large</u>	Small	
Amount of impervious surface in wetland watershed	<u>Large</u>	<u>Small</u>	
Wetland Slope	<u>Gentle</u>	Moderate Steep	
Wetland characterized by variable water level?	Yes	<u>No</u>	
Wetland in floodplain of adjacent watercourse	Yes	No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	<u>No</u>	
Watershed has a history of economic loss due to flooding	Yes	No	
Wetland outlet restricted	<u>Yes</u>	No	Unknown Outflow into adj. stream
Wetland vegetation density	High	<u>Low</u>	
Wetland microrelief	Well developed	<u>None/Poorly developed</u>	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	<input checked="" type="radio"/> Fores, Shrub, Meadow	<input type="radio"/> Lawn	
Shallow littoral zone with emergent vegetation present?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Waterbody at least 10' deep	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
% of pond covered by submerged or emergent vegetation	15-40%	<input checked="" type="radio"/> Other	<15%
Direct stormwater discharge via culvert?	<input type="radio"/> No	<input checked="" type="radio"/> Yes	
Sandbar present at inlet?	<input checked="" type="radio"/> No	<input type="radio"/> Yes	
Water transparency	High	<input checked="" type="radio"/> Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	<input checked="" type="radio"/> No	<input type="radio"/> Yes	
Pond size ≥0.5 acre	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	<input checked="" type="radio"/> No	<input type="radio"/> Yes	
Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Fish present, but degraded habitat
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	Yes		<input checked="" type="radio"/> No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	<i>Some fish in pond</i>
Fish or shellfish develop/occur in wetland	<input checked="" type="radio"/> Yes		No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	<input checked="" type="radio"/> Yes		No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes		No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	

Wetland has high visual/aesthetic quality	Yes	<u>No</u>	
Boating or canoeing feasible in wetland	Yes	<u>No</u>	
Off-road public parking near wetland available	<u>Yes</u>	No	
Safety Hazards (if present list them)	<u>Yes</u>	No	Signs posted w/ no fishing + swimming
Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

#### WLH/WILDLIFE HABITAT

Criteria	+		Comments
Wetland degradation by human activity	Little or None	<u>Moderate to High</u>	
Wetland fragmentation by development	<u>Little or None</u>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<u>Yes</u>	No	Forest
Buffer width	Good to Excellent	<u>Fair to Poor</u>	
Connectivity with other wetlands	<u>Yes</u>	No	
Size of landscape block in which wetland is located	<u>Large</u>	Small	
Wildlife food sources in wetland	Abundant	<u>Few</u>	
Interspersion of vegetation and open water	High	<u>Low</u>	
Upland islands	Present	<u>Absent</u>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	ow
Vegetation density	High	<u>Low</u>	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			
Wetland plant species diversity	High Mod <u>Low</u>		
Vernal pool	Yes	<u>No</u>	
Edge diversity (List types)			Forest
Water regime	<u>Wetter</u>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<u>Few</u>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<u>Few</u>	
Flat rocks in/near watercourse (stream salamanders)	Present	<u>Absent</u>	
Sphagnum hummocks next to shallow pools	Present	<u>Absent</u>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<u>Absent</u>	
Abundance of invasive exotic flora	<u>None or Low</u>	High	
Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	(No)	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	Mod	Mod	Mod	Low	Low	Mod	Low	Low	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

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**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS - Wet Id#: FA 24 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<u>PSS / Shrub Swamp</u>	Sapling	<u>Bushy</u>	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded		Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings S Shrubs Herbs Grass

Soil: BgC2 - Bergrade fine sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	<u>Sand/gravel outwash</u>	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>	No	
Slope	<u>Gentle</u>	Moderate or Steep	
Function Present	<u>Yes</u> No		
Degree of Function	High <u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	<u>No</u>	
Wetland microrelief	Well developed	<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes	No	
Function Present	Yes	No	
Degree of Function	High Mod <u>Low</u>		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Amount of impervious surface in wetland watershed	Large	<u>Small</u>	
Wetland Slope	<u>Gentle</u>	Moderate Steep	
Wetland characterized by variable water level?	<u>Yes</u>	No	
Wetland in floodplain of adjacent watercourse	<u>Yes</u>	No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	<u>No</u>	
Watershed has a history of economic loss due to flooding	Yes	No	<u>Unknown</u>
Wetland outlet restricted	Yes	<u>No</u>	
Wetland vegetation density	<u>High</u>	Low	
Wetland microrelief	Well developed	<u>None/Poorly developed</u>	

Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size ≥ 0.5 acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	<u>Yes</u>		No	
Gravel spawning areas present	Yes		<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		<u>Yes</u>	<i>Culverted from FA 23 + into FA 47</i>
Dominant bottom substrate	Gravel/cobbles		<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low		<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	<i>Moderate</i>
Channel alterations (channelization, islands or point bars)	Absent or Few		<u>Numerous</u>	<i>Culvert, riprap.</i>
Bank stability	<u>Stable</u>		Unstable, eroding	
Bank vegetative cover	<u>High (trees shrubs)</u>		Low	<i>shrubs</i>
Cover objects (fallen logs, boulders, undercut banks)	Many		<u>Absent/few</u>	
Riparian zone	Wide		<u>Narrow</u>	
Watershed development	Low		<u>High</u>	
Water quality	Good		Poor	<i>Unknown</i>

Polletion tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	<i>Unknown</i>
Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	<u>Yes</u>	No	
Duration of water retention in wetland	Long	<u>Short</u>	
Evidence of sediment trapping in wetland	Yes	<u>Low</u>	
Vegetation density	<u>High</u>	No	
Wetland edge broad and intermittently aerobic	<u>Yes</u>	Low	
Drainage ditches in wetland	<u>No</u>	Yes	
Water flow through wetland	<u>Diffuse</u>	Channelized	
Ponded water present	Yes	<u>No</u>	
Wetland basin topographic gradient	<u>Low</u>	High	
Fine grained mineral or organic soils present	<u>Yes</u>	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	<u>No</u>	
Indicators of erosion or high water velocities are present	<u>No</u>	Yes	
Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Potential sources of excess nutrients upstream	<u>Yes</u>	No	
Wetland is saturated most of the season	Yes	<u>No</u>	
Emergent vegetation and/or dense woody stems are dominant	<u>Yes</u>	No	
Water flow through wetland	<u>Diffuse</u>	Channelized	
Vegetation density	<u>High</u>	Low	
Potential for sediment trapping exists	<u>Yes</u>	No	
Deep or open water habitat is present	Yes	<u>No</u>	
Soil type	Organic/high clay content	<u>Sand/gravel</u>	
Wetland basin topographic gradient	<u>Low</u>	High	
Wetland microrelief	Well developed	<u>None, poorly developed</u>	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	Yes	<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes	No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	<del>Yes</del>	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del>

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<del>Moderate to High</del>	
Wetland fragmentation by development	Little or None	<del>Moderate to High</del>	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest
Buffer width	Good to Excellent	<del>Fair to Poor</del>	
Connectivity with other wetlands	<del>Yes</del>	No	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	<del>Abundant</del>	Few	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Shrub Swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			shrub, herb,
Wetland plant species diversity	High Mod <del>Low</del>		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Forest
Water regime	Wetter	<del>Drier</del>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<del>Few</del>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del>

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Low	Mod	Low	Low	Low	Low	Low	Low	Low	No	Low	No

**SUMMARY OF FUNCTIONS**

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: **FA 25**      Date: N/A Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

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PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	Deciduous		<b>Evergreen</b>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

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 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present:      Yes      No      Depth to free water:  
 If Present: Slope or Depressional      Depth to saturation:  
 Surface water depth:      average -      maximum -      Signs of altered hydrology?      **Yes**      No

Hydrology indicators:      Inundated      Saturated in upper 12"      **Water marks**      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves,  
 stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: Well      **Moderately Well**      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      Nearly level      Gentle      **Moderate**      Steep

**Upland Border:**

Slope:      Nearly level      Gentle      **Moderate**      Steep  
 Cover Types:      **Mature forest**      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm  
 Vegetation Density(S/M/D):      **Trees**      **D**      Saplings      Shrubs      Herbs      Grass

**Soil: BuB - Buxton silt loam**

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	<u>Sand/gravel outwash</u>		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	Gentle		<u>Moderate or Steep</u>		
Function Present	<u>Yes</u>	No			
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	Gentle		<u>Moderate</u>	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	<del></del>
Shallow littoral-zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size $\geq 0.5$ acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	<del></del>
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Unknown
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	Unknown
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	unknown
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	No	
Fishing is available in or from the wetland	Yes	No	
Hunting is permitted in wetland	Yes	No	
Hiking occurs or has potential to occur in wetland	Yes	No	
Wetland is a valuable wildlife habitat	Yes	No	

Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

#### WLH/WILDLIFE HABITAT

Criteria	+		-	Comments
Wetland degradation by human activity	Little or None		<input checked="" type="radio"/> Moderate to High	Culverts
Wetland fragmentation by development	Little or None		<input checked="" type="radio"/> Moderate to High	Culverts
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes		No	Forest
Buffer width	<input checked="" type="radio"/> Good to Excellent		Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes		No	
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large		Small	
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	High		<input checked="" type="radio"/> Low	
Upland islands	Present		<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High		<input checked="" type="radio"/> Low	PFO
Vegetation density	High		<input checked="" type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)				Tree, leaf litter
Wetland plant species diversity	High	Mod <input checked="" type="radio"/> Low		
Vernal pool	Yes		<input checked="" type="radio"/> No	
Edge diversity (List types)				Forest
Water regime	Wetter		<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input checked="" type="radio"/> Abundant		Few	Logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input checked="" type="radio"/> Abundant		Few	Logs
Flat rocks in/near watercourse (stream salamanders)	Present		<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present		<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present		<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low		High	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
<u>low/NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>Low</u>	<u>Low</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 26** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<b>PSS / Shrub Swamp</b>	Sapling	Bushy	<b>Compact</b>	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub		Bushy shrub		Wooded	Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

**Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years**

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: Nearly level **Gentle** Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** **Saplings** S Shrubs Herbs Grass

Soil: WMC - Windsor sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	<u>Sand/gravel outwash</u>	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>	No	
Slope	<u>Gentle</u>	Moderate or Steep	
Function Present	<u>Yes</u> No		
Degree of Function	High <u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	<u>No</u>	
Wetland microrelief	<u>Well developed</u>	Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes	<u>No</u>	
Function Present	Yes	<u>No</u>	
Degree of Function	High Mod Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Amount of impervious surface in wetland watershed	Large	<u>Small</u>	
Wetland Slope	<u>Gentle</u>	Moderate Steep	
Wetland characterized by variable water level?	<u>Yes</u>	No	
Wetland in floodplain of adjacent watercourse	<u>Yes</u>	No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	<u>No</u>	
Watershed has a history of economic loss due to flooding	Yes	No	<u>Unknown</u>
Wetland outlet restricted	Yes	<u>No</u>	
Wetland vegetation density	<u>High</u>	Low	
Wetland microrelief	<u>Well developed</u>	None/Poorly developed	

Function Present	<u>Yes</u>	No	
Degree of Function	<u>High</u>	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<u>Yes</u>	No	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<u>Yes</u>	<i>Culverts upstream</i>
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<u>Low</u>	
Channel alterations (channelization, islands or point bars)	<u>Absent or Few</u>	Numerous	
Bank stability	<u>Stable</u>	Unstable, eroding	
Bank vegetative cover	<u>High (trees, shrubs)</u>	Low	<i>shrubs</i>
Cover objects (fallen logs, boulders, undercut banks)	<u>Many</u>	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	<u>High</u>	
Water quality	Good	Poor	<i>Unknown</i>

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	Unknown
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	unknown
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	<input type="radio"/> Mod	<input type="radio"/> Low

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes	No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Shrub swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Shrub, herb
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&S/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	Shrub swamps
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin college
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	High	mod	Mod	Mod	High	Low	High	No	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 27** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic	
<b>PFO / Wooded Swamp</b>	Deciduous	Evergreen	<b>Mixed</b>			
Bog	Compact shrub	Bushy shrub	<del>Wooded</del>		<del>Emergent</del>	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: **Yes** No  
 If Present: Slope or Depressional  
 Surface water depth: average - maximum -

Depth to free water:  
 Depth to saturation:  
 Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level **Gentle** Moderate Steep

Upland Border:

Slope: Nearly level **Gentle** Moderate Steep  
 Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm  
 Vegetation Density(S/M/D): **Trees** **D** **Saplings** **S** Shrubs Herbs Grass

**WmC - Windsor sandy loam**

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	Sand/gravel outwash	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>	No	
Slope	<u>Gentle</u>	Moderate or Steep	
Function Present	<u>Yes</u> No		
Degree of Function	High <u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	<u>Yes</u>	No	
Wetland microrelief	<u>Well developed</u>	Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes	<u>No</u>	
Function Present	<u>Yes</u>	No	
Degree of Function	High <u>Mod</u>	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Amount of impervious surface in wetland watershed	Large	<u>Small</u>	
Wetland Slope	<u>Gentle</u>	Moderate Steep	
Wetland characterized by variable water level?	<u>Yes</u>	No	
Wetland in floodplain of adjacent watercourse	<u>Yes</u>	No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	<u>No</u>	
Watershed has a history of economic loss due to flooding	Yes	No	<i>Unknown</i>
Wetland outlet restricted	Yes	<u>No</u>	
Wetland vegetation density	<u>High</u>	Low	
Wetland microrelief	<u>Well developed</u>	None/Poorly developed	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	Trees
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	Trees
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	Unknown

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	Unknown
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	W
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			T, H, LL
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Mod	Low	Low	Low	Mod	NO	Mod	NO	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNWV such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 28** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
<b>PFO / Wooded Swamp</b>	Deciduous		<b>Evergreen</b>				
Bog	Compact shrub	Bushy shrub	Wooded		Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

**Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years**

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes **NO**

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level **Gentle** Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** Saplings Shrubs Herbs Grass

WmB - Windsor loamy sand

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	Sand/gravel outwash	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes	No	
Slope	Gentle	Moderate or Steep	
Function Present	Yes No		
Degree of Function	High Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	No	
Wetland microrelief	Well developed	Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes	No	
Function Present	Yes	No	
Degree of Function	High Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Amount of impervious surface in wetland watershed	Large	Small	
Wetland Slope	Gentle	Moderate Steep	
Wetland characterized by variable water level?	Yes	No	
Wetland in floodplain of adjacent watercourse	Yes	No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	No	
Watershed has a history of economic loss due to flooding	Yes	No	Unknown
Wetland outlet restricted	Yes	No	
Wetland vegetation density	High	Low	
Wetland microrelief	Well developed	None/Poorly developed	

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size $\geq 0.5$ acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream) *Seasonal stream - photo 288*

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<input type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input type="radio"/> Yes	No	Forest
Buffer width	<input type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input type="radio"/> Yes	No	
Size of landscape block in which wetland is located	<input type="radio"/> Large	Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> Few	
Interspersion of vegetation and open water	<input type="radio"/> High	Low	
Upland islands	<input type="radio"/> Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="radio"/> Low	Wooded swamp
Vegetation density	High	<input type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling
Wetland plant species diversity	High Mod <input type="radio"/> Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input type="radio"/> None or Low	High	
Function Present	<input type="radio"/> Yes	No	
Degree of Function	High	<input type="radio"/> Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	F
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	Low	No	Low	Low	Low	No	mod	No	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 29 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings NA Shrubs Herbs Grass

WmB - Windsor loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	Mod	<u>Low</u>	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	<u>Yes</u>		No	
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed	
Wetland contains an outlet, no inlet	<u>Yes</u>		No	
Function Present	<u>Yes</u>		No	
Degree of Function	High	<u>Mod</u>	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	





Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<input checked="" type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input checked="" type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large	Small	
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Wooded Swamp
Vegetation density	High	<input checked="" type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			T, S, LL
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Rowdoin college
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/mod	Low	No	No	No	No	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA30** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated		Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed			Grazed		
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	Deciduous		<b>Evergreen</b>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** Saplings Shrubs Herbs Grass

Soil: **WmB - Windsor loamy sand**

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		No inlet or outlet
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	Yes		No		No outlet
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	No inputs
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	No input	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Interspersion of vegetation and open water	<del>High</del>	Low	
Upland islands	<del>Present</del>	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Wooded Swamp
Vegetation density	High	<del>Low</del>	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, herb, Leaf litter
Wetland plant species diversity	High Mod <del>Low</del>		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Forest
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<del>Abundant</del>	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<del>Abundant</del>	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	Yes	No	
Degree of Function	High	<del>Mod</del>	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	Yes		(No)	Moderate
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	(Yes)		No	
Visual landuse contrast with wetland	(Yes)		No	
Function Present	Yes		No	
Degree of Function	High	(Mod)	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	mod	No	Low	Low	No	No	mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 31 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead	Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust		Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent			Shrub			
PEM / Wet Meadow	Ungrazed			Grazed			
PSS / Shrub Swamp	Sapling	Bushy		Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub	Bushy shrub		Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs Grass

Soil: WmB - Windsor loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		<i>No inlet or outlet</i>
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		No		<i>No outlet</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant
Function Present	Yes	No
Degree of Function	High	Mod
		Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	



Wetland has high visual/aesthetic quality	Yes	(No)	
Boating or canoeing feasible in wetland	Yes	(No)	
Off-road public parking near wetland available	Yes	(No)	
Safety Hazards (if present list them)	Yes	(No)	
Function Present	Yes	(No)	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, herb, Leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&S/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	Moderate
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sprling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			<input checked="" type="radio"/> No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Mod	No	Low	Low	No	No	Mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA32 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 42" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs Grass

WMB - Windsor loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		<i>Input from stormwater system - culverted from residential area</i>

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>Culverted under road</i>
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		



Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<u>Yes</u>	No	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<u>Yes</u>	
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<u>Low</u>	
Channel alterations (channelization, islands or point bars)	Absent or Few	<u>Numerous</u>	
Bank stability	<u>Stable</u>	Unstable, eroding	
Bank vegetative cover	<u>High (trees, shrubs)</u>	Low	<u>Trees</u>
Cover objects (fallen logs, boulders, undercut banks)	Many	<u>Absent/few</u>	
Riparian zone	Wide	<u>Narrow</u>	
Watershed development	Low	<u>High</u>	
Water quality	Good	Poor	<u>Unknown</u>

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod Low	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod Low	

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Mallards & spotted owl egg masses
Fish or shellfish develop/occur in wetland	Yes	No	Unknown
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

S&S/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	Directly adj. to development

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	<u>Yes</u>	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<u>Moderate to High</u>	
Wetland fragmentation by development	Little or None	<u>Moderate to High</u>	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<u>Yes</u>	No	Forest
Buffer width	Good to Excellent	<u>Fair to Poor</u>	
Connectivity with other wetlands	<u>Yes</u>	No	
Size of landscape block in which wetland is located	Large	<u>Small</u>	
Wildlife food sources in wetland	<u>Abundant</u>	Few	
Interspersion of vegetation and open water	<u>High</u>	Low	
Upland islands	Present	<u>Absent</u>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<u>Low</u>	PEM
Vegetation density	<u>High</u>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Herb
Wetland plant species diversity	<u>High</u> Mod Low		
Vernal pool	Yes	<u>No</u>	But spotted sal. egg masses present
Edge diversity (List types)			Forest
Water regime	<u>Wetter</u>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<u>Few</u>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<u>Few</u>	
Flat rocks in/near watercourse (stream salamanders)	Present	<u>Absent</u>	
Sphagnum hummocks next to shallow pools	Present	<u>Absent</u>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<u>Absent</u>	
Abundance of invasive exotic flora	<u>None or Low</u>	High	
Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	Yes		(No)	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	(Yes)		No	
Proximity to schools	(Near)		Far	School/daycare across street
Wetland contains perennial watercourse	(Yes)		No	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	(Yes)		No	
Views absent trash, debris, sign of degradation	Yes		(No)	
Low noise level	Yes		(No)	Adj. to road
Visual landuse contrast with wetland	(Yes)		No	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	



Function Present	Yes			<input checked="" type="radio"/> No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	UIH	S&S	ESH
mod/No	Mod	No	Mod	mod	mod	No	mod	No	No	mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 33** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" **Water marks** Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves **Buttressed trees** Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation **Shallow root systems** Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well **Somewhat Poorly** Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **trees** m **Saplings** m Shrubs Herbs Grass

Soil: Sd - Saugatuck loamy sand - hydric soil

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>No outlet</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	Low
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	<i>(This table is crossed out with a large diagonal line)</i>
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	<u>No</u>	<i>Salt/sand from treating road</i>
Potential sediment sources upstream or upslope	<u>Yes</u>	No	
Wetland border >10' adjacent to pond or water	Yes	<u>No</u>	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	<u>No</u>	
Boating activity present	Yes	<u>No</u>	
Floodplain stabilizing trees and shrubs present	<u>Yes</u>	No	
Indications of erosion or siltation present	Yes	<u>No</u>	
Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<u>No</u>	
Fishing is available in or from the wetland	Yes	<u>No</u>	
Hunting is permitted in wetland	Yes	<u>No</u>	
Hiking occurs or has potential to occur in wetland	Yes	<u>No</u>	
Wetland is a valuable wildlife habitat	Yes	<u>No</u>	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+		-	Comments
Wetland degradation by human activity	Little or None		Moderate to High	
Wetland fragmentation by development	Little or None		Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes		No	
Buffer width	Good to Excellent		Fair to Poor	Narrow forested strip one side
Connectivity with other wetlands	Yes		No	
Size of landscape block in which wetland is located	Large		Small	
Wildlife food sources in wetland	Abundant		Few	
Interspersion of vegetation and open water	High		Low	
Upland islands	Present		Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High		Low	Wooded swamp
Vegetation density	High		Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)				Tree, leaf litter
Wetland plant species diversity	High	Mod	Low	
Vernal pool	Yes		No	
Edge diversity (List types)				
Water regime	Wetter		Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant		Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant		Few	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present		Absent	
Sphagnum hummocks next to shallow pools	Present		Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present		Absent	
Abundance of invasive exotic flora	None or Low		High	
Function Present	Yes		No	Very small wetland - likely drains into stormwater system.
Degree of Function	High	Mod	Low	

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest + development
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
NO/NO	NO	NO	Low	NO	NO	NO	NO	NO	NO	NO	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 34 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed			Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
<u>PFO / Wooded Swamp</u>	Deciduous	Evergreen	<u>Mixed</u>				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent			

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs Herbs Grass

Soil: 12A - Haplaquents - Naumburg complex



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	Yes <u>No</u>			
Degree of Function	High	Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<u>No</u>	
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		<u>Small</u>	
Amount of impervious surface in wetland watershed	<u>Large</u>		Small	
Wetland Slope	<u>Gentle</u>		Moderate Steep	
Wetland characterized by variable water level?	Yes		No	
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No	
Watershed has a history of economic loss due to flooding	Yes		No	
Wetland outlet restricted	<u>Yes</u>		No	<u>Unknown</u>
Wetland vegetation density	High		<u>Low</u>	<u>No obs. outlet - likely drains into stormwater system</u>
Wetland microrelief	Well developed		<u>None/Poorly developed</u>	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant
Function Present	Yes	No
Degree of Function	High	Mod
		Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Runoff from roads
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	Sand/salt runoff from road
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No	Yes	No nearby water
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	<input type="radio"/> No	
Size of landscape block in which wetland is located	Large	<input type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> Few	
Interspersion of vegetation and open water	High	<input type="radio"/> Low	
Upland islands	Present	<input type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="radio"/> Low	wooded swamp
Vegetation density	High	<input type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, leaf litter
Wetland plant species diversity	High Mod <input type="radio"/> Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input type="radio"/> None or Low	High	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	Yes		(No)	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin college
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	(Yes)		No	Roadway
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	Yes		(No)	Near road
Visual landuse contrast with wetland	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes			No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/No	No	No	Low	No	No	No	No	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 35** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	Deciduous		<u>Evergreen</u>			
Bog	Compact shrub		Bushy shrub	Wooded	Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings S Shrubs Herbs Grass

Soil: Sd - Saugateuck loamy sand - hydric

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		No		
Slope	Gentle		Moderate or Steep		
Function Present	Yes No				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		No		
Function Present	Yes		No		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		Small		
Amount of impervious surface in wetland watershed	Large		Small		
Wetland Slope	Gentle		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	Yes		No		
Wetland vegetation density	High		Low		
Wetland microrelief	Well developed		None/Poorly developed		





Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	(No)	
Duration of water retention in wetland	Long	(Short)	
Evidence of sediment trapping in wetland	Yes	(Low)	
Vegetation density	High	(No)	
Wetland edge broad and intermittently aerobic	(Yes)	Low	
Drainage ditches in wetland	(No)	Yes	
Water flow through wetland	(Diffuse)	Channelized	
Ponded water present	Yes	(No)	
Wetland basin topographic gradient	(Low)	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	(No)	Yes	
Function Present	Yes	No	
Degree of Function	High	(Mod)	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	(Small)	
Potential sources of excess nutrients upstream	Yes	(No)	
Wetland is saturated most of the season	Yes	(No)	
Emergent vegetation and/or dense woody stems are dominant	Yes	(No)	
Water flow through wetland	(Diffuse)	Channelized	
Vegetation density	High	(Low)	
Potential for sediment trapping exists	(Yes)	No	
Deep or open water habitat is present	Yes	(No)	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	(Low)	High	
Wetland microrelief	Well developed	(None, poorly developed)	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Vegetation density	High	<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	Yes	<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	Yes	<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Common forest dwelling birds/squirrels
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	Yes	<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No	<input checked="" type="radio"/> Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	<input checked="" type="radio"/> Yes	No	
Safety Hazards (if present list them)	Yes	<input checked="" type="radio"/> No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<input checked="" type="radio"/> Moderate to High	
Wetland fragmentation by development	Little or None	<input checked="" type="radio"/> Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	Good to Excellent	<input checked="" type="radio"/> Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	Large	<input checked="" type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Wooded swamp
Vegetation density	High	<input checked="" type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, Sapling, herb, Leaf litter
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	Yes		(No)	
Wetland class diversity	High		(LOW)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	(Yes)		No	
Visual landuse contrast with wetland	(Yes)		No	
Function Present	(Yes)		No	
Degree of Function	High	(Mod)	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes			<u>No</u>
Degree of Function	High	Mod	Low	

CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/No	Mod	No	Mod	No	No	No	Low	No	No	No	No

SUMMARY OF FUNCTIONS

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 36** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
<b>PEM / Wet Meadow</b>	<b>Ungrazed</b>		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

**Semi-permanently flooded (F) - surface water persists throughout growing season in most years**

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow **Mowed lawn** Farm

Vegetation Density(S/M/D): **Trees** M Saplings Shrubs **Herbs** M **Grass** D

Soil: WMB - Windsor loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain) *Highly altered stormwater detention pond*

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	Mod	<u>Low</u>	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<u>No</u>	
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>culverted</i>
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream-reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	Unknown
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Spotted sal. egg masses obs.
Fish or shellfish develop/occur in wetland	Yes	No	Unknown
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes	<input checked="" type="radio"/> No	
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes	No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	Nearby school/playground
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	Culverted stormwater system
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Lawn
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	WM
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Herb.
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	unnatural
Edge diversity (List types)			Lawn, Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest, lawn
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin/School/playground
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**U/H/UNIQUENESS/HERITAGE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**VQA/VISUAL QUALITY/AESTHETICS**

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**ESH/ENDANGERED SPECIES HABITAT**

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	(No)	
Degree of Function	High	Mod	Low

CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	High	No	High	Mod	Low	Low	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 37** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
<u>PEM/ Wet Meadow</u>	<u>Ungrazed</u>		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs Herbs Grass

Soil: Sd - Saugatuck loamy sand - hydric

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		<u>Hardpan, tight fine-grained soils, shallow ledge</u>		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	<u>High</u>	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<u>Unknown</u>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts)-present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly-intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	Vernal pool
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	Slight
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes		<input checked="" type="radio"/> No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	WM
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Herb, leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input checked="" type="radio"/> No	
Wetland provides valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	Low
Wetland class diversity	High		<input checked="" type="radio"/> Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		<input checked="" type="radio"/> Low	Forest
Off-road parking near wetland available	Yes		<input checked="" type="radio"/> No	
Proximity to schools	<input checked="" type="radio"/> Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		<input checked="" type="radio"/> No	
Wetland contains pond/lake	Yes		<input checked="" type="radio"/> No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input checked="" type="radio"/> No	
Wetland identified as exemplary natural community	Yes		<input checked="" type="radio"/> No	
Wetland locally/regionally significant	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		<input checked="" type="radio"/> No	
Views absent trash, debris, sign of degradation	Yes		<input checked="" type="radio"/> No	
Low noise level	Yes		<input checked="" type="radio"/> No	
Visual landuse contrast with wetland	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		<input checked="" type="radio"/> No	
Wetland contains critical habitat for state or federal listed species	Yes		<input checked="" type="radio"/> No	
Area appears in state or national database	Yes		<input checked="" type="radio"/> No	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/High	High	NO	High	mod	mod	No	Low	No	NO	NO	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA40** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	Deciduous	Evergreen	<b>Mixed</b>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well **Moderately Well** Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **trees D** **Saplings M** **Shrubs M** Herbs Grass

Soil: **BuB** - Buxton silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE** (Excluding condition: Slope Wetland)

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION** (Excluding condition: Slope Wetland)

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>No outlet - isolated</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high-culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	<del>Mostly intolerant</del>		<del>Mostly tolerant</del>	
Function Present	<del>Yes</del>		<del>No</del>	
Degree of Function	<del>High</del>	<del>Mod</del>	<del>Low</del>	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		(No)	
Duration of water retention in wetland	(Long)		Short	
Evidence of sediment trapping in wetland	Yes		(Low)	
Vegetation density	High		(No)	
Wetland edge broad and intermittently aerobic	(Yes)		Low	
Drainage ditches in wetland	(No)		Yes	
Water flow through wetland	(Diffuse)		Channelized	
Ponded water present	Yes		(No)	
Wetland basin topographic gradient	(Low)		High	
Fine grained mineral or organic soils present	(Yes)		No	
Watercourse, if present, has visible velocity decreases in wetland	Yes		No	No watercourse
Indicators of erosion or high water velocities are present	(No)		Yes	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	No inputs

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		(Small)	
Potential sources of excess nutrients upstream	Yes		(No)	
Wetland is saturated most of the season	Yes		(No)	
Emergent vegetation and/or dense woody stems are dominant	(Yes)		No	
Water flow through wetland	(Diffuse)		Channelized	
Vegetation density	High		(Low)	
Potential for sediment trapping exists	Yes		(No)	
Deep or open water habitat is present	Yes		(No)	
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	(Low)		High	
Wetland microrelief	Well developed		(None, poorly developed)	





Wetland has high visual/aesthetic quality	<u>Yes</u>	No	
Boating or canoeing feasible in wetland	Yes	<u>No</u>	
Off-road public parking near wetland available	Yes	<u>No</u>	
Safety Hazards (if present list them)	Yes	<u>No</u>	
Function Present	<u>Yes</u>	No	Potential for recreation Large area undeveloped
Degree of Function	High	<u>Mod</u>	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<u>Little or None</u>	Moderate to High	
Wetland fragmentation by development	<u>Little or None</u>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<u>Yes</u>	No	Forest
Buffer width	<u>Good to Excellent</u>	Fair to Poor	
Connectivity with other wetlands	Yes	<u>No</u>	isolated
Size of landscape block in which wetland is located	<u>Large</u>	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	<u>Low</u>	No open water
Upland islands	Present	<u>Absent</u>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<u>Low</u>	Wooded swamp
Vegetation density	High	Low	moderate
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			T, S, SH, H, LL
Wetland plant species diversity	High Mod <u>Low</u>		
Vernal pool	Yes	<u>No</u>	
Edge diversity (List types)			Forest
Water regime	Wetter	<u>Drier</u>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<u>Abundant</u>	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<u>Abundant</u>	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<u>Absent</u>	
Sphagnum hummocks next to shallow pools	Present	<u>Absent</u>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<u>Absent</u>	
Abundance of invasive exotic flora	<u>None or Low</u>	High	
Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	Moderate
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin college
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
mod/no	NO	No	Low	Low	NO	Mod	Mod	Low	NO	NO	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA41 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEMPSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded		Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs Grass

Soil: BUB - Buxton silt loam



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>	<i>Isolated wetland</i>
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u> No			
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<u>No</u>	
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes		No	<i>Isolated wetland</i>
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		No		<i>No outlet</i>
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	<u>No</u>		<i>surface</i>
Degree of Function	High	Mod	Low	<i>No hydrologic connections</i>

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low
			No inputs

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	Some ponded water
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	No current access
Degree of Function	High	Mod	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	Isolated
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Shrub swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Shrub, Herb, Leaf Litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	SVP #36
Edge diversity (List types)			Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&S/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		<input checked="" type="radio"/> No	
Wetland provides valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	
Wetland class diversity	High		<input checked="" type="radio"/> Low	Shrub Swamps
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		<input checked="" type="radio"/> Low	Forest
Off-road parking near wetland available	Yes		<input checked="" type="radio"/> No	
Proximity to schools	<input checked="" type="radio"/> Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		<input checked="" type="radio"/> No	
Wetland contains pond/lake	Yes		<input checked="" type="radio"/> No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	Potential exists.
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input checked="" type="radio"/> No	
Wetland identified as exemplary natural community	Yes		<input checked="" type="radio"/> No	
Wetland locally/regionally significant	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		<input checked="" type="radio"/> No	
Views absent trash, debris, sign of degradation	<input checked="" type="radio"/> Yes		No	
Low noise level	<input checked="" type="radio"/> Yes		No	
Visual landuse contrast with wetland	<input checked="" type="radio"/> Yes		No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		<input checked="" type="radio"/> No	
Wetland contains critical habitat for state or federal listed species	Yes		<input checked="" type="radio"/> No	
Area appears in state or national database	Yes		<input checked="" type="radio"/> No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	No	No	Low	Low	No	Mod	High	Mod	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 42 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings S Shrubs Herbs Grass

Soil: BuB - Buxton Silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>	Isolated wetland
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<u>No</u>	
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	No inlet or outlet
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		Unknown No outlet
Wetland outlet restricted	<u>Yes</u>		No		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	<u>No</u>	No surface hydrologic connection	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land-use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size ≥ 0.5 acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream/reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

### S&TR/SEDIMENT/TOXICANT/PATHOGEN-RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low
			No inputs, low veg. density

### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	<u>No</u>	Isolated wetland
Degree of Function	High	Mod	

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<u>No</u>	
Fishing is available in or from the wetland	Yes	<u>No</u>	
Hunting is permitted in wetland	Yes	<u>No</u>	
Hiking occurs or has potential to occur in wetland	<u>Yes</u>	No	
Wetland is a valuable wildlife habitat	Yes	<u>No</u>	

Wetland has high visual/aesthetic quality	<input checked="" type="radio"/> Yes	No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	Potential for hiking, no access currently
Degree of Function	High	Mod	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<input checked="" type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input checked="" type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	<input checked="" type="radio"/> No	Isolated
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large	Small	
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Wooded swamp
Vegetation density	High	<input checked="" type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, leaf litter
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input checked="" type="radio"/> Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input checked="" type="radio"/> Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High <input checked="" type="radio"/> Mod	Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	(Yes)		No	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin college
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	(Yes)		No	Potential.
Degree of Function	High	Mod	(Low)	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	(Yes)		No	
Visual landuse contrast with wetland	Yes		(No)	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
mod/no	No	No	No	No	No	Low	mod	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

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**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA43** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
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PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<b>PSS / Shrub Swamp</b>	Sapling	<b>Bushy</b>	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub		Bushy shrub	Wooded	Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
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 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

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Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No  
 If Present: Slope or Depressional  
 Surface water depth: average - maximum -  
 Depth to free water:  
 Depth to saturation:  
 Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well **Moderately Well** Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil  
 Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep  
 Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm  
 Vegetation Density(S/M/D): **Trees** Saplings Shrubs Herbs Grass

Soil: BUB - Buxton silt loam.

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		No	
Slope	Gentle		Moderate or Steep	
Function Present	Yes	No		
Degree of Function	High	Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		No	
Wetland microrelief	Well developed		Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes		No	Isolated wetland
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Amount of impervious surface in wetland watershed	Large		Small	
Wetland Slope	Gentle		Moderate      Steep	
Wetland characterized by variable water level?	Yes		No	
Wetland in floodplain of adjacent watercourse	Yes		No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No	
Watershed has a history of economic loss due to flooding	Yes		No	Unknown
Wetland outlet restricted	Yes		No	Isolated
Wetland vegetation density	High		Low	
Wetland microrelief	Well developed		None/Poorly developed	

Function Present	Yes	<u>No</u>		
Degree of Function	High	Mod	Low	No surface hydrologic connection

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size ≥ 0.5 acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	





Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No		
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No		
Off-road public parking near wetland available	Yes	<input type="radio"/> No		
Safety Hazards (if present list them)	Yes	<input type="radio"/> No		
Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No		Potential for hiking
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<input checked="" type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input checked="" type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	<input checked="" type="radio"/> No	isolated
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large	Small	
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Shrub swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Shrubs, leaf litter
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Neary		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	No	No	Low	Low	No	Low	Low	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA44** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PEO / Wooded Swamp</b>	Deciduous	Evergreen	<b>Mixed forest</b>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** D **Saplings** S **Shrubs** S Herbs Grass

Soil: HrB - Howis fine sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		<i>Isolated wetland</i>
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>NO outlet - isolated wetland</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	3 North/South depressions - old farm
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	No inputs.
Degree of Function	High	Mod	

### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<input checked="" type="radio"/> No	<i>Isolated wetland</i>
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	<i>Potential - large area</i>
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>		
Boating or canoeing feasible in wetland	Yes	<del>No</del>		
Off-road public parking near wetland available	Yes	<del>No</del>		
Safety Hazards (if present list them)	Yes	<del>No</del>		
Function Present	<del>Yes</del>	No		Potential
Degree of Function	High	Mod	<del>Low</del>	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	Yes	<del>No</del>	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Interspersion of vegetation and open water	<del>High</del>	Low	
Upland islands	<del>Present</del>	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Wooded swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, shrub, herb, leaf litter
Wetland plant species diversity	High Mod <del>Low</del>		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Forest
Water regime	Wetter	<del>Drier</del>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<del>Few</del>	Logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del>	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	Moderate
Wetland class diversity	High		Low	Wooded swamp
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	No	No	Low	No	No	Low	Mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 45** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated		Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	Deciduous	Evergreen	<b>Mixed</b>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well **Moderately Well** Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** D **Saplings** M **Shrubs** S Herbs Grass

Soil: BuB - Buxton silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	Mod	<u>Low</u>	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<u>No</u>	
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	<i>Isolated wetland</i>
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>No outlet - isolated wetland</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size $\geq 0.5$ acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	<del>No</del>	
Duration of water retention in wetland	Long	<del>Short</del>	
Evidence of sediment trapping in wetland	Yes	<del>Low</del>	
Vegetation density	<del>High</del>	<del>No</del>	
Wetland edge broad and intermittently aerobic	<del>Yes</del>	Low	
Drainage ditches in wetland	<del>No</del>	Yes	
Water flow through wetland	<del>Diffuse</del>	Channelized	
Ponded water present	Yes	<del>No</del>	
Wetland basin topographic gradient	<del>Low</del>	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	<del>No</del>	Yes	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del> No inputs

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<del>Small</del>	
Potential sources of excess nutrients upstream	Yes	<del>No</del>	
Wetland is saturated most of the season	Yes	<del>No</del>	
Emergent vegetation and/or dense woody stems are dominant	<del>Yes</del>	No	
Water flow through wetland	<del>Diffuse</del>	Channelized	
Vegetation density	<del>High</del>	Low	
Potential for sediment trapping exists	<del>Yes</del>	No	Low
Deep or open water habitat is present	Yes	<del>No</del>	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	<del>Low</del>	High	
Wetland microrelief	Well developed	<del>None, poorly developed</del>	



Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<u>No</u>	<i>Isolated wetland</i>
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<u>No</u>	
Fishing is available in or from the wetland	Yes		<u>No</u>	
Hunting is permitted in wetland	Yes		<u>No</u>	
Hiking occurs or has potential to occur in wetland	<u>Yes</u>		No	<i>Potential - large area</i>
Wetland is a valuable wildlife habitat	Yes		<u>No</u>	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	<del>Yes</del>	No	Potential
Degree of Function	High	Mod	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	Yes	<del>No</del>	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Wooded swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, herb, leaf litter
Wetland plant species diversity	High Mod <del>Low</del>		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Forest
Water regime	Wetter	<del>Drier</del>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<del>Few</del>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	(Yes)		No	Moderate
Wetland class diversity	High		(Low)	Wooded Swamp
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin college
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	(Yes)		No	
Visual landuse contrast with wetland	Yes		(No)	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	No	No	Low	No	No	Low	mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 46** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<b>PSS / Shrub Swamp</b>	Sapling	<b>Bushy</b>	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

Depth to free water:

If Present: Slope or Depressional

Depth to saturation:

Surface water depth: average - maximum -

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well **Moderately Well** Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees D** **Saplings M** **Shrubs S** Herbs Grass

Soil: BuB - Buxton silt loam



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Eggs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		<i>Isolated wetland</i>
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>No outlet - isolated wetland</i>
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	<input checked="" type="radio"/>		
Degree of Function	High	Mod	Low	No outlet

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size $\geq 0.5$ acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low
			No inputs

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	low
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del> Potential

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	Yes	<del>No</del>	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Shrub swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Shrub, Tree, Herb
Wetland plant species diversity	High <del>Mod</del> Low		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Forest
Water regime	Wetter	<del>Drier</del>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<del>Few</del>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del> Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	Shrub swamp
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
low/no	No	No	low	Low	No	Low	mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: **FA 47**      Date: N/A      Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass	
POW/ Open water	Vegetated	Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody    Shrub    Sub-shrub	Robust    Narrow-leaved    Broad-leaved
PAB/ Shallow Marsh	Robust    Narrow-leaved    Broad-leaved	Floating leaved
PFL / Seasonally Flooded Flats	Emergent	Shrub
<b>PEM / Wet Meadow</b>	<b>Ungrazed</b>	Grazed
PSS / Shrub Swamp	Sapling    Bushy    Compact	Aquatic
PFO / Wooded Swamp	Deciduous	Evergreen
Bog	Compact shrub    Bushy shrub	<del>Wooded</del> Emergent

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present:    Yes    No      Depth to free water:  
 If Present: Slope or Depressional      Depth to saturation:  
 Surface water depth:    average -    maximum -      Signs of altered hydrology?    Yes    No

Hydrology indicators:    Inundated    **Saturated in upper 1"**    Water marks    Drift lines    Sediment deposits    Drainage patterns within wetlands    Other

Plant Adaptations to Hydrology:    Pneumatophores    Polymorphic leaves    Buttressed trees    Hypertrophied lenticels    Stooling    Inflated leaves,  
 stems, or roots    Adventitious roots    Rhizospheric oxidation    Shallow root systems    Floating leaves    Floating stems

Soil Drainage classes: Well    Moderately Well    Somewhat Poorly    **Poorly**    Very Poorly    Mapped Hydric Soil

Slope:    **Nearly level**    Gentle    Moderate    Steep

**Upland Border:**

Slope:    **Nearly level**    Gentle    Moderate    Steep  
 Cover Types:    **Mature forest**    Sapling forest    Shrub thicket    Meadow    Mowed lawn    Farm  
 Vegetation Density(S/M/D):    **Trees**    **Saplings**    Shrubs    Herbs    Grass

Soil:  $S_n$  - Scartic silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		<u>Hardpan, tight fine-grained soils, shallow ledge</u>		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	<u>High</u>	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	<u>Hardpan, shallow ledge</u>				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<u>Unknown</u>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<u>Yes</u>	No	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<u>Yes</u>	<i>Culverted from under airfield &amp; under road</i>
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	<u>High</u>	Low	
Channel alterations (channelization, islands or point bars)	<u>Absent or Few</u>	Numerous	
Bank stability	<u>Stable</u>	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	<i>Moderate -</i>
Cover objects (fallen logs, boulders, undercut banks)	<u>Many</u>	Absent/few	
Riparian zone	<u>Wide</u>	Narrow	
Watershed development	<u>Low</u>	High	
Water quality	Good	Poor	<i>Unknown</i>

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		No	
Duration of water retention in wetland	Long		Short	
Evidence of sediment trapping in wetland	Yes		Low	
Vegetation density	High		No	
Wetland edge broad and intermittently aerobic	Yes		Low	
Drainage ditches in wetland	No		Yes	
Water flow through wetland	Diffuse		Channelized	
Ponded water present	Yes		No	
Wetland basin topographic gradient	Low		High	
Fine grained mineral or organic soils present	Yes		No	
Watercourse, if present, has visible velocity decreases in wetland	Yes		No	
Indicators of erosion or high water velocities are present	No		Yes	Swiftly moving stream
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Potential sources of excess nutrients upstream	Yes		No	
Wetland is saturated most of the season	Yes		No	
Emergent vegetation and/or dense woody stems are dominant	Yes		No	
Water flow through wetland	Diffuse		Channelized	
Vegetation density	High		Low	
Potential for sediment trapping exists	Yes		No	low - no inputs
Deep or open water habitat is present	Yes		No	Not in wetland
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	Low		High	
Wetland microrelief	Well developed		None, poorly developed	

Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<del>Few</del>	
Vegetation density	<del>High</del>		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<del>Yes</del>		No	
Wetland has high degree of plant community structure and species diversity	Yes		<del>No</del>	
Detritus development is present within this wetland	<del>Yes</del>		No	
Flowering plants used by nectar gatherers present	Yes		<del>No</del>	
Evidence of wildlife use in wetland	Yes		<del>No</del>	
Fish or shellfish develop/occur in wetland	Yes		<del>No</del>	
Function Present	<del>Yes</del>		No	
Degree of Function	High	Mod	<del>Low</del>	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		<del>No</del>	
Potential sediment sources upstream or upslope	Yes		<del>No</del>	
Wetland border >10' adjacent to pond or water	<del>Yes</del>		No	
Distinct shoreline or bank evident between wetland and water	No		<del>Yes</del>	
Open water fetch present	Yes		<del>No</del>	
Boating activity present	Yes		<del>No</del>	
Floodplain stabilizing trees and shrubs present	<del>Yes</del>		No	
Indications of erosion or siltation present	Yes		<del>No</del>	
Function Present	<del>Yes</del>		No	
Degree of Function	High	Mod	<del>Low</del>	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<del>No</del>	
Fishing is available in or from the wetland	Yes		<del>No</del>	
Hunting is permitted in wetland	Yes		<del>No</del>	
Hiking occurs or has potential to occur in wetland	<del>Yes</del>		No	
Wetland is a valuable wildlife habitat	<del>Yes</del>		No	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wet meadow
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Sapling, shrub, herb, leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Med	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		<del>No</del>	
Wetland provides valuable wildlife habitat	<u>Yes</u>		No	
Wetland class diversity	High		<u>Low</u>	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		<u>Low</u>	Forest
Off-road parking near wetland available	Yes		<u>No</u>	
Proximity to schools	<u>Near</u>		Far	Bowdoin college
Wetland contains perennial watercourse	<u>Yes</u>		No	
Wetland contains pond/lake	Yes		<u>No</u>	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		<u>No</u>	
Function Present	<u>Yes</u>		No	
Degree of Function	High	Mod	<u>Low</u>	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<u>No</u>	
Wetland identified as exemplary natural community	Yes		<u>No</u>	
Wetland locally/regionally significant	Yes		<u>No</u>	
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		<u>No</u>	
Views absent trash, debris, sign of degradation	<u>Yes</u>		No	
Low noise level	<u>Yes</u>		No	
Visual landuse contrast with wetland	<u>Yes</u>		No	
Function Present	<u>Yes</u>		No	
Degree of Function	High	<u>Mod</u>	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		<u>No</u>	
Wetland contains critical habitat for state or federal listed species	Yes		<u>No</u>	
Area appears in state or national database	Yes		<u>No</u>	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	Mod	Mod	Low	No	Low	Low	Mod	Low	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: **FA 48**      Date: N/A      Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

Class	Subclass						
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PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent			Shrub			
<b>PEM / Wet Meadow</b>	<b>Ungrazed</b>			Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
PFO / Wooded Swamp	Deciduous			Evergreen			
Bog	Compact shrub	Bushy shrub	<del>Woody</del>	<del>Emergent</del>			

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present:      Yes      No

If Present:      Slope or Depressional

Surface water depth:      average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators:      Inundated      **Saturated in upper 12"**      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      *Pneumatophores*      *Polymorphic leaves*      *Buttressed trees*      *Hypertrophied lenticels*      *Stooling*      *Inflated leaves,*  
 stems, or roots      *Adventitious roots*      *Rhizospheric oxidation*      *Shallow root systems*      *Floating leaves*      *Floating stems*

Soil Drainage classes: Well      Moderately Well      Somewhat Poorly      **Poorly**      Very Poorly      Mapped Hydric Soil

Slope:      **Nearly level**      Gentle      Moderate      Steep

**Upland Border:**

Slope:      **Nearly level**      Gentle      Moderate      Steep

Cover Types:      **Mature forest**      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density(S/M/D):      **Trees**      **D**      Saplings      Shrubs      Herbs      Grass

Soil: Ru - Rumney fine sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain) Unstable banks

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		<u>Hardpan, light fine-grained soils, shallow ledge</u>	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Med</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<u>No</u>	
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		<u>Small</u>	
Amount of impervious surface in wetland watershed	Large		<u>Small</u>	
Wetland Slope	<u>Gentle</u>		Moderate Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No	
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>	
Watershed has a history of economic loss due to flooding	Yes		No	<u>Unknown</u>
Wetland outlet restricted	Yes		<u>No</u>	
Wetland vegetation density	<u>High</u>		Low	
Wetland microrelief	Well developed		<u>None/Poorly developed</u>	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size ≥ 0.5 acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	<input checked="" type="radio"/> Yes		No	
Gravel spawning areas present	Yes		<input checked="" type="radio"/> No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		<input checked="" type="radio"/> Yes	<i>Mere Brook from under airfield</i>
Dominant bottom substrate	Gravel/cobbles		<input checked="" type="radio"/> Sand/silt	
Substrate embeddedness by sand & silt	Low		<input checked="" type="radio"/> High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	<input checked="" type="radio"/> High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		<input checked="" type="radio"/> Numerous	<i>islands</i>
Bank stability	Stable		<input checked="" type="radio"/> Unstable, eroding	
Bank vegetative cover	High ( <input checked="" type="radio"/> trees) shrubs)		Low	<i>Moderate</i>
Cover objects (fallen logs, boulders, undercut banks)	<input checked="" type="radio"/> Many		Absent/few	
Riparian zone	<input checked="" type="radio"/> Wide		Narrow	
Watershed development	<input checked="" type="radio"/> Low		High	
Water quality	Good		Poor	<i>Unknown</i>



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown Fish obs. in stream
Function Present	Yes	No	
Degree of Function	High	Mod	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		No	
Duration of water retention in wetland	Long		Short	
Evidence of sediment trapping in wetland	Yes		Low	
Vegetation density	High		No	
Wetland edge broad and intermittently aerobic	Yes		Low	
Drainage ditches in wetland	No		Yes	
Water flow through wetland	Diffuse		Channelized	
Ponded water present	Yes		No	
Wetland basin topographic gradient	Low		High	
Fine grained mineral or organic soils present	Yes		No	
Watercourse, if present, has visible velocity decreases in wetland	Yes		No	
Indicators of erosion or high water velocities are present	No		Yes	Swiftly moving stream, trees down near bank.
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Potential sources of excess nutrients upstream	Yes		No	
Wetland is saturated most of the season	Yes		No	
Emergent vegetation and/or dense woody stems are dominant	Yes		No	
Water flow through wetland	Diffuse		Channelized	
Vegetation density	High		Low	
Potential for sediment trapping exists	Yes		No	
Deep or open water habitat is present	Yes		No	
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	Low		High	
Wetland microrelief	Well developed		None, poorly developed	

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<u>Abundant</u>	Few	
Vegetation density	<u>High</u>	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<u>Yes</u>	No	
Wetland has high degree of plant community structure and species diversity	<u>Yes</u>	No	
Detritus development is present within this wetland	<u>Yes</u>	No	
Flowering plants used by nectar gatherers present	<u>Yes</u>	No	
Evidence of wildlife use in wetland	<u>Yes</u>	No	<i>Sig. vernal pool #32</i>
Fish or shellfish develop/occur in wetland	Yes	No	<i>Unknown</i>
Function Present	<u>Yes</u>	No	
Degree of Function	<u>High</u>	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	<u>No</u>	
Potential sediment sources upstream or upslope	Yes	<u>No</u>	
Wetland border >10' adjacent to pond or water	<u>Yes</u>	No	
Distinct shoreline or bank evident between wetland and water	No	<u>Yes</u>	
Open water fetch present	Yes	<u>No</u>	
Boating activity present	Yes	<u>No</u>	
Floodplain stabilizing trees and shrubs present	<u>Yes</u>	No	
Indications of erosion or siltation present	<u>Yes</u>	No	<i>Trees down along bank</i>
Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<u>No</u>	
Fishing is available in or from the wetland	Yes	<u>No</u>	
Hunting is permitted in wetland	Yes	<u>No</u>	
Hiking occurs or has potential to occur in wetland	<u>Yes</u>	No	
Wetland is a valuable wildlife habitat	<u>Yes</u>	No	<i>Sig. vernal pool #32</i>

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	No	
Function Present	<del>Yes</del>	No	Potential
Degree of Function	High	Mod	<del>Low</del>

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	<del>Yes</del>	No	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	<del>Abundant</del>	Few	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	wet meadows
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			shrub, Herb,
Wetland plant species diversity	High <del>Mod</del> Low		
Vernal pool	<del>Yes</del>	No	Sig. vernal pool #32
Edge diversity (List types)			Forest
Water regime	Wetter	<del>Drier</del>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<del>Few</del>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	<del>High</del>	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		<del>No</del>	
Wetland provides valuable wildlife habitat	<del>Yes</del>		No	
Wetland class diversity	High		<del>Low</del>	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		<del>Low</del>	Forest
Off-road parking near wetland available	Yes		<del>No</del>	
Proximity to schools	<del>Near</del>		Far	Bowdoin College
Wetland contains perennial watercourse	<del>Yes</del>		No	
Wetland contains pond/lake	Yes		<del>No</del>	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		<del>No</del>	
Function Present	<del>Yes</del>		No	
Degree of Function	High	<del>Mod</del>	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<del>No</del>	
Wetland identified as exemplary natural community	Yes		<del>No</del>	
Wetland locally/regionally significant	<del>Yes</del>		No	Sig. vernal pool #32
Function Present	<del>Yes</del>		No	
Degree of Function	High	<del>Mod</del>	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		<del>No</del>	
Views absent trash, debris, sign of degradation	<del>Yes</del>		No	
Low noise level	<del>Yes</del>		No	
Visual landuse contrast with wetland	<del>Yes</del>		No	
Function Present	<del>Yes</del>		No	
Degree of Function	High	<del>Mod</del>	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		<del>No</del>	
Wetland contains critical habitat for state or federal listed species	Yes		<del>No</del>	
Area appears in state or national database	Yes		<del>No</del>	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	Mod	Mod	Low	Low	High	Low	High	Mod	Mod	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: **FA 49** Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead	Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent			Shrub			
PEM / Wet Meadow	Ungrazed			Grazed			
<u>PSS / Shrub Swamp</u>	Sapling	<u>Bushy</u>	Compact	Aquatic			
PFO / Wooded Swamp	Deciduous			Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent			

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs Grass

Soil: BuB - Buxton silt loam



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<u>No</u>	
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<u>Unknown</u>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	<u>No</u>	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<u>Yes</u>	<i>Mere Brook from under airfield</i>
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<u>Low</u>	
Channel alterations (channelization, islands or point bars)	Absent or Few	<u>Numerous</u>	
Bank stability	Stable	<u>Unstable, eroding</u>	<i>Many down trees along edges</i>
Bank vegetative cover	High (trees, shrubs)	<u>Low</u>	
Cover objects (fallen logs, boulders, undercut banks)	<u>Many</u>	Absent/few	
Riparian zone	<u>Wide</u>	Narrow	
Watershed development	<u>Low</u>	High	
Water quality	Good	Poor	<i>Unknown</i>

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown Fish observed
Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u> Low	

#### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	<u>Short</u>	
Evidence of sediment trapping in wetland	Yes	<u>Low</u>	
Vegetation density	<u>High</u>	No	
Wetland edge broad and intermittently aerobic	<u>Yes</u>	Low	
Drainage ditches in wetland	<u>No</u>	Yes	
Water flow through wetland	<u>Diffuse</u>	Channelized	
Ponded water present	Yes	<u>No</u>	
Wetland basin topographic gradient	<u>Low</u>	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	<u>No</u>	
Indicators of erosion or high water velocities are present	No	<u>Yes</u>	
Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

#### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Potential sources of excess nutrients upstream	Yes	<u>No</u>	
Wetland is saturated most of the season	Yes	<u>No</u>	
Emergent vegetation and/or dense woody stems are dominant	<u>Yes</u>	No	
Water flow through wetland	<u>Diffuse</u>	Channelized	
Vegetation density	<u>High</u>	Low	
Potential for sediment trapping exists	<u>Yes</u>	No	
Deep or open water habitat is present	Yes	<u>No</u>	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	<u>Low</u>	High	
Wetland microrelief	<u>Well developed</u>	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		<input type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		<input type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	Great Blue Heron present
Fish or shellfish develop/occur in wetland	Yes		<input type="radio"/> No	Unknown
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input checked="" type="radio"/> High	<input type="radio"/> Mod	<input type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
Potential sediment sources upstream or upslope	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
Wetland border > 10' adjacent to pond or water	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input type="radio"/> No	<input checked="" type="radio"/> Yes		
Open water fetch present	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
Boating activity present	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	Moderate shrubs.
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	Many downed trees along edge
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input checked="" type="radio"/> Mod	<input type="radio"/> Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
Fishing is available in or from the wetland	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
Hunting is permitted in wetland	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		<input type="radio"/> No	

Wetland has high visual/aesthetic quality	<u>Yes</u>	No	
Boating or canoeing feasible in wetland	Yes	<u>No</u>	
Off-road public parking near wetland available	Yes	<u>No</u>	
Safety Hazards (if present list them)	Yes	<u>No</u>	
<b>Function Present</b>	<u>Yes</u>	No	Potential
<b>Degree of Function</b>	High	<u>Mod</u>	

**WLH/WILDLIFE HABITAT**

Criteria	+			-	Comments
Wetland degradation by human activity	Little or None			<u>Moderate to High</u>	Culverted along reach.
Wetland fragmentation by development	<u>Little or None</u>			Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<u>Yes</u>			No	shrub / meadow
Buffer width	<u>Good to Excellent</u>			Fair to Poor	
Connectivity with other wetlands	<u>Yes</u>			No	
Size of landscape block in which wetland is located	<u>Large</u>			Small	
Wildlife food sources in wetland	<u>Abundant</u>			Few	
Interspersion of vegetation and open water	High			Low	
Upland islands	<u>Present</u>			Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High			<u>Low</u>	Shrub swamp
Vegetation density	<u>High</u>			Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)					Shrub, herb, leaf litter
Wetland plant species diversity	<u>High</u>	Mod	Low		
Vernal pool	Yes			<u>No</u>	
Edge diversity (List types)					
Water regime	Wetter			<u>Drier</u>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<u>Abundant</u>			Few	Fallen logs, snags
Cover objects (L=Logs/branches R=Rocks B=Bark)	<u>Abundant</u>			Few	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present			<u>Absent</u>	
Sphagnum hummocks next to shallow pools	Present			<u>Absent</u>	
Bare well drained sandy soils near wetland (turtle nest site)	Present			<u>Absent</u>	
Abundance of invasive exotic flora	<u>None or Low</u>			High	
<b>Function Present</b>	<u>Yes</u>			No	
<b>Degree of Function</b>	<u>High</u>	Mod		Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	Mod	Mod	Low	Low	High	Mod	High	Mod	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: **FA50**      Date: N/A      Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking

**Wetland Types(s) Cowardin/Golet Classification**

<b>Class</b>	<b>E2EM - emergent</b>					
POW/ Open water	Vegetated		Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present:      Yes      No

If Present: Slope or Depressional

Surface water depth:      average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators:      (undated)      (Saturated in upper 12")      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves, stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes:      (Well)      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      Nearly level      (Gentle)      Moderate      Steep

**Upland Border:**

Slope:      Nearly level      Gentle      (Moderate)      Steep

Cover Types:      (Mature forest)      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density(S/M/D):      (Trees)      D      (Saplings)      M      Shrubs      Herbs      Grass

Soil: SuD2 - Suffield silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<u>No</u>	
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	<i>Both inlet &amp; outlet</i>
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size ≥ 0.5 acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	Culverted above
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	Fish present in pooled areas
Degree of Function	High	Mod	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	No inputs
Degree of Function	High	Mod	

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	
Fish or shellfish develop/occur in wetland	<input checked="" type="radio"/> Yes		No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low	

S&SS/SEDIMENT/SHORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow .OW=Open water)	High	Low	Emergent marsh
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Herb, leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/NO	Mod	High	Mod	Mod	High	Mod	Mod	Low	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

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**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

**MODIFIED FUNCTIONS AND VALUES ASSESSMENT**

Project Name: Brunswick NAS      Wet Id#: FA 51      Date: N/A      Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic	
<u>PEO / Wooded Swamp</u>	Deciduous		<u>Evergreen</u>			
Bog	Compact shrub		Bushy shrub	Wooded		Emergent

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years  
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 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
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 Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity -  
Artificially flooded (K) - amount/duration of flooding controlled by dikes, dams, pumps, etc

**Hydrology:**

Ground water discharges present:      Yes      No  
 If Present: Slope or Depressional  
 Surface water depth:      average -      maximum -

Depth to free water:  
 Depth to saturation:  
 Signs of altered hydrology?      Yes      No

Hydrology indicators:      Unflooded      Saturated in upper 12"      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves,  
 stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: Well      Moderately Well      Somewhat Poorly      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      Nearly level      Gentle      Moderate      Steep

Upland Border:      Slope:      Nearly level      Gentle      Moderate      Steep

Cover Types:      Mature forest      Sapling forest      Shrub thicket      Meadow      Mowed lawn      Farm

Vegetation Density (S/M/D):      Trees      D      Saplings      Shrubs      Herbs      Grass

Soil: BuC2 - Buxton silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		<u>Inlet + outlet</u>
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	<u>Yes</u>		No		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<u>Yes</u>	No		Water impounded by berm-culveted into Harpswell Cove.
Degree of Function	High	<u>Mod</u>	Low	

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	Impounded by berm
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Flowering plants used by nectar gatherers present	Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Potential sediment sources upstream or upslope	Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	Potential
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	Potential
Degree of Function	High	Mod	

#### WLH/WILDLIFE HABITAT

Criteria	+			-	Comments
Wetland degradation by human activity	Little or None			Moderate to High	
Wetland fragmentation by development	Little or None			Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No			
Buffer width	Good to Excellent			Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No			
Size of landscape block in which wetland is located	Large			Small	
Wildlife food sources in wetland	Abundant			Few	
Interspersion of vegetation and open water	High			Low	
Upland islands	Present			Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High			Low	W
Vegetation density	High			Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)					Tree, leaf litter, herb
Wetland plant species diversity	High	Mod	Low		
Vernal pool	Yes			<input type="radio"/> No	
Edge diversity (List types)					
Water regime	Wetter			Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant			Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant			Few	
Fiat rocks in/near watercourse (stream salamanders)	Present			Absent	
Sphagnum hummocks next to shallow pools	Present			Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present			Absent	
Abundance of invasive exotic flora	None or Low			High	
Function Present	<input checked="" type="radio"/> Yes			No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low		

#### E&S/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	Yes		No	Moderate
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	(Yes)		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	Yes		(No)	
Low noise level	(Yes)		No	
Visual landuse contrast with wetland	(Yes)		No	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No	Mod	No	Mod	Mod	Low	Low	mod	Low	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 52 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub		Bushy shrub	Wooded		Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators:

Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology:

Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves,  
 stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well

Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope:

Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types:

Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D):

Trees D Saplings D Shrubs Herbs Grass

Soil: BUCz - Buxton silt loam



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<u>Unknown</u>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size $\geq 0.5$ acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	Vernal pools
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	No	
Fishing is available in or from the wetland	Yes	No	
Hunting is permitted in wetland	Yes	No	
Hiking occurs or has potential to occur in wetland	Yes	No	Potential
Wetland is a valuable wildlife habitat	Yes	No	

Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	Potential
Degree of Function	High	Mod	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<input checked="" type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input checked="" type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large	Small	
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	<input checked="" type="radio"/> Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Wooded swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, Sapling, Herb, leaf litter
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	<input checked="" type="radio"/> Yes	No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input checked="" type="radio"/> Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input checked="" type="radio"/> Abundant	Few	
Fiat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	<input checked="" type="radio"/> Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	(Yes)		No	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	Yes		(No)	
Low noise level	(Yes)		No	
Visual landuse contrast with wetland	Yes		(No)	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Low	No	mod	Mod	High	Low	High	Low	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo # 241 Direction: S  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 53 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<u>PSS / Shrub Swamp</u>	<u>Sapling</u>	<u>Bushy</u>	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M/D Saplings Shrubs Herbs Grass

Soil: Sn - Scantic silt loam - Hydric soil

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, <u>light fine-grained soils</u> , shallow-ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well-developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	<u>Yes</u>		No		Culverted into stream
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Golf course
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	Culverted under dirt Rd.
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	Golf course
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Vernal pool
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border > 10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes	No	Adj. to golf course, trails
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	



Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	<del>Yes</del>	No	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del>	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		Comments
Wetland degradation by human activity	Little or None	<del>Moderate to High</del>	Altered with culverts
Wetland fragmentation by development	Little or None	<del>Moderate to High</del>	Bisected by dirt rd.
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest + shrub thicket.
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	<del>Yes</del>	No	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	<del>Abundant</del>	Few	
Interspersion of vegetation and open water	<del>High</del>	Low	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Shrub swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Sapling, shrub, herb, leaf litter
Wetland plant species diversity	<del>High</del> Mod Low		
Vernal pool	<del>Yes</del>	No	
Edge diversity (List types)			
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<del>Few</del>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	<del>Present</del>	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	None or Low	High	Some Japanese knotweed at S. end
Function Present	<del>Yes</del>	No	
Degree of Function	<del>High</del>	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest, Sapling/shrub, Golf course
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin college
Wetland contains perennial watercourse	Yes		No	Culverted into stream
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Near airfield
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/mod	Mod	No	Mod	High	High	Mod	High	Mod	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo # 242 Direction: E  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 54 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

- 5/19

Class	Subclass					
POW/ Open water	Vegetated	Non-Vegetated				
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent	Shrub				
PEM / Wet Meadow	Ungrazed	Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous	Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present:  Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators:  Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well  Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope:  Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level  Gentle Moderate Steep

Cover Types:  Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D):  Trees D  Saplings M  Shrubs S  Herbs S  Grass S

Soil: 2TA - Lamoine silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		<u>Hardpan, light fine-grained soils, shallow ledge</u>		Somewhat poorly drained soils
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		Soils could allow some groundwater recharge

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	<u>Hardpan, shallow ledge</u>				Somewhat poorly drained soils
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	<u>Large</u>		Small		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		Semi-permanently flooded
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	Yes		<u>No</u>		No outlet observed
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	<input checked="" type="radio"/> Yes	No	Wetland does hold water for a significant period of time.
Degree of Function	High	<input checked="" type="radio"/> Mod	

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	<input checked="" type="radio"/> Forest, Shrub, Meadow		Lawn	Forest
Shallow littoral zone with emergent vegetation present?	<input checked="" type="radio"/> Yes		No	
Waterbody at least 10' deep	Yes		<input checked="" type="radio"/> No	
% of pond covered by submerged or emergent vegetation	15-40%		<input checked="" type="radio"/> Other	> 40% emergent
Direct stormwater discharge via culvert?	<input checked="" type="radio"/> No		Yes	
Sandbar present at inlet?	<input checked="" type="radio"/> No		Yes	No inlet observed
Water transparency	<input checked="" type="radio"/> High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	<input checked="" type="radio"/> No		Yes	
Pond size ≥ 0.5 acre	Yes		<input checked="" type="radio"/> No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	<input checked="" type="radio"/> No		Yes	None observed
Function Present	<input checked="" type="radio"/> Yes		No	Only semi-permanently flooded. No fish observed.
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	(No)	
Duration of water retention in wetland	(Long)	Short	
Evidence of sediment trapping in wetland	Yes	(Low)	
Vegetation density	(High)	No	
Wetland edge broad and intermittently aerobic	(Yes)	Low	
Drainage ditches in wetland	(No)	Yes	
Water flow through wetland	(Diffuse)	Channelized	
Ponded water present	(Yes)	No	
Wetland basin topographic gradient	(Low)	High	
Fine grained mineral or organic soils present	(Yes)	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse present
Indicators of erosion or high water velocities are present	(No)	Yes	
Function Present	(Yes)	No	If sediments were present, long retention time + no outlet would prevent runoff.
Degree of Function	(High)	Mod	

### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	(Large)	Small	
Potential sources of excess nutrients upstream	Yes	(No)	
Wetland is saturated most of the season	(Yes)	No	
Emergent vegetation and/or dense woody stems are dominant	(Yes)	No	
Water flow through wetland	(Diffuse)	Channelized	
Vegetation density	(High)	Low	
Potential for sediment trapping exists	(Yes)	No	
Deep or open water habitat is present	(Yes)	No	
Soil type	Organic/high clay content	Sand/gravel	Lamoine silt loam
Wetland basin topographic gradient	(Low)	High	
Wetland microrelief	(Well developed)	None, poorly developed	

Function Present	<input checked="" type="checkbox"/> Yes	No		If excess nutrient were present, retention time & no outlet would prevent runoff
Degree of Function	<input checked="" type="checkbox"/> High	Mod	Low	

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<input checked="" type="checkbox"/> No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="checkbox"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="checkbox"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="checkbox"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="checkbox"/> Yes		No	Some logging roads
Wetland is a valuable wildlife habitat	<input checked="" type="checkbox"/> Yes		No	

Wetland has high visual/aesthetic quality	Yes	(No)	
Boating or canoeing feasible in wetland	Yes	(No)	
Off-road public parking near wetland available	Yes	(No)	
Safety Hazards (if present list them)	Yes	(No)	
Function Present	Yes	(No)	Not used for recreation.
Degree of Function	High	(Mod)	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	(Little or None)	Moderate to High	
Wetland fragmentation by development	(Little or None)	Moderate to High	Old logging road at SW end.
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	(Yes)	No	Forest
Buffer width	(Good to Excellent)	Fair to Poor	
Connectivity with other wetlands	Yes	(No)	
Size of landscape block in which wetland is located	Large	(Small)	Near golf course and residential development
Wildlife food sources in wetland	(Abundant)	Few	
Interspersion of vegetation and open water	(High)	Low	
Upland islands	Present	(Absent)	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Open water and emergent marsh
Vegetation density	(High)	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Shrubs + herbaceous vegetation
Wetland plant species diversity	High (Mod) Low		Cattails dominant
Vernal pool	(Yes)	No	wood frog and spotted salamander egg masses
Edge diversity (List types)			Forest
Water regime	(Wetter)	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	(Abundant)	Few	Snags + fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	(Abundant)	Few	Logs + branches
Flat rocks in/near watercourse (stream salamanders)	Present	(Absent)	
Sphagnum hummocks next to shallow pools	(Present)	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	(Absent)	
Abundance of invasive exotic flora	(None or Low)	High	None observed.
Function Present	(Yes)	No	
Degree of Function	(High)	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	(Yes)		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	(Yes)		No	Golf course
Proximity to schools	(Near)		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	(Yes)		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	(Yes)		No	Vernal pool habitat
Degree of Function	(High)	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	Not a unique site.
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	Yes		(No)	Near airfield
Visual landuse contrast with wetland	(Yes)		No	
Function Present	(Yes)		No	Not highly accessible.
Degree of Function	High	(Mod)	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	<input checked="" type="radio"/> No	No listed spp. present.
Degree of Function	High	Mod	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Mod	Low	High	High	NO	Mod	High	High	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo # 243 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA55 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass
POW/ Open water	Vegetated Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody Shrub Sub-shrub Robust Narrow-leaved Broad-leaved
PAB/ Shallow Marsh	Robust Narrow-leaved Broad-leaved Floating leaved
PFL / Seasonally Flooded Flats	Emergent Shrub
PEM / Wet Meadow	Ungrazed Grazed
PSS / Shrub Swamp	Sapling Bushy Compact Aquatic
PFO / Wooded Swamp	Deciduous Evergreen
Bog	Compact shrub Bushy shrub Wooded Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs S Herbs S Grass S

white pine/red maple/  
red oak

Soil: No Value



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	Gentle		<u>Moderate or Steep</u>		
Function Present	<u>Yes</u>	No			
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	Gentle		<u>Moderate</u>	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	<u>Yes</u>		No		Culverted under road
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	<input checked="" type="radio"/> Forest, Shrub, Meadow	<input checked="" type="radio"/> Lawn	Golf course, roadways
Shallow littoral zone with emergent vegetation present?	<input type="radio"/> Yes	<input type="radio"/> No	
Waterbody at least 10' deep	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
% of pond covered by submerged or emergent vegetation	15-40%	<input checked="" type="radio"/> Other	< 15%
Direct stormwater discharge via culvert?	<input type="radio"/> No	<input checked="" type="radio"/> Yes	Under roadway into perennial stream
Sandbar present at inlet?	<input checked="" type="radio"/> No	<input type="radio"/> Yes	No inlet
Water transparency	High	<input checked="" type="radio"/> Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	<input type="radio"/> No	<input checked="" type="radio"/> Yes	Fertilizers from golf course
Pond size ≥ 0.5 acre	<input type="radio"/> Yes	<input checked="" type="radio"/> No	21175 sq. ft = 0.49 acres
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	<input type="radio"/> No	<input type="radio"/> Yes	Unknown, none observed
Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<input type="radio"/> Yes	<input type="radio"/> No	
Gravel spawning areas present	<input type="radio"/> Yes	<input type="radio"/> No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	<input type="radio"/> No	<input type="radio"/> Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Runoff from roadway or golf course
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	Little vegetation within ponded area
Wetland edge broad and intermittently aerobic	Yes	Low	Narrow wetland edge
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	Fertilizer from golf course
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	Narrow wetland border

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	Birds
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	Not a highly productive wetland or pond.
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	Narrow wetland edge
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	<input checked="" type="radio"/> Yes		No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes		No	Water is not clear
Function Present	<input checked="" type="radio"/> Yes		No	Ponded area is culverted under road into stream and may provide some stabilization to the stream.
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes		No	Adjacent to golf course
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	<input checked="" type="radio"/> Yes	No	At golf course
Safety Hazards (if present list them)	Yes	<input type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	while ponded area is adjacent to a golf course, it does not provide a recreational value
Degree of Function	High	<input checked="" type="radio"/> Mod	

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<input checked="" type="radio"/> Moderate to High	Area is highly altered by culvert and
Wetland fragmentation by development	Little or None	<input checked="" type="radio"/> Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	Good to Excellent	<input checked="" type="radio"/> Fair to Poor	while some forested buffer exists, ponded area is also adjacent to roadway.
Connectivity with other wetlands	Yes	<input type="radio"/> No	Ponded area culverted into stream
Size of landscape block in which wetland is located	Large	<input type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> Few	
Interspersion of vegetation and open water	High	<input type="radio"/> Low	Open water with a narrow wetland border
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="radio"/> Low	Narrow shrub edge
Vegetation density	High	<input type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			
Water regime	<input checked="" type="radio"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="radio"/> Few	Some logs and branches
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="radio"/> Few	"
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	None or Low	<input type="radio"/> High	Japanese knotweed present approx 200ft away
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	At golf course
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	ponded area culverted into stream
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	Trash along roadway
Low noise level	Yes		No	Near airfield and roadway
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	<input checked="" type="radio"/> No	No listed spp.
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	Mod	Low	Mod	Mod	Low	Mod	Low	No	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 244 Direction: NW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 56 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
<b>PFO / Wooded Swamp</b>	Deciduous		Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent			

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: **Yes** No

if Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well **Somewhat Poorly** Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle **Moderate** Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow **Mowed lawn** Farm

Vegetation Density(S/M/D): **Trees** D **Saplings** M Shrubs Herbs **Grass** D

Soil: 15A - Haplaquents - lamoline complex

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		<u>No</u>	
Slope	Gentle		<u>Moderate or Steep</u>	
Function Present	Yes	<u>No</u>		
Degree of Function	High	Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	<u>Yes</u>		No	
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed	
Wetland contains an outlet, no inlet	<u>Yes</u>		No	
Function Present	<u>Yes</u>		No	
Degree of Function	<u>High</u>	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		<u>Small</u>	
Amount of impervious surface in wetland watershed	Large		<u>Small</u>	Adj. to golf course
Wetland Slope	Gentle		<u>Moderate</u> Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>	
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>	
Watershed has a history of economic loss due to flooding	Yes		No	Unknown
Wetland outlet restricted	Yes		<u>No</u>	
Wetland vegetation density	<u>High</u>		Low	
Wetland microrelief	<u>Well developed</u>		None/Poorly developed	

Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral-zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<u>Yes</u>	No	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<u>Yes</u>	Ponded + Culverted
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	<u>High</u>	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	<u>Stable</u>	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	Moderate - golf course + Forest
Cover objects (fallen logs, boulders, undercut banks)	<u>Many</u>	Absent/few	
Riparian zone	Wide	<u>Narrow</u>	
Watershed development	Low	<u>High</u>	
Water quality	Good	Poor	Unknown

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Potential runoff from golf course
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Birds
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes	No	
Distinct shoreline or bank evident between wetland and water	No	<input checked="" type="radio"/> Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes	No	Golf course
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamps
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, shrub, herb, leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Forest, golf course
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Spruce/shrub thicket A=Agriculture)	High		Low	Forest, golf course
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				Golf balls
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/High	Mod	Mod	Mod	mod	High	High	Mod	Mod	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

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**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 245 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 57 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead	Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
<u>PSS / Shrub Swamp</u>	Sapling	Bushy	Compact	Aquatic			
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub		Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
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Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No  
 If Present: Slope or Depressional  
 Surface water depth: average - maximum -  
 Depth to free water:  
 Depth to saturation:  
 Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep  
 Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm  
 Vegetation Density(S/M/D): Trees Saplings M Shrubs Herbs Grass D

Soil: 15A - Haplagnents - Lamoline complex

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	Mod	<u>Low</u>	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	<u>Yes</u>		No	
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed	
Wetland contains an outlet, no inlet	<u>Yes</u>		No	
Function Present	<u>Yes</u>		No	
Degree of Function	High	<u>Mod</u>	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		<u>Small</u>	
Amount of impervious surface in wetland watershed	Large		<u>Small</u>	
Wetland Slope	<u>Gentle</u>	Moderate	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>	
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>	
Watershed has a history of economic loss due to flooding	Yes		No	<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>	
Wetland vegetation density	<u>High</u>		Low	
Wetland microrelief	<u>Well developed</u>		None/Poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<input checked="" type="radio"/> Yes	No	
Gravel spawning areas present	Yes	<input checked="" type="radio"/> No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<input checked="" type="radio"/> Yes	Ponded & culverted along road
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	<input checked="" type="radio"/> High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<input checked="" type="radio"/> Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	<input checked="" type="radio"/> Numerous	Channelized
Bank stability	<input checked="" type="radio"/> Stable	Unstable, eroding	
Bank vegetative cover	<input checked="" type="radio"/> High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	<input checked="" type="radio"/> Absent/few	
Riparian zone	Wide	<input checked="" type="radio"/> Narrow	
Watershed development	Low	<input checked="" type="radio"/> High	
Water quality	Good	Poor	Unknown



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	Birds
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes		No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	

Wetland has high visual/aesthetic quality	<u>Yes</u>	No	
Boating or canoeing feasible in wetland	Yes	<u>No</u>	
Off-road public parking near wetland available	<u>Yes</u>	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	<u>Yes</u>	No	
Degree of Function	<u>High</u>	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<u>Moderate to High</u>	
Wetland fragmentation by development	Little or None	<u>Moderate to High</u>	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<u>Yes</u>	No	Forest
Buffer width	Good to Excellent	<u>Fair to Poor</u>	
Connectivity with other wetlands	<u>Yes</u>	No	
Size of landscape block in which wetland is located	Large	<u>Small</u>	
Wildlife food sources in wetland	<u>Abundant</u>	Few	
Interspersion of vegetation and open water	<u>High</u>	Low	
Upland islands	Present	<u>Absent</u>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<u>Low</u>	Shrub Swamp
Vegetation density	<u>High</u>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Shrub, herb, leaf litter
Wetland plant species diversity	<u>High</u> Mod Low		
Vernal pool	Yes	<u>No</u>	
Edge diversity (List types)			Forest, golf course
Water regime	<u>Wetter</u>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<u>Few</u>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<u>Few</u>	
Flat rocks in/near watercourse (stream salamanders)	Present	<u>Absent</u>	
Sphagnum hummocks next to shallow pools	Present	<u>Absent</u>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<u>Absent</u>	
Abundance of invasive exotic flora	<u>None or Low</u>	High	
Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest, golf course
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**U/H/UNIQUENESS/HERITAGE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**VQA/VISUAL QUALITY/AESTHETICS**

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**ESH/ENDANGERED SPECIES HABITAT**

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/mod	mod	Mod	Mod	mod	High	High	Mod	Mod	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 246 Direction: E  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA58 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated		Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PEO / <u>Wooded Swamp</u>	<u>Deciduous</u>		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded		Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs Grass

Near / Golf course

Soil: 15A - Haplagnents - Lamoline complex



Leaf litter: Well developed Moderately well developed  
 Cover objects: Logs Bark Boulders  
 Evidence of Erosion: No Yes (Explain)

Absent in golf course areas  
 Rocks

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	Gentle		<u>Moderate or Steep</u>		
Function Present	<u>Yes</u>	No			
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		No		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	Gentle		<u>Moderate</u>	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<u>Unknown</u>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<u>Yes</u>	No	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<u>Yes</u>	Inflow a outflow culvert!
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	<u>High</u>	Low	
Channel alterations (channelization, islands or point bars)	<u>Absent or Few</u>	Numerous	
Bank stability	<u>Stable</u>	Unstable, eroding	
Bank vegetative cover	<u>High (trees, shrubs)</u>	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	<u>Absent/few</u>	
Riparian zone	<u>Wide</u>	Narrow	
Watershed development	Low	<u>High</u>	
Water quality	Good	Poor	Unknown

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	mod.
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Birds
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes	No	
Distinct shoreline or bank evident between wetland and water	No	<input checked="" type="radio"/> Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes	No	Golf course
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	

Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	Large	<input checked="" type="radio"/> Small	
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Wooded swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			T, S, SH, H, W
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Golf course, fields
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Golfcourse & fields
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				Golf balls
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	Low	Low	mod	Mod	High	Low	Mod	Low	No	mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 247 Direction: NW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 59 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs M Herbs M Grass D

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		<u>No</u>		<i>Borders stream</i>
Function Present	<u>Yes</u>		No		
Degree of Function	High	Mod	<u>Low</u>		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>Culverted under golf course walkway</i>
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	Emergent veg
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	Unknown

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	<i>Unknown</i>
Function Present	<i>Yes</i>	No	
Degree of Function	High	Mod	<i>Low</i>

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	<i>Yes</i>	No	
Duration of water retention in wetland	Long	<i>Short</i>	
Evidence of sediment trapping in wetland	<i>Yes</i>	Low	
Vegetation density	<i>High</i>	No	
Wetland edge broad and intermittently aerobic	<i>Yes</i>	Low	
Drainage ditches in wetland	<i>No</i>	Yes	
Water flow through wetland	<i>Diffuse</i>	Channelized	
Ponded water present	<i>Yes</i>	<i>No</i>	
Wetland basin topographic gradient	<i>Low</i>	High	
Fine grained mineral or organic soils present	<i>Yes</i>	No	
Watercourse, if present, has visible velocity decreases in wetland	<i>Yes</i>	No	
Indicators of erosion or high water velocities are present	<i>No</i>	Yes	
Function Present	<i>Yes</i>	No	
Degree of Function	High	<i>Mod</i>	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<i>Small</i>	
Potential sources of excess nutrients upstream	<i>Yes</i>	No	
Wetland is saturated most of the season	<i>Yes</i>	No	
Emergent vegetation and/or dense woody stems are dominant	<i>Yes</i>	No	
Water flow through wetland	<i>Diffuse</i>	Channelized	
Vegetation density	<i>High</i>	Low	
Potential for sediment trapping exists	<i>Yes</i>	No	
Deep or open water habitat is present	Yes	<i>No</i>	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	<i>Low</i>	High	
Wetland microrelief	<i>Well developed</i>	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	Not a lot of spp diversity
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	Great blue heron
Fish or shellfish develop/occur in wetland	Yes		No	unknown
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes		<input checked="" type="radio"/> No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="radio"/> Yes		No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	



Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	Golf balls
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Sapling / Shrub thicket
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wm
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Herb,
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Shrub thicket, mowed lawn
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input type="radio"/> No	
Wetland provides valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	
Wetland class diversity	High		<input type="radio"/> Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		<input type="radio"/> Low	S, mowed lawn
Off-road parking near wetland available	Yes		<input type="radio"/> No	
Proximity to schools	<input checked="" type="radio"/> Near		Far	Bowdoin
Wetland contains perennial watercourse	<input checked="" type="radio"/> Yes		No	
Wetland contains pond/lake	Yes		<input type="radio"/> No	
Safety hazards (if present list them)				Golf balls
Site currently used for educational/scientific purposes	Yes		<input type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input type="radio"/> Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input type="radio"/> No	
Wetland identified as exemplary natural community	Yes		<input type="radio"/> No	
Wetland locally/regionally significant	Yes		<input type="radio"/> No	
Function Present	Yes		<input type="radio"/> No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	<input checked="" type="radio"/> Yes		No	
Views absent trash, debris, sign of degradation	Yes		<input type="radio"/> No	
Low noise level	Yes		<input type="radio"/> No	Near airfield
Visual landuse contrast with wetland	<input checked="" type="radio"/> Yes		No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input type="radio"/> Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		<input type="radio"/> No	
Wetland contains critical habitat for state or federal listed species	Yes		<input type="radio"/> No	
Area appears in state or national database	Yes		<input type="radio"/> No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Low	Mod	Low	Mod	Mod	Mod	Mod	Mod	Low	Low	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

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Photo #: 248 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 60 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
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Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs Grass

Soil: 26A - Gouldsboro silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	<u>High</u>	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		No	
Duration of water retention in wetland	Long		Short	
Evidence of sediment trapping in wetland	Yes		Low	
Vegetation density	High		No	
Wetland edge broad and intermittently aerobic	Yes		Low	
Drainage ditches in wetland	No		Yes	
Water flow through wetland	Diffuse		Channelized	
Ponded water present	Yes		No	
Wetland basin topographic gradient	Low		High	
Fine grained mineral or organic soils present	Yes		No	
Watercourse, if present, has visible velocity decreases in wetland	Yes		No	
Indicators of erosion or high water velocities are present	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Potential sources of excess nutrients upstream	Yes		No	
Wetland is saturated most of the season	Yes		No	
Emergent vegetation and/or dense woody stems are dominant	Yes		No	
Water flow through wetland	Diffuse		Channelized	
Vegetation density	High		Low	
Potential for sediment trapping exists	Yes		No	
Deep or open water habitat is present	Yes		No	
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	Low		High	
Wetland microrelief	Well developed		None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Vegetation density	High	<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	Yes	<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	Yes	<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	Yes	<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes	No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	Potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del> Potential

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	<del>Yes</del>	No	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Wooded swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, Sapling
Wetland plant species diversity	High Mod <del>Low</del>		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Forest
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<del>Abundant</del>	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<del>Abundant</del>	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del> Low	

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	(Yes)		No	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sprling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	Yes		(No)	Near airfield
Visual landuse contrast with wetland	(Yes)		No	
Function Present	(Yes)		No	
Degree of Function	High	(Mod)	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	(No)	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/High	No	No	Low	Low	Low	Low	mod	Low	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo#: 249 Direction: SE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 61 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	Deciduous		<u>Evergreen</u>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings D Shrubs Herbs M Grass



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	<u>Yes</u>		No	
Wetland microrelief	<u>Well developed</u>		None/Poorly developed	
Wetland contains an outlet, no inlet	Yes		No	
Function Present	<u>Yes</u>		No	
Degree of Function	High	<u>Mod</u>	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	<del>Mostly intolerant</del>		Mostly tolerant	
Function Present	<del>Yes</del>		No	
Degree of Function	High	Mod	Low	

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		No	
Duration of water retention in wetland	Long		Short	
Evidence of sediment trapping in wetland	Yes		Low	
Vegetation density	High		No	
Wetland edge broad and intermittently aerobic	Yes		Low	
Drainage ditches in wetland	No		Yes	
Water flow through wetland	Diffuse		Channelized	
Ponded water present	Yes		No	
Wetland basin topographic gradient	Low		High	
Fine grained mineral or organic soils present	Yes		No	
Watercourse, if present, has visible velocity decreases in wetland	Yes		No	
Indicators of erosion or high water velocities are present	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	No inputs

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Potential sources of excess nutrients upstream	Yes		No	
Wetland is saturated most of the season	Yes		No	
Emergent vegetation and/or dense woody stems are dominant	Yes		No	
Water flow through wetland	Diffuse		Channelized	
Vegetation density	High		Low	
Potential for sediment trapping exists	Yes		No	
Deep or open water habitat is present	Yes		No	
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	Low		High	
Wetland microrelief	Well developed		None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	Potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low
			Potential

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	Weapons facility
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	No open water
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, herb, ll
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	Near weapons facility
Low noise level	Yes		No	Near airfield
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes			<input checked="" type="radio"/> No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Low	No	Mod	Low	No	Mod	High	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 256 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 62 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<u>PSS / Shrub Swamp</u>	Sapling	<u>Bushy</u>	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs Herbs Grass

Adjacent to EOD pit.

Soil: Wrb - Woodbridge fine sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	<u>Forest, Shrub, Meadow</u>	Lawn	EOD Pit
Shallow littoral zone with emergent vegetation present?	<u>Yes</u>	No	
Waterbody at least 10' deep	Yes	No	Unknown
% of pond covered by submerged or emergent vegetation	<u>15-40%</u>	Other	
Direct stormwater discharge via culvert?	<u>No</u>	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	<u>High</u>	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	<u>No</u>	Yes	
Pond size ≥ 0.5 acre	<u>Yes</u>	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	Unknown
Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	EOD Pit?
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	Unknown
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Birds
Fish or shellfish develop/occur in wetland	Yes	No	Potential
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes	No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	<input checked="" type="radio"/> Yes	No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	

Wetland has high visual/aesthetic quality	Yes	No	Adj. to EOD pit
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	EOD Pit
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Shrub thicket, Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Shrub swamp, Open water
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Sh, H, LL
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Forest, shrubs
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	EOD Pit
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest, shrub
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Rowden
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				EOD Pit
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/mod	No	Mod	High	High	High	No	Mod	No	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 257 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 63 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akiros Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	Deciduous	Evergreen	<b>Mixed</b>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

**Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years**

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level **Gentle** Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate **Steep**

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** **Saplings** M Shrubs Herbs Grass

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	<u>Yes</u>		No	
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed	
Wetland contains an outlet, no inlet	<u>Yes</u>		No	
Function Present	<u>Yes</u>		No	
Degree of Function	High	<u>Mod</u>	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large	<u>Small</u>			
Amount of impervious surface in wetland watershed	Large	<u>Small</u>			
Wetland Slope	<u>Gentle</u>	Moderate	Steep		
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		<u>No</u>		
Wetland outlet restricted	<u>Yes</u>		No		<i>Converted under dirt road</i>
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	<i>Significant vernal pool</i>
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	



Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	<input checked="" type="radio"/> Yes	No	Next to EOD pit
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+		Comments
Wetland degradation by human activity	Little or None	<input checked="" type="radio"/> Moderate to High	
Wetland fragmentation by development	Little or None	<input checked="" type="radio"/> Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	Good to Excellent	<input checked="" type="radio"/> Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large	Small	
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	<input checked="" type="radio"/> High	Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Sapling, Shrub, Herb, LL
Wetland plant species diversity	High <input checked="" type="radio"/> Mod <input checked="" type="radio"/> Low		
Vernal pool	<input checked="" type="radio"/> Yes	No	
Edge diversity (List types)			Forest, EOD roadways
Water regime	<input checked="" type="radio"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input checked="" type="radio"/> Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input checked="" type="radio"/> Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	<input checked="" type="radio"/> Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest, EOD pit
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Boundary
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				EOD Pit
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Near airfield
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Mod	Low	No	Mod	Mod	Mod	No	Mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 259 Direction: NW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 65 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs Grass

Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	Gentle		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	<u>Yes</u>		No		<i>Converted under road</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	(Forest) Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	(Yes)	No	
Waterbody at least 10' deep	(Yes)	No	
% of pond covered by submerged or emergent vegetation	(15-40%)	Other	
Direct stormwater discharge via culvert?	No	(Yes)	
Sandbar present at inlet?	No	Yes	
Water transparency	(High)	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	(No)	Yes	
Pond size ≥0.5 acre	(Yes)	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	Unknown
Function Present	(Yes)	No	
Degree of Function	High	(Mod)	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	<del>Mostly intolerant</del>		Mostly tolerant
Function Present	Yes		No
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	Unknown
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

S&SS/SEDIMENT/SHORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	<input checked="" type="radio"/> Yes		No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	<u>Yes</u>	No	
Boating or canoeing feasible in wetland	<u>Yes</u>	No	
Off-road public parking near wetland available	<u>Yes</u>	No	
Safety Hazards (if present list them)	<u>Yes</u>	No	In restricted area.
Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

#### WLH/WILDLIFE HABITAT

Criteria	+		Comments
Wetland degradation by human activity	Little or None	<u>Moderate to High</u>	
Wetland fragmentation by development	Little or None	<u>Moderate to High</u>	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<u>Yes</u>	No	Forest, Lawn
Buffer width	Good to Excellent	<u>Fair to Poor</u>	
Connectivity with other wetlands	<u>Yes</u>	No	
Size of landscape block in which wetland is located	Large	<u>Small</u>	
Wildlife food sources in wetland	Abundant	<u>Few</u>	
Interspersion of vegetation and open water	<u>High</u>	Low	
Upland islands	Present	<u>Absent</u>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Shrub swamp, Open water
Vegetation density	High	<u>Low</u>	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Shrub, herb
Wetland plant species diversity	High Mod <u>Low</u>		
Vernal pool	Yes	<u>No</u>	
Edge diversity (List types)			Forest, lawn
Water regime	<u>Wetter</u>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<u>Few</u>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<u>Few</u>	
Flat rocks in/near watercourse (stream salamanders)	Present	<u>Absent</u>	
Sphagnum hummocks next to shallow pools	Present	<u>Absent</u>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<u>Absent</u>	
Abundance of invasive exotic flora	<u>None or Low</u>	High	
Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest, Lawn
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				In restricted area
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/>	No
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	No	Mod	mod	Low	Mod	Mod	Mod	Low	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

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**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 263 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 68 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aqualic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs D Grass D

Soil-27A - Lamoine silt loam. -

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, light fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		Golf course
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	<u>Yes</u>		No		Converted
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes		<input checked="" type="radio"/> No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	Next to airfield
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Lawn
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	PEM
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Herb
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Grassland
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Grassland
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdon
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				Next to airfield
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			<input checked="" type="radio"/> No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Low	No	Low	Low	Low	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

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Photo #: 264 Direction: SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 69 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

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Class	Subclass					
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PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed			Grazed		
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

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Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees S Saplings M Shrubs M Herbs Grass

20A - Naumburg loamy fine sand - Hydric

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	<u>High</u>	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		<i>Golf course</i>
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		<input type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		<input type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	<i>Vernal pools</i>
Fish or shellfish develop/occur in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input checked="" type="radio"/> High	<input type="radio"/> Mod	<input type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input type="radio"/> No		<input checked="" type="radio"/> Yes	
Open water fetch present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Boating activity present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Indications of erosion or siltation present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input type="radio"/> Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	<i>Potential</i>
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		<input type="radio"/> No	

Wetland has high visual/aesthetic quality	<input checked="" type="radio"/> Yes	No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	Potential
Degree of Function	High	<input checked="" type="radio"/> Mod	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<input checked="" type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input checked="" type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	Large	<input checked="" type="radio"/> Small	
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	<input checked="" type="radio"/> High	Low	
Upland islands	<input checked="" type="radio"/> Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Shrub swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Sapling, shrub, Herb, LL
Wetland plant species diversity	High <input checked="" type="radio"/> Mod Low		
Vernal pool	<input checked="" type="radio"/> Yes	No	
Edge diversity (List types)			Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/High	Mod	No	Mod	Low	High	Mod	Mod	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo#: 265 Direction: S  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 70 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead	Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust		Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent			Shrub			
PEM / Wet Meadow	Ungrazed			Grazed			
PSS / Shrub Swamp	Sapling	Bushy		Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>	<u>Evergreen</u>	<u>Mixed</u>				
Bog	Compact shrub		Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs Grass

Soil: 20A - Naumburg loamy fine sand - Hydric



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	<u>Yes</u>	No		
Degree of Function	High	<u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		No	
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		<i>Golf course</i>
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	Vernal pools
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	No	
Fishing is available in or from the wetland	Yes	No	
Hunting is permitted in wetland	Yes	No	
Hiking occurs or has potential to occur in wetland	Yes	No	
Wetland is a valuable wildlife habitat	Yes	No	Vernal pools

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, herb, leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	low	No	Low	No	Low	Low	mod	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



Photo #: 266 Direction: E  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 71 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic		
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>		Evergreen				
Bog	Compact shrub		Bushy shrub	Wooded		Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally-saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs Grass

34c - Tunbridge fine sandy loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Eggs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large	<u>Small</u>			
Amount of impervious surface in wetland watershed	Large	<u>Small</u>			
Wetland Slope	<u>Gentle</u>	Moderate	Steep		
Wetland characterized by variable water level?	<u>Yes</u>	No			
Wetland in floodplain of adjacent watercourse	<u>Yes</u>	No			
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>	No			
Watershed has a history of economic loss due to flooding	Yes	No			<i>Unknown</i>
Wetland outlet restricted	Yes	<u>No</u>			
Wetland vegetation density	High	<u>Low</u>			
Wetland microrelief	Well developed	<u>None/Poorly developed</u>			

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**F&SH/FINFISH HABITAT: POND & LAKE** (~~Excluding condition: Not associated with pond/lake~~)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size $\geq 0.5$ acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (~~Excluding condition: Not associated with perennial stream~~)

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Unknown
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	Low
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	Yes		No	Unknown
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes		<input checked="" type="radio"/> No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	Potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	Moderate

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Wooded swamp
Vegetation density	High	<del>Low</del>	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, Sapling, Herb, LL
Wetland plant species diversity	High Mod <del>Low</del>		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Forest
Water regime	Wetter	<del>Drier</del>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<del>Few</del>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	Yes	No	
Degree of Function	High	<del>Mod</del>	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input checked="" type="radio"/> No	
Wetland provides valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	
Wetland class diversity	High		<input checked="" type="radio"/> Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		<input checked="" type="radio"/> Low	Forest
Off-road parking near wetland available	Yes		<input checked="" type="radio"/> No	
Proximity to schools	<input checked="" type="radio"/> Near		Far	Bowdoin seasonal
Wetland contains perennial watercourse	Yes		<input checked="" type="radio"/> No	
Wetland contains pond/lake	Yes		<input checked="" type="radio"/> No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input checked="" type="radio"/> No	
Wetland identified as exemplary natural community	Yes		<input checked="" type="radio"/> No	
Wetland locally/regionally significant	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		<input checked="" type="radio"/> No	
Views absent trash, debris, sign of degradation	<input checked="" type="radio"/> Yes		No	
Low noise level	Yes		<input checked="" type="radio"/> No	
Visual landuse contrast with wetland	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		<input checked="" type="radio"/> No	
Wetland contains critical habitat for state or federal listed species	Yes		<input checked="" type="radio"/> No	
Area appears in state or national database	Yes		<input checked="" type="radio"/> No	



Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
mod/No	Low	No	No	No	Low	No	mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 267 Direction: SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 72 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
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PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact		Aquatic	
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>		Evergreen			
Bog	Compact shrub		Bushy shrub	Wooded	Emergent	

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

**Semi-permanently flooded (F) - surface water persists throughout growing season in most years**

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level **Gentle** Moderate Steep

Upland Border:

Slope: Nearly level Gentle **Moderate** Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** D **Saplings** M Shrubs Herbs Grass

Soil: wmb - Windsor loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>	
Slope	<u>Gentle</u>		Moderate or Steep	
Function Present	Yes <u>No</u>			
Degree of Function	High	Mod	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		No	
Wetland microrelief	Well developed		<u>None/Poorly developed</u>	
Wetland contains an outlet, no inlet	Yes		<u>No</u>	Inundated culvert @ Northern end - inlet
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		<u>Small</u>	
Amount of impervious surface in wetland watershed	Large		<u>Small</u>	
Wetland Slope	<u>Gentle</u>		Moderate Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No	
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No	
Watershed has a history of economic loss due to flooding	Yes		No	Unknown
Wetland outlet restricted	<u>Yes</u>		No	
Wetland vegetation density	<u>High</u>		Low	
Wetland microrelief	Well developed		<u>None/Poorly developed</u>	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Runoff from roads
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	

Wetland has high visual/aesthetic quality	<input checked="" type="radio"/> Yes	No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	Potential
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<input checked="" type="radio"/> Moderate to High	
Wetland fragmentation by development	Little or None	<input checked="" type="radio"/> Moderate to High	Roadway to north
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	Good to Excellent	<input checked="" type="radio"/> Fair to Poor	Near Harpswell Rd.
Connectivity with other wetlands	Yes	<input checked="" type="radio"/> No	
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large	Small	
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	<input checked="" type="radio"/> High	Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, Sapling, Shrub
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	<input checked="" type="radio"/> Yes	No	TRC pool # 42
Edge diversity (List types)			
Water regime	<input checked="" type="radio"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	<input checked="" type="radio"/> High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Road noise
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/No	High	No	High	Mod	No	Mod	High	Mod	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 268 Direction: NE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 73 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass	
POW/ Open water	Vegetated	Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody Shrub	Sub-shrub Robust Narrow-leaved Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved Broad-leaved Floating leaved
PFL / Seasonally Flooded Flats	Emergent	Shrub
PEM / Wet Meadow	Ungrazed	Grazed
PSS / Shrub Swamp	Sapling Bushy	Compact Aquatic
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>	Evergreen
Bog	Compact shrub Bushy shrub	Wooded Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground-water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well **Moderately Well** Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: Nearly level **Gentle** Moderate Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** D **Saplings** M Shrubs Herbs Grass

Soil: DeB- Deerfield loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		<u>Unknown</u>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+		-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow		Lawn	
Shallow littoral zone with emergent vegetation present?	Yes		No	
Waterbody at least 10' deep	Yes		No	
% of pond covered by submerged or emergent vegetation	15-40%		Other	
Direct stormwater discharge via culvert?	No		Yes	
Sandbar present at inlet?	No		Yes	
Water transparency	High		Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No		Yes	
Pond size ≥ 0.5 acre	Yes		No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

*Ephemeral stream*

Criteria	+		-	Comments
Channel shaded by riparian trees and/or shrubs	Yes		No	
Gravel spawning areas present	Yes		No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No		Yes	
Dominant bottom substrate	Gravel/cobbles		Sand/silt	
Substrate embeddedness by sand & silt	Low		High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High		Low	
Channel alterations (channelization, islands or point bars)	Absent or Few		Numerous	
Bank stability	Stable		Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)		Low	
Cover objects (fallen logs, boulders, undercut banks)	Many		Absent/few	
Riparian zone	Wide		Narrow	
Watershed development	Low		High	
Water quality	Good		Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	Potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	



Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del>	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	<del>Large</del>	Small	
Wildlife food sources in wetland	<del>Abundant</del>	Few	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, shrub, herb, LL
Wetland plant species diversity	High <del>Mod</del> Low		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			Forest
Water regime	Wetter	<del>Drier</del>	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del>	Low

#### E&S/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	Low	No	Mod	Low	Mod	Mod	Mod	Low	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 269 Direction: SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 74 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<u>PSS / Shrub Swamp</u>	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Unundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs Grass

Soil: DeB - Deer field loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		Residential
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	<u>Yes</u>		No		Culverted under Road
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

*Seasonal Stream*

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	No		No inputs
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Vegetation density	<input checked="" type="radio"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	Yes	<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	Yes	<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes	No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	Potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del> Potential

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Shrub swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, shrub, herb, ll
Wetland plant species diversity	High <del>Mod</del> Low		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<del>Abundant</del>	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<del>Abundant</del>	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	<del>Present</del>	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	<del>High</del>	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Borderline
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	High	No	mod	low	Mod	Low	High	Low	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 270 Direction: W  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 75 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>	Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

Depth to free water:

If Present: Slope or Depressional

Depth to saturation:

Surface water depth: average - maximum -

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well **Moderately Well** Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level **Gentle** Moderate Steep

Upland Border:

Slope: Nearly level Gentle **Moderate** Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees **D** Saplings **S** Shrubs **S** Herbs Grass

DeB - Deerfield loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	<u>Sand/gravel outwash</u>	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	Yes	<u>No</u>	
Slope	<u>Gentle</u>	Moderate or Steep	
Function Present	<u>Yes</u> No		
Degree of Function	High <u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	Yes	No	
Wetland microrelief	<u>Well developed</u>	Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes	<u>No</u>	No apparent inlet or outlet - isolated
Function Present	<u>Yes</u> No	No	
Degree of Function	High <u>Mod</u>	Low	

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Amount of impervious surface in wetland watershed	Large	<u>Small</u>	
Wetland Slope	<u>Gentle</u>	Moderate Steep	
Wetland characterized by variable water level?	Yes	No	
Wetland in floodplain of adjacent watercourse	Yes	<u>No</u>	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes	<u>No</u>	
Watershed has a history of economic loss due to flooding	Yes	No	Unknown
Wetland outlet restricted	Yes	<u>No</u>	Isolated - no outlet
Wetland vegetation density	High	<u>Low</u>	
Wetland microrelief	<u>Well developed</u>	None/Poorly developed	

Function Present.	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		No	
Duration of water retention in wetland	Long		Short	
Evidence of sediment trapping in wetland	Yes		Low/No	
Vegetation density	High		No/Low	
Wetland edge broad and intermittently aerobic	Yes		Low/No	
Drainage ditches in wetland	No		Yes	
Water flow through wetland	Diffuse		Channelized	
Ponded water present	Yes		No	
Wetland basin topographic gradient	Low		High	
Fine grained mineral or organic soils present	Yes		No	
Watercourse, if present, has visible velocity decreases in wetland	Yes		No	No watercourse present
Indicators of erosion or high water velocities are present	No		Yes	
Function Present	Yes		No	No sources of sediments, water present from ground water discharge.
Degree of Function	High	Mod	Low	

### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Potential sources of excess nutrients upstream	Yes		No	
Wetland is saturated most of the season	Yes		No	
Emergent vegetation and/or dense woody stems are dominant	Yes		No	
Water flow through wetland	Diffuse		Channelized	
Vegetation density	High		Low	
Potential for sediment trapping exists	Yes		No	
Deep or open water habitat is present	Yes		No	
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	Low		High	
Wetland microrelief	Well developed		None, poorly developed	



Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	No public access
Degree of Function	High	Mod	<input checked="" type="radio"/> Low Potential

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<input type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	<input type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	<input type="radio"/> No	
Size of landscape block in which wetland is located	<input type="radio"/> Large	Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> Few	
Interspersion of vegetation and open water	<input type="radio"/> High	Low	
Upland islands	Present	<input type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="radio"/> Low	Wooded swamp
Vegetation density	High	<input type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Leaf litter, herb, sapling, tree
Wetland plant species diversity	High Mod <input type="radio"/> Low		Red maple, sphagnum
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input type="radio"/> Abundant	Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input type="radio"/> Abundant	Few	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	<input type="radio"/> Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	high quality wetland, small size.
Degree of Function	High	<input type="radio"/> Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	No public access
Proximity to schools	Near		Far	↓ Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	NO public access
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	No public access
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Near Airfield
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	No public access
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/>	No
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	No	No	Low	Low	No	Low	Mod	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

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**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 271 Direction: NW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS      Wet Id#: FA 76      Date: N/A Functional Unit:      Weather: N/A      Time Start: N/A      Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios      Recent Precipitation: N/A      Below average       Average       Above Average       Don't Know       TBD   
 Wildlife Investigation Method: Cover search       Dip netting       Auditory       Scat       Tracks       Minnow Traps       Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
<b>PEM / Wet Meadow</b>	<b>Ungrazed</b>		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

**Water Regimes (Cowardin Modifier):**

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

**Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow**

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season  
 Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--  
 Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

**Hydrology:**

Ground water discharges present: **Yes**      No

If Present: Slope or Depressional

Surface water depth:      average -      maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology?      Yes      No

Hydrology indicators:      **Inundated**      **Saturated in upper 12"**      Water marks      Drift lines      Sediment deposits      Drainage patterns within wetlands      Other

Plant Adaptations to Hydrology:      Pneumatophores      Polymorphic leaves      Buttressed trees      Hypertrophied lenticels      Stooling      Inflated leaves,  
 stems, or roots      Adventitious roots      Rhizospheric oxidation      Shallow root systems      Floating leaves      Floating stems

Soil Drainage classes: Well      Moderately Well      **Somewhat Poorly**      Poorly      Very Poorly      Mapped Hydric Soil

Slope:      **Nearly level**      Gentle      Moderate      Steep

**Upland Border:**

Slope:      Nearly level      **Gentle**      Moderate      Steep

Cover Types:      **Mature forest**      Sapling forest      Shrub thicket      Meadow      **Mowed lawn**      Farm

Vegetation Density(S/M/D):      Trees **D**      Saplings **M**      Shrubs **S**      Herbs **S**      Grass

Soil: 27A - Lamoine silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		Golf course
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

*Relatively small size*

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Golf course
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	No watercourse present
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	Golf course
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="checkbox"/> Yes	No	
Degree of Function	<input checked="" type="checkbox"/> High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	<input checked="" type="checkbox"/> Abundant	Few	
Vegetation density	<input checked="" type="checkbox"/> High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="checkbox"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="checkbox"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="checkbox"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="checkbox"/> Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="checkbox"/> No	
Function Present	<input checked="" type="checkbox"/> Yes	No	<i>Relatively small wetland area</i>
Degree of Function	High	<input checked="" type="checkbox"/> Mod	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="checkbox"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="checkbox"/> Yes	No	
Wetland border >10' adjacent to pond or water	Yes	<input checked="" type="checkbox"/> No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="checkbox"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="checkbox"/> No	
Boating activity present	Yes	<input checked="" type="checkbox"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="checkbox"/> Yes	No	<i>Willow spp.</i>
Indications of erosion or siltation present	Yes	<input checked="" type="checkbox"/> No	
Function Present	<input checked="" type="checkbox"/> Yes	No	<i>Not directly associated w/ watercourse. stream across dirt rd. from wetland.</i>
Degree of Function	High	Mod	

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input checked="" type="checkbox"/> Yes	No	<i>Golf course</i>
Fishing is available in or from the wetland	Yes	<input checked="" type="checkbox"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="checkbox"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="checkbox"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="checkbox"/> No	<i>Relatively small, adj. to golf course</i>

Wetland has high visual/aesthetic quality	Yes	<input type="checkbox"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="checkbox"/> No	
Off-road public parking near wetland available	<input type="checkbox"/> Yes	No	Golf course parking lot
Safety Hazards (if present list them)	<input type="checkbox"/> Yes	No	Edge of driving range
Function Present	<input type="checkbox"/> Yes	No	Not a likely area for recreation in wetland
Degree of Function	High	Mod	

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<input type="checkbox"/> Moderate to High	Altered by golf course development
Wetland fragmentation by development	Little or None	<input type="checkbox"/> Moderate to High	↓
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input type="checkbox"/> Yes	No	Forest to north, Mowed lawn to south.
Buffer width	Good to Excellent	<input type="checkbox"/> Fair to Poor	Wooded border
Connectivity with other wetlands	<input type="checkbox"/> Yes	No	Connected under dirt road to stream system
Size of landscape block in which wetland is located	<input type="checkbox"/> Large	Small	
Wildlife food sources in wetland	<input type="checkbox"/> Abundant	Few	
Interspersion of vegetation and open water	<input type="checkbox"/> High	Low	
Upland islands	Present	<input type="checkbox"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="checkbox"/> Low	Wet meadow
Vegetation density	<input type="checkbox"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Herbaceous
Wetland plant species diversity	<input type="checkbox"/> High Mod Low		
Vernal pool	Yes	<input type="checkbox"/> No	
Edge diversity (List types)			Lawn + forest
Water regime	<input type="checkbox"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="checkbox"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="checkbox"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="checkbox"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="checkbox"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="checkbox"/> Absent	
Abundance of invasive exotic flora	<input type="checkbox"/> None or Low	High	
Function Present	<input type="checkbox"/> Yes	No	Relatively small wetland, adjacent to driving range.
Degree of Function	High	<input type="checkbox"/> Mod	

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	Moderate
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest & mowed lawn
Off-road parking near wetland available	Yes		No	Golf course parking lot
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	Drains under dirt rd into ephemeral stream
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				Adj. to driving range
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	Golf balls
Low noise level	Yes		No	Near airfield
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="checkbox"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Mod	Mod	No	High	High	Mod	Low	Mod	No	No	Low	No

**SUMMARY OF FUNCTIONS**

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**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 272 Direction: N/NE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 77 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass
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<b>PFO / Wooded Swamp</b>	<b>Deciduous</b> Evergreen
Bog	Compact shrub Bushy shrub Wooded Emergent

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Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season,

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes **No**

if Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well **Moderately Well** Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle **Moderate** Steep

Upland Border:

Slope: Nearly level Gentle Moderate **Steep**

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs S Herbs S Grass

Soil: 10A - Udorthents - Croghan complex  
 ↓  
 Sandy



Leaf litter:  Well developed      Moderately well developed      Absent  
 Cover objects:  Logs      Bark      Boulders      Rocks  
 Evidence of Erosion:  No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-	Comments
Soils	<input checked="" type="checkbox"/> Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<input checked="" type="checkbox"/> Yes		No	
Slope	Gentle		<input checked="" type="checkbox"/> Moderate or Steep	
Function Present	<input checked="" type="checkbox"/> Yes	No		
Degree of Function	High	Mod	<input checked="" type="checkbox"/> Low	Moderately steep stream course

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-	Comments
Soils	Hardpan, shallow ledge			
Seeps, springs observed?	Yes		<input checked="" type="checkbox"/> No	
Wetland microrelief	Well developed		<input checked="" type="checkbox"/> Non/Poorly developed	
Wetland contains an outlet, no inlet	Yes		<input checked="" type="checkbox"/> No	
Function Present	Yes		<input checked="" type="checkbox"/> No	
Degree of Function	High	Mod	Low	Moderately steep stream course

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<input checked="" type="checkbox"/> Small		Narrow border along stream
Amount of impervious surface in wetland watershed	Large		<input checked="" type="checkbox"/> Small		
Wetland Slope	Gentle		<input checked="" type="checkbox"/> Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	<input checked="" type="checkbox"/> Yes		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<input checked="" type="checkbox"/> Yes		No		Golf course
Watershed has a history of economic loss due to flooding	Yes		No		Unknown
Wetland outlet restricted	Yes		<input checked="" type="checkbox"/> No		
Wetland vegetation density	High		<input checked="" type="checkbox"/> Low		
Wetland microrelief	Well developed		<input checked="" type="checkbox"/> None/Poorly developed		

Function Present	<input checked="" type="checkbox"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="checkbox"/> Low

*moderately steep stream w/ seasonal flow*

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<input checked="" type="checkbox"/> Yes	No	
Gravel spawning areas present	Yes	<input checked="" type="checkbox"/> No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<input checked="" type="checkbox"/> Yes	<i>Culverted downstream</i>
Dominant bottom substrate	Gravel/cobbles	<input checked="" type="checkbox"/> Sand/silt	
Substrate embeddedness by sand & silt	Low	<input checked="" type="checkbox"/> (High)	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<input checked="" type="checkbox"/> (Low)	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	<input checked="" type="checkbox"/> Stable	Unstable, eroding	
Bank vegetative cover	<input checked="" type="checkbox"/> High (trees, shrubs)	Low	<i>Forested</i>
Cover objects (fallen logs, boulders, undercut banks)	<input checked="" type="checkbox"/> Many	Absent/few	
Riparian zone	<input checked="" type="checkbox"/> Wide	Narrow	
Watershed development	Low	<input checked="" type="checkbox"/> (High)	<i>Golf course, airfield</i>
Water quality	<input checked="" type="checkbox"/> Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	<input checked="" type="checkbox"/> Yes	No	Relatively perm. watercourse, but high flow most likely seasonal & high precipitation events.
Degree of Function	High	Mod	

#### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	<input checked="" type="checkbox"/> Yes	No	Airfield
Duration of water retention in wetland	Long	<input checked="" type="checkbox"/> Short	
Evidence of sediment trapping in wetland	<input checked="" type="checkbox"/> Yes	Low	
Vegetation density	High	<input checked="" type="checkbox"/> No	
Wetland edge broad and intermittently aerobic	Yes	<input checked="" type="checkbox"/> Low	Narrow wetland border
Drainage ditches in wetland	<input checked="" type="checkbox"/> No	Yes	
Water flow through wetland	Diffuse	<input checked="" type="checkbox"/> Channelized	Stream course
Ponded water present	<input checked="" type="checkbox"/> Yes	No	
Wetland basin topographic gradient	<input checked="" type="checkbox"/> Low	High	
Fine grained mineral or organic soils present	<input checked="" type="checkbox"/> Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	<input checked="" type="checkbox"/> No	Water flow channelized w/in stream
Indicators of erosion or high water velocities are present	<input checked="" type="checkbox"/> No	Yes	
Function Present	<input checked="" type="checkbox"/> Yes	No	Moderate ability for sediment retention. Flow is seasonal & during high precipitation events
Degree of Function	High	<input checked="" type="checkbox"/> Mod	

#### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<input checked="" type="checkbox"/> Small	
Potential sources of excess nutrients upstream	Yes	<input checked="" type="checkbox"/> No	
Wetland is saturated most of the season	Yes	<input checked="" type="checkbox"/> No	
Emergent vegetation and/or dense woody stems are dominant	<input checked="" type="checkbox"/> Yes	No	
Water flow through wetland	Diffuse	<input checked="" type="checkbox"/> Channelized	
Vegetation density	High	<input checked="" type="checkbox"/> Low	
Potential for sediment trapping exists	<input checked="" type="checkbox"/> Yes	No	
Deep or open water habitat is present	Yes	<input checked="" type="checkbox"/> No	
Soil type	Organic/high clay content	<input checked="" type="checkbox"/> Sand/gravel	
Wetland basin topographic gradient	<input checked="" type="checkbox"/> Low	High	
Wetland microrelief	Well developed	<input checked="" type="checkbox"/> None, poorly developed	

Function Present	<input checked="" type="checkbox"/> Yes	No		No inputs of excess nutrients. Flow is seasonal or due to high precip. events.
Degree of Function	High	Mod	<input checked="" type="checkbox"/> Low	

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="checkbox"/> Few	
Vegetation density	High		<input checked="" type="checkbox"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="checkbox"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="checkbox"/> No	
Detritus development is present within this wetland	<input checked="" type="checkbox"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="checkbox"/> Yes		No	<i>Impatiens spp.</i>
Evidence of wildlife use in wetland	Yes		<input checked="" type="checkbox"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="checkbox"/> No	
Function Present	<input checked="" type="checkbox"/> Yes		No	
Degree of Function	High	<input checked="" type="checkbox"/> Mod	Low	

S&SS/SEDIMENT/SHORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="checkbox"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="checkbox"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="checkbox"/> No	<i>Narrow wetland border</i>
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="checkbox"/> Yes	
Open water fetch present	Yes		<input checked="" type="checkbox"/> No	
Boating activity present	Yes		<input checked="" type="checkbox"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="checkbox"/> Yes		No	
Indications of erosion or siltation present	<input checked="" type="checkbox"/> Yes		No	
Function Present	<input checked="" type="checkbox"/> Yes		No	
Degree of Function	High	<input checked="" type="checkbox"/> Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="checkbox"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="checkbox"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="checkbox"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="checkbox"/> No	
Wetland is a valuable wildlife habitat	Yes		No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input type="radio"/> No	
Function Present	Yes	<input type="radio"/> No	No public access.
Degree of Function	High	Mod	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<input type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	<input type="radio"/> Moderate to High	Separated from FA 76 by dirt road.
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input type="radio"/> Yes	No	Forest
Buffer width	<input type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input type="radio"/> Yes	No	Downstream & upstream
Size of landscape block in which wetland is located	<input type="radio"/> Large	Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> (Few)	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	<input type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="radio"/> Low	Wooded swamp.
Vegetation density	High	<input type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, herb, leaf litter
Wetland plant species diversity	High Mod <input type="radio"/> Low		Red maple, impatiens sp., sensitive fern
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	<input type="radio"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input type="radio"/> Abundant	Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input type="radio"/> Abundant	Few	Logs & branches
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input type="radio"/> None or Low	High	
Function Present	<input type="radio"/> Yes	No	
Degree of Function	High	<input type="radio"/> Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	Yes		No	Moderate
Wetland class diversity	High		(Low)	Forested stream edge
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin College
Wetland contains perennial watercourse	(Yes)		No	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	Yes		No	
Degree of Function	High	Mod	(Low)	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	Yes		(No)	Near airfield
Visual landuse contrast with wetland	(Yes)		No	
Function Present	(Yes)		No	No public access.
Degree of Function	High	Mod	(Low)	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	<input checked="" type="checkbox"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	Low	Low	Mod	Low	Mod	No	Mod	Low	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).



Photo #: 274 Direction: NE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 78 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>	<u>Evergreen</u>	<u>mixed forest</u>			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs S Herbs M Grass

Soil: wmc + wmd - windsor loamy sand





Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Runoff from road potentially
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	No sources of excess nutrients
Degree of Function	High	<input checked="" type="checkbox"/> Mod	

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="checkbox"/> Abundant		Few	
Vegetation density	<input checked="" type="checkbox"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="checkbox"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="checkbox"/> Yes		No	
Detritus development is present within this wetland	<input checked="" type="checkbox"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="checkbox"/> Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="checkbox"/> Yes		No	Birds insects
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="checkbox"/> No	
Function Present	<input checked="" type="checkbox"/> Yes		No	
Degree of Function	<input checked="" type="checkbox"/> High	Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="checkbox"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="checkbox"/> Yes		No	
Wetland border >10' adjacent to pond or water	<input checked="" type="checkbox"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="checkbox"/> Yes	
Open water fetch present	Yes		<input checked="" type="checkbox"/> No	
Boating activity present	Yes		<input checked="" type="checkbox"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="checkbox"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="checkbox"/> No	
Function Present	<input checked="" type="checkbox"/> Yes		No	
Degree of Function	High	<input checked="" type="checkbox"/> Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="checkbox"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="checkbox"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="checkbox"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="checkbox"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="checkbox"/> Yes		No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	No recreation in area.
Degree of Function	High	Mod	

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	Bordered by Roads/highway
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, Sapling, herb, leaf litter
Wetland plant species diversity	High Mod Low		Red maple, skunk cabbage, impatiens spp.
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	Wooded swamp
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	No public access
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Near roads + airfields
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	



Function Present	Yes	<input checked="" type="checkbox"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/High	No	Low	Mod	Mod	High	No	Mod	Low	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 275 Direction: N/NE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 79 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass
POW/ Open water	Vegetated Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody Shrub Sub-shrub Robust Narrow-leaved Broad-leaved
PAB/ Shallow Marsh	Robust Narrow-leaved Broad-leaved Floating leaved
PFL / Seasonally Flooded Flats	Emergent Shrub
PEM / Wet Meadow	Ungrazed Grazed
PSS / Shrub Swamp	Sapling Bushy Compact Aquatic
PFO / Wooded Swamp	Deciduous Evergreen
Bog	Compact shrub Bushy shrub Wooded Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves  
 stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees S Saplings D Shrubs M Herbs Grass

Soil: 27A - Lamoigne silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		<u>Golf course</u>
Watershed has a history of economic loss due to flooding	Yes		No		<u>Unknown</u>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No		No inputs
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	Nearly level
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	Yes		<input checked="" type="radio"/> No	
indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	Adj. to runway
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Lawn
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Shrub swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Sapling, tree, shrub, herb,
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**



Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest, lawn
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				Near airfield
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	Mod	No	Mod	Low	Low	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

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**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 276 Direction: E  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 80 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent			

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

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Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep Meadow Mowed lawn Farm

Cover Types: Mature forest Sapling forest Shrub thicket  
 Vegetation Density(S/M/D): Trees M Saplings D Shrubs D Herbs M Grass M

Soil: 29A - Haplagnents - Scantic complex

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes	No			
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<u>Few</u>	
Vegetation density	<u>High</u>		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		<u>No</u>	
Wetland has high degree of plant community structure and species diversity	Yes		<u>No</u>	
Detritus development is present within this wetland	Yes		<u>No</u>	
Flowering plants used by nectar gatherers present	<u>Yes</u>		No	
Evidence of wildlife use in wetland	Yes		<u>No</u>	
Fish or shellfish develop/occur in wetland	Yes		<u>No</u>	
Function Present	Yes		<u>No</u>	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes	<u>No</u>		
Potential sediment sources upstream or upslope	Yes	<u>No</u>		
Wetland border >10' adjacent to pond or water	Yes	<u>No</u>		
Distinct shoreline or bank evident between wetland and water	<u>No</u>	Yes		
Open water fetch present	Yes	<u>No</u>		
Boating activity present	Yes	<u>No</u>		
Floodplain stabilizing trees and shrubs present	Yes	<u>No</u>		
Indications of erosion or siltation present	Yes	<u>No</u>		
Function Present	Yes	<u>No</u>		
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<u>No</u>		
Fishing is available in or from the wetland	Yes	<u>No</u>		
Hunting is permitted in wetland	Yes	<u>No</u>		
Hiking occurs or has potential to occur in wetland	Yes	<u>No</u>		
Wetland is a valuable wildlife habitat	Yes	<u>No</u>		



Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> No	Next to airfield
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		-	Comments
Wetland degradation by human activity	Little or None		Moderate to High	
Wetland fragmentation by development	Little or None		Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes		<input checked="" type="radio"/> No	
Buffer width	Good to Excellent		Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes		No	
Size of landscape block in which wetland is located	Large		<input checked="" type="radio"/> Small	
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	High		<input checked="" type="radio"/> Low	
Upland islands	Present		<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High		<input checked="" type="radio"/> Low	PEN
Vegetation density	High		<input checked="" type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)				Herb
Wetland plant species diversity	High	Mod	<input checked="" type="radio"/> Low	
Vernal pool	Yes		<input checked="" type="radio"/> No	
Edge diversity (List types)				Forest, grassland, airfield
Water regime	<input checked="" type="radio"/> Wetter		Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant		<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant		<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present		<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present		<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present		<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	None or Low		<input checked="" type="radio"/> High	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input checked="" type="radio"/> No	
Wetland provides valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	
Wetland class diversity	High		<input checked="" type="radio"/> Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	<input checked="" type="radio"/> High		Low	Forest, grassland
Off-road parking near wetland available	Yes		<input checked="" type="radio"/> No	
Proximity to schools	<input checked="" type="radio"/> Near		Far	
Wetland contains perennial watercourse	Yes		<input checked="" type="radio"/> No	
Wetland contains pond/lake	Yes		<input checked="" type="radio"/> No	
Safety hazards (if present list them)				Next to airfield
Site currently used for educational/scientific purposes	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<input checked="" type="radio"/> No	
Wetland identified as exemplary natural community	Yes		<input checked="" type="radio"/> No	
Wetland locally/regionally significant	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		<input checked="" type="radio"/> No	
Views absent trash, debris, sign of degradation	Yes		<input checked="" type="radio"/> No	
Low noise level	Yes		<input checked="" type="radio"/> No	
Visual landuse contrast with wetland	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		<input checked="" type="radio"/> No	
Wetland contains critical habitat for state or federal listed species	Yes		<input checked="" type="radio"/> No	
Area appears in state or national database	Yes		<input checked="" type="radio"/> No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
low/no	No	No	Mod	No	No	No	No	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 277 Direction: NE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 81 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>	Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow.

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs Herbs Grass

Soil: Sn - Scantic silt loam

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<i>Unknown</i>
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	Moderate

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Off-road public parking near wetland available	Yes	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Safety Hazards (if present list them)	Yes	<input type="radio"/> Yes	<input type="radio"/> No
Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<input checked="" type="radio"/> Moderate to High	Culverted from under road
Wetland fragmentation by development	Little or None	<input checked="" type="radio"/> Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	Large	<input checked="" type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	<input checked="" type="radio"/> High	Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded Swamp
Vegetation density	High	<input checked="" type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, Sapling, herb, LL
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	<input checked="" type="radio"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input checked="" type="radio"/> Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input checked="" type="radio"/> Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	<input checked="" type="radio"/> Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	<input checked="" type="radio"/> Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	Moderate
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowling
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	(No)	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	Mod	No	Low	Low	No	No	Mod	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 278 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 82 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass	
POW/ Open water	Vegetated	Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody Shrub	Sub-shrub Robust Narrow-leaved Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved Broad-leaved Floating leaved
PFL / Seasonally Flooded Flats	Emergent	Shrub
PEM / Wet Meadow	Ungrazed	Grazed
PSS / Shrub Swamp	Sapling Bushy	Compact Aquatic
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>	Evergreen
Bog	Compact shrub Bushy shrub	Wooded Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings S Shrubs Herbs Grass

Soil: DeB - Deerfield loamy sand

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		<u>No</u>		
Wetland outlet restricted	Yes		No		<i>Isolated wetland</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	



Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input type="radio"/> No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<input type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input type="radio"/> Little or None	<input type="radio"/> Moderate to High	Possible connection w/ FA 73+74 before road
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	<input type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	<input type="radio"/> No	
Size of landscape block in which wetland is located	Large	<input type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> Few	
Interspersion of vegetation and open water	High	<input type="radio"/> Low	
Upland islands	Present	<input type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded Swamp
Vegetation density	High	<input type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, herb, U
Wetland plant species diversity	High Mod <input type="radio"/> Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input type="radio"/> Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
low/No	No	No	No	No	No	No	low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo: 279 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 83 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

**Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years**

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle **Moderate** Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** D **Saplings** M Shrubs Herbs Grass

Soil: **WuB - Windsor loamy sand**

Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		No		<i>Isolated</i>
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	<u>Yes</u>		No		<i>Isolated</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		



Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**-S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Road runoff
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NU'TRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="checkbox"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="checkbox"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&SS/SEDIMENT/SHORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	<input checked="" type="checkbox"/> No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="checkbox"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="checkbox"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="checkbox"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="checkbox"/> Yes	No	Potential
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="checkbox"/> No	

Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<input checked="" type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	<input checked="" type="radio"/> Moderate to High	Roadway cut it off from FA 72
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	Good to Excellent	<input checked="" type="radio"/> Fair to Poor	
Connectivity with other wetlands	Yes	<input checked="" type="radio"/> No	
Size of landscape block in which wetland is located	Large	<input checked="" type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Wooded swamp
Vegetation density	High	<input checked="" type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, shrub, herb, etc
Wetland plant species diversity	High <input checked="" type="radio"/> Mod Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	<input checked="" type="radio"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/NO	NO	NO	mod	Low	NO	NO	Low	NO	NO	NO	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 280 Direction: NE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 84 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings S Shrubs Herbs Grass

Soil: Wm B - Windsor loamy sand



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	<u>Yes</u>		No		
Degree of Function	High	Mod	<u>Low</u>		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		<u>No</u>		
Wetland outlet restricted	Yes		No		<i>Isolated</i>
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)**

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)**

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	No	
Fishing is available in or from the wetland	Yes	No	
Hunting is permitted in wetland	Yes	No	
Hiking occurs or has potential to occur in wetland	Yes	No	Potential
Wetland is a valuable wildlife habitat	Yes	No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	No	
Function Present	<del>Yes</del>	No	Potential
Degree of Function	High	Mod	

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest
Buffer width	Good to Excellent	<del>Fair to Poor</del>	
Connectivity with other wetlands	Yes	<del>No</del>	
Size of landscape block in which wetland is located	Large	<del>Small</del>	
Wildlife food sources in wetland	Abundant	<del>Few</del>	
Interspersion of vegetation and open water	<del>High</del>	Low	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Wooded swamp
Vegetation density	High	<del>Low</del>	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, herb, LL
Wetland plant species diversity	High <del>Mod</del> Low		
Vernal pool	<del>Yes</del>	No	TRC pool - IIA - vp
Edge diversity (List types)			
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<del>Abundant</del>	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<del>Abundant</del>	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	<del>Present</del>	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del>	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/Low	No	No	mod	mod	No	Low	mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 281 Direction: S  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 85 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Hydrology indicators: inundated saturated in upper 12" Water marks Drift lines

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs S Herbs Grass

Soil: 34c Tunbridge fine sandy loam



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		<i>unknown</i>
Wetland outlet restricted	Yes		No		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	Vernal pools
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	Yes	<input checked="" type="radio"/> No		
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No		
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes	No		
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes		
Open water fetch present	Yes	<input checked="" type="radio"/> No		
Boating activity present	Yes	<input checked="" type="radio"/> No		
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No		
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No		
Function Present	Yes	<input checked="" type="radio"/> No		
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No		
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No		
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No		
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No		Potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No		

Wetland has high visual/aesthetic quality	Yes		<del>No</del>	
Boating or canoeing feasible in wetland	Yes		<del>No</del>	
Off-road public parking near wetland available	Yes		<del>No</del>	
Safety Hazards (if present list them)	Yes		No	
Function Present	<del>Yes</del>		No	
Degree of Function	High	Mod	<del>Low</del>	Potential

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<del>Yes</del>	No	
Size of landscape block in which wetland is located	Large	<del>Small</del>	
Wildlife food sources in wetland	<del>Abundant</del>	Few	
Interspersion of vegetation and open water	<del>High</del>	Low	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	Wooded swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, Sapling, Shrub, herb, LL
Wetland plant species diversity	High <del>Mod</del> Low		
Vernal pool	<del>Yes</del>	No	TRC - Sig Vernal Pools - 19 + 20
Edge diversity (List types)			Forest
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<del>Abundant</del>	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<del>Abundant</del>	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	<del>High</del>	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	Potential
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/mod	Mod	No	Low	Low	Low	Low	High	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 282 Direction: NE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 86 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent			

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (H) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs Herbs Grass

Soil: Sn - Scantic



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	Mod	<u>Low</u>		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		-	Comments
Wetland degradation by human activity	Little or None		Moderate to High	
Wetland fragmentation by development	Little or None		Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes		No	Forest
Buffer width	Good to Excellent		Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes		No	
Size of landscape block in which wetland is located	Large		Small	
Wildlife food sources in wetland	Abundant		Few	
Interspersion of vegetation and open water	High		Low	
Upland islands	Present		Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High		Low	
Vegetation density	<input checked="" type="radio"/> High		Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)				Tree, Sapling, Herb, LL
Wetland plant species diversity	High	<input checked="" type="radio"/> Mod	Low	
Vernal pool	Yes		<input type="radio"/> No	
Edge diversity (List types)				
Water regime	Wetter		Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant		Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant		Few	
Flat rocks in/near watercourse (stream salamanders)	Present		Absent	
Sphagnum hummocks next to shallow pools	Present		Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present		Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low		High	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Low	Low	No	Low	No	Low	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 283 Direction: S  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 87 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>		Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent			

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

**Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years**

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow.

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Hydrology indicators: **Unaturated**

**Saturated in upper 12"**

Water marks

Drift lines

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees

Adventitious roots Rhizospheric oxidation Shallow root systems

Hypertrophied lenticels Stooling Inflated leaves

Floating leaves Floating stems

Soil Drainage classes: Well

Moderately Well

Somewhat Poorly

**Poorly**

Very Poorly

Mapped Hydric Soil

Slope: **Nearly level**

Gentle

Moderate

Steep

Upland Border:

Slope: Nearly level Gentle **Moderate** Steep

Cover Types: **Mature forest** Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): **Trees** Saplings Shrubs Herbs Grass

Soil: 29A - Haplagnents - Scantic Complex



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Airfield runoff
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		<input type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		<input type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	Significant vernal pool
Fish or shellfish develop/occur in wetland	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input checked="" type="radio"/> Mod	<input type="radio"/> Low	

S&SS/SEDIMENT/SHORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input type="radio"/> No		<input type="radio"/> Yes	
Open water fetch present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Boating activity present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input type="radio"/> Yes		<input type="radio"/> No	
indications of erosion or siltation present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input type="radio"/> Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	Potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		<input type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	No	
Function Present	<del>Yes</del>	No	Potential
Degree of Function	High	Mod	

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Forest
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	<del>Yes</del>	No	
Size of landscape block in which wetland is located	Large	<del>Small</del>	
Wildlife food sources in wetland	<del>Abundant</del>	Few	
Interspersion of vegetation and open water	High	<del>Low</del>	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	wooded swamp
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			
Wetland plant species diversity	High <del>Mod</del> Low		
Vernal pool	<del>Yes</del>	No	Sig Vernal Pool #8 (TRC)
Edge diversity (List types)			
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<del>Abundant</del>	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<del>Abundant</del>	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	Potential
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/No	Mod	No	Mod	Low	Mod	Low	High	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

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**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 284 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 88 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
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Permanently flooded (H) - water covers land surface throughout year in all years

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Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs M Herbs D Grass D

Soil: 29A - Haplagnents - Scantic Complex



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		Airfield
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		No		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	Airfield runoff
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No		No inputs
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes	No	Birds
Fish or shellfish develop/occur in wetland	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes	<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	Adj. to airfield
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+		Comments
Wetland degradation by human activity	Little or None	<input type="radio"/> Moderate to High	
Wetland fragmentation by development	Little or None	<input type="radio"/> Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input type="radio"/> Yes	No	Shrubs, grassland
Buffer width	Good to Excellent	<input type="radio"/> Fair to Poor	
Connectivity with other wetlands	<input type="radio"/> Yes	No	
Size of landscape block in which wetland is located	Large	<input type="radio"/> Small	
Wildlife food sources in wetland	<input type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	High	<input type="radio"/> Low	
Upland islands	Present	<input type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Shrub swamp
Vegetation density	<input type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LI=Leaf litter)			Shrub, Herb, LI
Wetland plant species diversity	High <input type="radio"/> Mod Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			Shrubs, grassland
Water regime	Wetter	<input type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input type="radio"/> None or Low	High	
Function Present	<input type="radio"/> Yes	No	
Degree of Function	High	Mod	<input type="radio"/> Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Shrubs, grassland
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				Adj. to airfield
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/No	Low	No	High	Low	Mod	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 285 Direction: N  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 89 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass	
POW/ Open water	Vegetated	Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody Shrub Sub-shrub	Robust Narrow-leaved Broad-leaved
PAB/ Shallow Marsh	Robust Narrow-leaved Broad-leaved	Floating leaved
PFL / Seasonally Flooded Flats	Emergent	Shrub
<b>PEM / Wet Meadow</b>	<b>Ungrazed</b>	Grazed
PSS / Shrub Swamp	Sapling Bushy	Compact Aquatic
PFO / Wooded Swamp	Deciduous	Evergreen
Bog	Compact shrub Bushy shrub	Wooded Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly **Poorly** Very Poorly Mapped Hydric Soil

Slope: Nearly level **Gentle** Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: Mature forest Sapling forest **Shrub thicket** Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings **Shrubs** D **Herbs** D **Grass** D

Soil: 29A - Haplaquepts - Scantic complex



Leaf litter: Well developed      Moderately well developed      Absent  
 Cover objects: Logs      Bark      Boulders      Rocks  
 Evidence of Erosion: No      Yes      (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		<i>Airfield</i>
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		<input type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		<input type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	Birds
Fish or shellfish develop/occur in wetland	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input checked="" type="radio"/> Mod	<input type="radio"/> Low	

S&SS/SEDIMENT/SHORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input type="radio"/> No		<input type="radio"/> Yes	
Open water fetch present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Boating activity present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Indications of erosion or siltation present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input type="radio"/> Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input type="radio"/> Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	<input checked="" type="radio"/> Yes	No	Adj. to airfield
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	<input checked="" type="radio"/> Moderate to High	
Wetland fragmentation by development	Little or None	<input checked="" type="radio"/> Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	grassland, shrub
Buffer width	Good to Excellent	<input checked="" type="radio"/> Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	Large	<input checked="" type="radio"/> Small	
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	PEM
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Shrub, herb
Wetland plant species diversity	High <input checked="" type="radio"/> Mod Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Grasslands, Shrub
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/Mod	Mod	No	Low	Low	Mod	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 286 Direction: SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 90 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic			
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>		Evergreen				
Bog	Compact shrub		Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees M Saplings M Shrubs Herbs Grass

Soil: 34B - Tunbridge fine sandy loam



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

S&SS/SEDIMENT/SHORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	<input checked="" type="radio"/> Yes	No	Adj. to airport
Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<input checked="" type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input checked="" type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	
Buffer width	Good to Excellent	<input checked="" type="radio"/> Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	Large	<input checked="" type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input checked="" type="radio"/> Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	wooded
Vegetation density	High	<input checked="" type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			T, S, SH, H, LL
Wetland plant species diversity	High Mod <input checked="" type="radio"/> Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	No	No	Mod	Low	Low	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 287 Direction: SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 91 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
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PFL / Seasonally Flooded Flats	Emergent		Shrub			
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PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

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Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees u Saplings S Shrubs Herbs Grass

Soil: S2 - Swanton fine sandy loam



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	<u>Yes</u>		No		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	



Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<u>Little or None</u>	Moderate to High	
Wetland fragmentation by development	Little or None	<u>Moderate to High</u>	<i>Edges of road</i>
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<u>Yes</u>	No	
Buffer width	Good to Excellent	<u>Fair to Poor</u>	
Connectivity with other wetlands	Yes	<u>No</u>	
Size of landscape block in which wetland is located	Large	<u>Small</u>	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	<u>Low</u>	
Upland islands	Present	<u>Absent</u>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	<i>Wooded swamp</i>
Vegetation density	<u>High</u>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			<i>Tree, Shrub, herb, LL</i>
Wetland plant species diversity	High Mod <u>Low</u>		
Vernal pool	Yes	<u>No</u>	
Edge diversity (List types)			
Water regime	<u>Wetter</u>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<u>Few</u>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<u>Few</u>	
Flat rocks in/near watercourse (stream salamanders)	Present	<u>Absent</u>	
Sphagnum hummocks next to shallow pools	Present	<u>Absent</u>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<u>Absent</u>	
Abundance of invasive exotic flora	<u>None or Low</u>	High	
Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	Yes		(No)	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	(Yes)		(No)	
Views absent trash, debris, sign of degradation	Yes		(No)	
Low noise level	Yes		(No)	
Visual landuse contrast with wetland	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	(Low)	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	(No)	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Low/No	Low	No	Mod	Low	No	No	Low	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 288 Direction: NW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 92 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<u>PSS / Shrub Swamp</u>	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs M Grass D

Soil: S2 - swanton fine sandy loam



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		<u>No</u>		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	<u>Yes</u>		No		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION *Isolated***

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<u>No</u>	
Fishing is available in or from the wetland	Yes		<u>No</u>	
Hunting is permitted in wetland	Yes		<u>No</u>	
Hiking occurs or has potential to occur in wetland	Yes		<u>No</u>	
Wetland is a valuable wildlife habitat	Yes		<u>No</u>	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input type="radio"/> No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+		Comments
Wetland degradation by human activity	Little or None	<input type="radio"/> Moderate to High	
Wetland fragmentation by development	Little or None	<input type="radio"/> Moderate to High	Road adj to wetland
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	grassland
Buffer width	Good to Excellent	<input type="radio"/> Fair to Poor	
Connectivity with other wetlands	Yes	<input type="radio"/> No	
Size of landscape block in which wetland is located	Large	<input type="radio"/> Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> Few	
Interspersion of vegetation and open water	High	<input type="radio"/> Low	
Upland islands	Present	<input type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="radio"/> Low	Shrub swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Sh, H,
Wetland plant species diversity	High <input checked="" type="radio"/> Mod Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			
Water regime	Wetter	<input type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Grassland
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/No	Low	No	Low	No	No	No	No	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 289 Direction: W  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 93 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass						
POW/ Open water	Vegetated			Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved	
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved			
PFL / Seasonally Flooded Flats	Emergent		Shrub				
PEM / Wet Meadow	Ungrazed		Grazed				
<u>PSS / Shrub Swamp</u>	Sapling	Bushy	<u>Compact</u>	Aquatic			
PFO / Wooded Swamp	Deciduous		Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded		Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs Grass D

Soil: 22B - Adams-Lyman Complex



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	Mod	<u>Low</u>		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	<u>Yes</u>		No		
Degree of Function	High	Mod	<u>Low</u>		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	<u>Large</u>		Small		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	<u>Yes</u>		No		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes	No	
Wetland has high degree of plant community structure and species diversity	Yes	No	
Detritus development is present within this wetland	Yes	No	
Flowering plants used by nectar gatherers present	Yes	No	
Evidence of wildlife use in wetland	Yes	No	
Fish or shellfish develop/occur in wetland	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&SS/SEDIMENT/ShORELINE STABILIZATION** *Isolated*

Criteria	+	-	Comments
Topographical gradient in wetland	Yes	No	
Potential sediment sources upstream or upslope	Yes	No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	No	Yes	
Open water fetch present	Yes	No	
Boating activity present	Yes	No	
Floodplain stabilizing trees and shrubs present	Yes	No	
Indications of erosion or siltation present	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**REC/RECREATION**

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	
Wetland is a valuable wildlife habitat	Yes	<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	<del>Yes</del>	No	
Degree of Function	High	Mod	<del>Low</del>

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<del>Little or None</del>	Moderate to High	
Wetland fragmentation by development	<del>Little or None</del>	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<del>Yes</del>	No	Grassland, shrubs
Buffer width	<del>Good to Excellent</del>	Fair to Poor	
Connectivity with other wetlands	Yes	<del>No</del>	
Size of landscape block in which wetland is located	Large	<del>Small</del>	
Wildlife food sources in wetland	<del>Abundant</del>	Few	
Interspersion of vegetation and open water	<del>High</del>	Low	
Upland islands	Present	<del>Absent</del>	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<del>Low</del>	SS
Vegetation density	<del>High</del>	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			SH, H,
Wetland plant species diversity	High <del>Mod</del> Low		
Vernal pool	Yes	<del>No</del>	
Edge diversity (List types)			
Water regime	<del>Wetter</del>	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<del>Few</del>	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<del>Few</del>	
Flat rocks in/near watercourse (stream salamanders)	Present	<del>Absent</del>	
Sphagnum hummocks next to shallow pools	Present	<del>Absent</del>	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<del>Absent</del>	
Abundance of invasive exotic flora	<del>None or Low</del>	High	
Function Present	<del>Yes</del>	No	
Degree of Function	High	<del>Mod</del> Low	

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Shrubs, grassland
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
low/low	low	NO	mod	low	No	low	mod	No	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

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**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 290 Direction: NE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 94 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<u>PSS / Shrub Swamp</u>	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees  
 stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees D Saplings M Shrubs Herbs Grass

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Sediment deposits Drainage patterns within wetlands Other

Hypertrophied lenticels Stooling Inflated leaves  
 Floating leaves Floating stems

Very Poorly Mapped Hydric Soil

Soil: 25A - Adams loamy fine sand.



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u>	No			
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		No		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream) *Seasonal*

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+	-	Comments
Wildlife food sources in wetland	Abundant	Few	
Vegetation density	High	Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes	No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes	No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes	No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes	No	
Evidence of wildlife use in wetland	Yes	<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+	-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes	No	
Potential sediment sources upstream or upslope	Yes	<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes	No	
Distinct shoreline or bank evident between wetland and water	<input checked="" type="radio"/> No	Yes	
Open water fetch present	Yes	<input checked="" type="radio"/> No	
Boating activity present	Yes	<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes	No	
Indications of erosion or siltation present	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

REC/RECREATION

Criteria	+	-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes	<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes	<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes	<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes	No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes	No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low Potential

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	<input checked="" type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input checked="" type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Forest
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large	Small	
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	<input checked="" type="radio"/> High	Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Wooded swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, shrub, herb, LL
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			
Water regime	<input checked="" type="radio"/> Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input checked="" type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input checked="" type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	<input checked="" type="radio"/> Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	(Yes)		No	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Forest
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin
Wetland contains perennial watercourse	Yes		(No)	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	(Yes)		No	
Low noise level	Yes		(No)	
Visual landuse contrast with wetland	(Yes)		No	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes			(No)
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Mod	Mod	No	Low	Low	Mod	Low	Mod	Low	No	Low	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

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**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 291 Direction: S/SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 95 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking   
 Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated		Non-Vegetated			
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
<u>PFO / Wooded Swamp</u>	<u>Deciduous</u>	Evergreen				
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years  
 Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought  
 Semi-permanently flooded (F) - surface water persists throughout growing season in most years  
 Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity~

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees Saplings M Shrubs Herbs Grass

Soil: Au - Au Gres loamy sand



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	High		<u>Low</u>		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<u>Yes</u>	No	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	<u>No</u>	Yes	
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<u>Low</u>	
Channel alterations (channelization, islands or point bars)	Absent or Few	<u>Numerous</u>	
Bank stability	<u>Stable</u>	Unstable, eroding	
Bank vegetative cover	<u>High (trees shrubs)</u>	Low	
Cover objects (fallen logs, boulders, undercut banks)	<u>Many</u>	Absent/few	
Riparian zone	<u>Wide</u>	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	<u>Unknown</u>

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	<u>Yes</u>	No	
Degree of Function	High	Mod	<u>Low</u>

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	<u>No</u>	
Duration of water retention in wetland	Long	<u>Short</u>	
Evidence of sediment trapping in wetland	Yes	<u>Low</u>	
Vegetation density	High	<u>No</u>	
Wetland edge broad and intermittently aerobic	Yes	<u>Low</u>	
Drainage ditches in wetland	<u>No</u>	Yes	
Water flow through wetland	<u>Diffuse</u>	Channelized	
Ponded water present	Yes	<u>No</u>	
Wetland basin topographic gradient	<u>Low</u>	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	<u>No</u>	
Indicators of erosion or high water velocities are present	<u>No</u>	Yes	
Function Present	Yes	<u>No</u>	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Potential sources of excess nutrients upstream	Yes	<u>No</u>	
Wetland is saturated most of the season	Yes	<u>No</u>	
Emergent vegetation and/or dense woody stems are dominant	Yes	<u>No</u>	
Water flow through wetland	<u>Diffuse</u>	Channelized	
Vegetation density	High	<u>Low</u>	
Potential for sediment trapping exists	Yes	<u>No</u>	
Deep or open water habitat is present	Yes	<u>No</u>	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	<u>Low</u>	High	
Wetland microrelief	Well developed	<u>None, poorly developed</u>	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		No	
Flowering plants used by nectar gatherers present	Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		No	
Potential sediment sources upstream or upslope	Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	Potential
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input type="radio"/> No	
Off-road public parking near wetland available	Yes	<input type="radio"/> No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	<input type="radio"/> No	
Degree of Function	High	Mod	Low

**WLH/WILDLIFE HABITAT**

Criteria	+	-	Comments
Wetland degradation by human activity	<input type="radio"/> Little or None	Moderate to High	
Wetland fragmentation by development	<input type="radio"/> Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input type="radio"/> Yes	No	Forest
Buffer width	<input type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input type="radio"/> Yes	No	
Size of landscape block in which wetland is located	<input type="radio"/> Large	Small	
Wildlife food sources in wetland	Abundant	<input type="radio"/> Few	
Interspersion of vegetation and open water	High	<input type="radio"/> Low	
Upland islands	Present	<input type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input type="radio"/> Low	Wooded swamp
Vegetation density	High	<input type="radio"/> Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, herb, LL
Wetland plant species diversity	High Mod <input type="radio"/> Low		
Vernal pool	Yes	<input type="radio"/> No	
Edge diversity (List types)			Forest
Water regime	Wetter	<input type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	<input type="radio"/> Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	<input type="radio"/> Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input type="radio"/> Absent	
Abundance of invasive exotic flora	<input type="radio"/> None or Low	High	
Function Present	<input type="radio"/> Yes	No	
Degree of Function	High	Mod	<input type="radio"/> Low

**E&SV/EDUCATIONAL/SCIENTIFIC VALUE**

Criteria	+		-	Comments
Wetland contains listed species	Yes		<del>No</del>	
Wetland provides valuable wildlife habitat	Yes		<del>No</del>	
Wetland class diversity	High		<del>Low</del>	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		<del>Low</del>	Forest
Off-road parking near wetland available	Yes		<del>No</del>	
Proximity to schools	<del>Near</del>		Far	Bowdoin
Wetland contains perennial watercourse	<del>Yes</del>		No	
Wetland contains pond/lake	Yes		<del>No</del>	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		<del>No</del>	
Function Present	<del>Yes</del>		No	
Degree of Function	High	Mod	<del>Low</del>	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		<del>No</del>	
Wetland identified as exemplary natural community	Yes		<del>No</del>	
Wetland locally/regionally significant	Yes		<del>No</del>	
Function Present	Yes		<del>No</del>	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		<del>No</del>	
Views absent trash, debris, sign of degradation	<del>Yes</del>		No	
Low noise level	Yes		<del>No</del>	
Visual landuse contrast with wetland	<del>Yes</del>		No	
Function Present	<del>Yes</del>		No	
Degree of Function	High	Mod	<del>Low</del>	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		<del>No</del>	
Wetland contains critical habitat for state or federal listed species	Yes		<del>No</del>	
Area appears in state or national database	Yes		<del>No</del>	

Function Present	Yes			No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Low	Low	No	No	No	No	Low	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

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**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 292 Direction: SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 96 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
<b>PEM / Wet Meadow</b>	<b>Ungrazed</b>	Grazed	<i>Maintained by mowing</i>			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

**Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years**

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Hydrology indicators: **Inundated** **Saturated in upper 12"** Water marks Drift lines

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Sediment deposits **Drainage patterns within wetlands** Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Well** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: **Nearly level** Gentle Moderate Steep

Upland Border:

Slope: **Nearly level** Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow **Mowed lawn** Farm

Vegetation Density(S/M/D): Trees Saplings Shrubs Herbs **Grass** **D**

Soil: WmB - Windsor loamy sand



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		<u>No</u>		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	<u>Yes</u>		No		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	<u>Mod</u>	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	Yes		<input checked="" type="radio"/> No	
Flowering plants used by nectar gatherers present	Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	<input checked="" type="radio"/> Yes		No	TRE Vernal Pools
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	

Wetland has high visual/aesthetic quality	Yes	<del>No</del>	
Boating or canoeing feasible in wetland	Yes	<del>No</del>	
Off-road public parking near wetland available	Yes	<del>No</del>	
Safety Hazards (if present list them)	Yes	<del>No</del>	
Function Present	Yes	<del>No</del>	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	wm
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Herb
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	TEC Pool 29B + 29C VPs Maintained grass
Edge diversity (List types)			
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	Vernal pools
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	lowed grass
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes	<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/mod	Mod	No	Mod	mod	Low	No	Mod	Low	No	No	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

4294  
 Photo #: 293 Direction: SE  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 97498 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
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PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
<b>PSS / Shrub Swamp</b>	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity--

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated **Saturated in upper 12** Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves  
 stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: **Wet** Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level **Gentle** Moderate Steep

Upland Border:

Slope: Nearly level **Gentle** Moderate Steep

Cover Types: Mature forest **Sapling forest** **Shrub thicket** Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees **Saplings** **Shrubs** Herbs Grass

Soil: 25A - Adams loamy fine sand.



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>		No		
Slope	<u>Gentle</u>		Moderate or Steep		
Function Present	<u>Yes</u> No				
Degree of Function	High	<u>Mod</u>	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	<u>Well developed</u>		Non/Poorly developed		
Wetland contains an outlet, no inlet	<u>Yes</u>		No		
Function Present	<u>Yes</u>		No		
Degree of Function	High	Mod	<u>Low</u>		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	<u>Gentle</u>		Moderate	Steep	
Wetland characterized by variable water level?	Yes		<u>No</u>		
Wetland in floodplain of adjacent watercourse	<u>Yes</u>		No		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>		No		
Watershed has a history of economic loss due to flooding	Yes		No		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	<u>Well developed</u>		None/Poorly developed		

Function Present	<u>Yes</u>	No	
Degree of Function	High	<u>Mod</u>	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size ≥ 0.5 acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	<u>No</u>	
Gravel spawning areas present	Yes	<u>No</u>	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	<u>Yes</u>	
Dominant bottom substrate	Gravel/cobbles	<u>Sand/silt</u>	
Substrate embeddedness by sand & silt	Low	<u>High</u>	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<u>Low</u>	
Channel alterations (channelization, islands or point bars)	Absent or Few	<u>Numerous</u>	
Bank stability	<u>Stable</u>	Unstable, eroding	
Bank vegetative cover	<u>High</u> (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	<u>Many</u>	Absent/few	
Riparian zone	<u>Wide</u>	Narrow	
Watershed development	Low	<u>High</u>	
Water quality	Good	Poor	<i>Unknown</i>

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Un known
Function Present	Yes	No	
Degree of Function	High	Mod	Low
			Cultivated

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+		-	Comments
Sources of sediments or toxicants upstream	Yes		No	
Duration of water retention in wetland	Long		Short	
Evidence of sediment trapping in wetland	Yes		Low	
Vegetation density	High		No	
Wetland edge broad and intermittently aerobic	Yes		Low	
Drainage ditches in wetland	No		Yes	
Water flow through wetland	Diffuse		Channelized	
Ponded water present	Yes		No	
Wetland basin topographic gradient	Low		High	
Fine grained mineral or organic soils present	Yes		No	
Watercourse, if present, has visible velocity decreases in wetland	Yes		No	
Indicators of erosion or high water velocities are present	No		Yes	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+		-	Comments
Wetland size in relation to watershed	Large		Small	
Potential sources of excess nutrients upstream	Yes		No	
Wetland is saturated most of the season	Yes		No	
Emergent vegetation and/or dense woody stems are dominant	Yes		No	
Water flow through wetland	Diffuse		Channelized	
Vegetation density	High		Low	
Potential for sediment trapping exists	Yes		No	
Deep or open water habitat is present	Yes		No	
Soil type	Organic/high clay content		Sand/gravel	
Wetland basin topographic gradient	Low		High	
Wetland microrelief	Well developed		None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input type="radio"/> Mod	<input checked="" type="radio"/> Low

**PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)**

Criteria	+		-	Comments
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant		<input type="radio"/> Few	
Vegetation density	<input checked="" type="radio"/> High		<input type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Evidence of wildlife use in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input checked="" type="radio"/> Mod	<input type="radio"/> Low	

**S&SS/SEDIMENT/ShORELINE STABILIZATION**

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Potential sediment sources upstream or upslope	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Wetland border >10' adjacent to pond or water	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	<input type="radio"/> No		<input checked="" type="radio"/> Yes	
Open water fetch present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Boating activity present	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Indications of erosion or siltation present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input type="radio"/> No	
Degree of Function	<input type="radio"/> High	<input checked="" type="radio"/> Mod	<input type="radio"/> Low	

**REC/RECREATION**

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	<input type="radio"/> Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		<input type="radio"/> No	Potential
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		<input type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	<input checked="" type="radio"/> No	
Boating or canoeing feasible in wetland	Yes	<input checked="" type="radio"/> No	
Off-road public parking near wetland available	Yes	<input checked="" type="radio"/> No	
Safety Hazards (if present list them)	Yes	<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes	No	Potential
Degree of Function	High	Mod	

#### WLH/WILDLIFE HABITAT

Criteria	+		Comments
Wetland degradation by human activity	Little or None	<input checked="" type="radio"/> Moderate to High	
Wetland fragmentation by development	Little or None	<input checked="" type="radio"/> Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	<input checked="" type="radio"/> Yes	No	Shrubs
Buffer width	<input checked="" type="radio"/> Good to Excellent	Fair to Poor	
Connectivity with other wetlands	<input checked="" type="radio"/> Yes	No	
Size of landscape block in which wetland is located	<input checked="" type="radio"/> Large	Small	
Wildlife food sources in wetland	<input checked="" type="radio"/> Abundant	Few	
Interspersion of vegetation and open water	High	<input checked="" type="radio"/> Low	
Upland islands	Present	<input checked="" type="radio"/> Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	<input checked="" type="radio"/> Low	Shrub swamp
Vegetation density	<input checked="" type="radio"/> High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, shrub, sapling, herb,
Wetland plant species diversity	High <input checked="" type="radio"/> Mod Low		
Vernal pool	Yes	<input checked="" type="radio"/> No	
Edge diversity (List types)			Shrubs
Water regime	Wetter	<input checked="" type="radio"/> Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	<input checked="" type="radio"/> Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	<input checked="" type="radio"/> Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	<input checked="" type="radio"/> Absent	
Sphagnum hummocks next to shallow pools	Present	<input checked="" type="radio"/> Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	<input checked="" type="radio"/> Absent	
Abundance of invasive exotic flora	<input checked="" type="radio"/> None or Low	High	
Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland provides valuable wildlife habitat	(Yes)		No	
Wetland class diversity	High		(Low)	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		(Low)	Shrub thicket
Off-road parking near wetland available	Yes		(No)	
Proximity to schools	(Near)		Far	Bowdoin
Wetland contains perennial watercourse	(Yes)		No	
Wetland contains pond/lake	Yes		(No)	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		(No)	
Function Present	(Yes)		No	
Degree of Function	High	Mod	(Low)	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		(No)	
Wetland identified as exemplary natural community	Yes		(No)	
Wetland locally/regionally significant	Yes		(No)	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		(No)	
Views absent trash, debris, sign of degradation	Yes		(No)	
Low noise level	Yes		(No)	
Visual landuse contrast with wetland	(Yes)		No	
Function Present	Yes		(No)	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		(No)	
Wetland contains critical habitat for state or federal listed species	Yes		(No)	
Area appears in state or national database	Yes		(No)	

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Low	Mod	Low	Low	Low	Mod	Low	Mod	Low	No	Mod	No

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 295 Direction: NW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 99 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodstine & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass					
POW/ Open water	Vegetated			Non-Vegetated		
PEM/PSS Deep Marsh	Dead Woody	Shrub	Sub-shrub	Robust	Narrow-leaved	Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved	Broad-leaved	Floating leaved		
PFL / Seasonally Flooded Flats	Emergent		Shrub			
PEM / Wet Meadow	Ungrazed		Grazed			
PSS / Shrub Swamp	Sapling	Bushy	Compact	Aquatic		
PFO / Wooded Swamp	Deciduous		Evergreen			
Bog	Compact shrub	Bushy shrub	Wooded	Emergent		

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present: Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated Saturated in upper 12" Water marks Drift lines Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Polymorphic leaves Buttressed trees Hypertrophied lenticels Stooling Inflated leaves, stems, or roots Adventitious roots Rhizospheric oxidation Shallow root systems Floating leaves Floating stems

Soil Drainage classes: Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope: Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate Steep

Cover Types: Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees S Saplings S Shrubs D Herbs Grass

Soil: 10B - Udorthents - Croghan complex



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Soils	Sand/gravel outwash		Hardpan, tight fine-grained soils, shallow ledge		
Wetland associated w/ perennial or seasonal watercourse	Yes		<u>No</u>		
Slope	Gentle		<u>Moderate or Steep</u>		
Function Present	Yes <u>No</u>				
Degree of Function	High	Mod	Low		

**GWD/GROUNDWATER DISCHARGE**

Criteria	+		-		Comments
Soils	Hardpan, shallow ledge				
Seeps, springs observed?	Yes		<u>No</u>		
Wetland microrelief	Well developed		<u>Non/Poorly developed</u>		
Wetland contains an outlet, no inlet	Yes		<u>No</u>		
Function Present	Yes		<u>No</u>		
Degree of Function	High	Mod	Low		

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+		-		Comments
Wetland size in relation to watershed	Large		<u>Small</u>		
Amount of impervious surface in wetland watershed	Large		<u>Small</u>		
Wetland Slope	Gentle		<u>Moderate</u>	Steep	
Wetland characterized by variable water level?	<u>Yes</u>		No		
Wetland in floodplain of adjacent watercourse	Yes		<u>No</u>		
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	Yes		No		
Watershed has a history of economic loss due to flooding	Yes		<u>No</u>		
Wetland outlet restricted	Yes		<u>No</u>		
Wetland vegetation density	<u>High</u>		Low		
Wetland microrelief	Well developed		<u>None/Poorly developed</u>		

Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: POND & LAKE** (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**F&SH/FINFISH HABITAT: STREAMS/RIVERS** (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	Yes	No	
Gravel spawning areas present	Yes	No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	No	Yes	
Dominant bottom substrate	Gravel/cobbles	Sand/silt	
Substrate embeddedness by sand & silt	Low	High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	Low	
Channel alterations (channelization, islands or point bars)	Absent or Few	Numerous	
Bank stability	Stable	Unstable, eroding	
Bank vegetative cover	High (trees, shrubs)	Low	
Cover objects (fallen logs, boulders, undercut banks)	Many	Absent/few	
Riparian zone	Wide	Narrow	
Watershed development	Low	High	
Water quality	Good	Poor	

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION**

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

**N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	<input checked="" type="radio"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="radio"/> Low

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		Few	
Vegetation density	High		Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	Yes		No	
Wetland has high degree of plant community structure and species diversity	Yes		No	
Detritus development is present within this wetland	Yes		No	
Flowering plants used by nectar gatherers present	Yes		No	
Evidence of wildlife use in wetland	Yes		No	
Fish or shellfish develop/occur in wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

*Isolated*

Criteria	+		-	Comments
Topographical gradient in wetland	Yes		No	
Potential sediment sources upstream or upslope	Yes		No	
Wetland border >10' adjacent to pond or water	Yes		No	
Distinct shoreline or bank evident between wetland and water	No		Yes	
Open water fetch present	Yes		No	
Boating activity present	Yes		No	
Floodplain stabilizing trees and shrubs present	Yes		No	
Indications of erosion or siltation present	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	<input checked="" type="radio"/> Yes		No	
Wetland is a valuable wildlife habitat	<input checked="" type="radio"/> Yes		No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	S
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	SS, OW
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			T, S, SH, H
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Shrub thicket + Forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

#### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	F, S
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			<input checked="" type="radio"/> No
Degree of Function	High	Mod	Low	

**CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)**

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
No/No	No	mod	low	low	No	Mod	mod	low	No	NO	NO

**SUMMARY OF FUNCTIONS**

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

Photo #: 296 Direction: SW  
 MODIFIED FUNCTIONS AND VALUES ASSESSMENT

Project Name: Brunswick NAS Wet Id#: FA 100 Date: N/A Functional Unit: Weather: N/A Time Start: N/A Time Stop: N/A  
 Site Investigator: Amy Goodline & Chris Akios Recent Precipitation: N/A Below average  Average  Above Average  Don't Know  TBD   
 Wildlife Investigation Method: Cover search  Dip netting  Auditory  Scat  Tracks  Minnow Traps  Electro-shocking

Wetland Types(s) Cowardin/Golet Classification

Class	Subclass	
POW/ Open water	Vegetated	Non-Vegetated
PEM/PSS Deep Marsh	Dead Woody Shrub	Sub-shrub Robust Narrow-leaved Broad-leaved
PAB/ Shallow Marsh	Robust	Narrow-leaved Broad-leaved Floating leaved
PFL / Seasonally Flooded Flats	Emergent	Shrub
PEM / Wet Meadow	Ungrazed	Grazed
PSS / Shrub Swamp	Sapling Bushy	Compact Aquatic
<b>PFO / Wooded Swamp</b>	<b>Deciduous</b>	Evergreen
Bog	Compact shrub Bushy shrub	Wooded Emergent

Water Regimes (Cowardin Modifier):

Permanently flooded (H) - water covers land surface throughout year in all years

Intermittently Exposed (Z) - surface water present throughout the year except in years of extreme drought

Semi-permanently flooded (F) - surface water persists throughout growing season in most years

Seasonally flooded (C) - surface water present for extended periods especially early in growing season, but is absent by end of season in most years

Seasonally saturated (Y) - soils saturated to surface, especially early in growing season, but are unsaturated by end of season in most years; surface water absent except for ground water seepage and overland flow

Temporarily flooded (A) - surface water present for brief periods during growing season, but water table usually lies well below soil surface for most of the season

Intermittently flooded (J) - substrate usually exposed, but surface water is present for variable periods without detectable seasonal periodicity-

Artificially flooded (K) - amount/duration of flooding controlled by dikes dams, pumps, etc

Hydrology:

Ground water discharges present:  Yes No

If Present: Slope or Depressional

Surface water depth: average - maximum -

Depth to free water:

Depth to saturation:

Signs of altered hydrology? Yes No

Hydrology indicators: Inundated  Saturated in upper 12"  Water marks  Drift lines

Sediment deposits Drainage patterns within wetlands Other

Plant Adaptations to Hydrology: Pneumatophores Adventitious roots Rhizospheric oxidation Polymorphic leaves Buttressed trees Shallow root systems

Hypertrophied lenticels Floating leaves Stooling Floating stems Inflated leaves

Soil Drainage classes:  Well Moderately Well Somewhat Poorly Poorly Very Poorly Mapped Hydric Soil

Slope:  Nearly level Gentle Moderate Steep

Upland Border:

Slope: Nearly level Gentle Moderate  Steep

Cover Types:  Mature forest Sapling forest Shrub thicket Meadow Mowed lawn Farm

Vegetation Density(S/M/D): Trees  Saplings  M Shrubs Herbs Grass

Soil: 30A - Udorthents - Adams Complex - sandy



Leaf litter: Well developed Moderately well developed Absent  
 Cover objects: Logs Bark Boulders Rocks  
 Evidence of Erosion: No Yes (Explain)

**GWR/GROUNDWATER RECHARGE (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Soils	<u>Sand/gravel outwash</u>	Hardpan, tight fine-grained soils, shallow ledge	
Wetland associated w/ perennial or seasonal watercourse	<u>Yes</u>	No	
Slope	<u>Gentle</u>	Moderate or Steep	
Function Present	<u>Yes</u> No		
Degree of Function	High <u>Mod</u>	Low	

**GWD/GROUNDWATER DISCHARGE**

Criteria	+	-	Comments
Soils	Hardpan, shallow ledge		
Seeps, springs observed?	<u>Yes</u>	No	
Wetland microrelief	<u>Well developed</u>	<u>Non/Poorly developed</u>	
Wetland contains an outlet, no inlet	<u>Yes</u>	No	
Function Present	<u>Yes</u>	No	
Degree of Function	High <u>Mod</u>	Low	<i>Seepage from hillside indicates groundwater discharge</i>

**FFA/FLOODFLOW ALTERATION (Excluding condition: Slope Wetland)**

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	<u>Small</u>	
Amount of impervious surface in wetland watershed	Large	<u>Small</u>	
Wetland Slope	<u>Gentle</u>	Moderate Steep	
Wetland characterized by variable water level?	<u>Yes</u>	No	
Wetland in floodplain of adjacent watercourse	<u>Yes</u>	No	
Valuable properties, structures, or resources located in or near floodplain downstream from wetland	<u>Yes</u>	No	<i>Airfield</i>
Watershed has a history of economic loss due to flooding	Yes	No	<i>unknown</i>
Wetland outlet restricted	Yes	<u>No</u>	
Wetland vegetation density	High	<u>Low</u>	
Wetland microrelief	Well developed	<u>None/Poorly developed</u>	

Function Present	<input checked="" type="checkbox"/> Yes	No	
Degree of Function	High	Mod	<input checked="" type="checkbox"/> Low

F&SH/FINFISH HABITAT: POND & LAKE (Excluding condition: Not associated with pond/lake)

Criteria	+	-	Comments
Dominant land Use adjacent to Waterbody	Forest, Shrub, Meadow	Lawn	
Shallow littoral zone with emergent vegetation present?	Yes	No	
Waterbody at least 10' deep	Yes	No	
% of pond covered by submerged or emergent vegetation	15-40%	Other	
Direct stormwater discharge via culvert?	No	Yes	
Sandbar present at inlet?	No	Yes	
Water transparency	High	Low	
Significant nutrient source (fertilizers, waterfowl) present in watershed?	No	Yes	
Pond size $\geq 0.5$ acre	Yes	No	
Pond experiences dense algal blooms, nuisance aquatic vegetation or duckweed?	No	Yes	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

F&SH/FINFISH HABITAT: STREAMS/RIVERS (Excluding condition: Not associated with perennial stream)

Criteria	+	-	Comments
Channel shaded by riparian trees and/or shrubs	<input checked="" type="checkbox"/> Yes	No	
Gravel spawning areas present	Yes	<input checked="" type="checkbox"/> No	
Barriers to anadromous fish (dams/high culverts) present in stream reach	<input checked="" type="checkbox"/> No	Yes	
Dominant bottom substrate	Gravel/cobbles	<input checked="" type="checkbox"/> Sand/silt	
Substrate embeddedness by sand & silt	Low	<input checked="" type="checkbox"/> High	
Instream habitat diversity (riffle, run, pool, shallow, deep)	High	<input checked="" type="checkbox"/> Low	
Channel alterations (channelization, islands or point bars)	<input checked="" type="checkbox"/> Absent or Few	Numerous	
Bank stability	<input checked="" type="checkbox"/> Stable	Unstable, eroding	
Bank vegetative cover	<input checked="" type="checkbox"/> High (trees, shrubs)	Low	Trees
Cover objects (fallen logs, boulders, undercut banks)	<input checked="" type="checkbox"/> Many	Absent/few	Fallen logs
Riparian zone	<input checked="" type="checkbox"/> Wide	Narrow	
Watershed development	Low	<input checked="" type="checkbox"/> High	
Water quality	Good	Poor	unknown

Pollution tolerance of benthic macro-invertebrate taxa	Mostly intolerant	Mostly tolerant	Unknown
Function Present	Yes	No	Some potential habitat present
Degree of Function	High	Mod	

### S&TR/SEDIMENT/TOXICANT/PATHOGEN RETENTION

Criteria	+	-	Comments
Sources of sediments or toxicants upstream	Yes	No	
Duration of water retention in wetland	Long	Short	
Evidence of sediment trapping in wetland	Yes	Low	
Vegetation density	High	No Low	
Wetland edge broad and intermittently aerobic	Yes	Low	
Drainage ditches in wetland	No	Yes	
Water flow through wetland	Diffuse	Channelized	
Ponded water present	Yes	No	
Wetland basin topographic gradient	Low	High	
Fine grained mineral or organic soils present	Yes	No	
Watercourse, if present, has visible velocity decreases in wetland	Yes	No	
Indicators of erosion or high water velocities are present	No	Yes	
Function Present	Yes	No	Narrow wetland border along stream, Little/no input of sediment
Degree of Function	High	Mod	

### N&RR/NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

Criteria	+	-	Comments
Wetland size in relation to watershed	Large	Small	
Potential sources of excess nutrients upstream	Yes	No	
Wetland is saturated most of the season	Yes	No	
Emergent vegetation and/or dense woody stems are dominant	Yes	No	
Water flow through wetland	Diffuse	Channelized	
Vegetation density	High	Low	
Potential for sediment trapping exists	Yes	No	
Deep or open water habitat is present	Yes	No	
Soil type	Organic/high clay content	Sand/gravel	
Wetland basin topographic gradient	Low	High	
Wetland microrelief	Well developed	None, poorly developed	

Function Present	Yes	<input checked="" type="radio"/> No		No sources of excess nutrients, short retention time
Degree of Function	High	Mod	Low	

PE/PRODUCTION EXPORT (Excluding Condition: No Outlet)

Criteria	+		-	Comments
Wildlife food sources in wetland	Abundant		<input checked="" type="radio"/> Few	
Vegetation density	High		<input checked="" type="radio"/> Low	
Nutrients and/or organic matter flushed out of wetland into watercourse	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Wetland has high degree of plant community structure and species diversity	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Detritus development is present within this wetland	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Flowering plants used by nectar gatherers present	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Evidence of wildlife use in wetland	Yes		<input checked="" type="radio"/> No	
Fish or shellfish develop/occur in wetland	Yes		<input checked="" type="radio"/> No	
Function Present	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Degree of Function	High	<input checked="" type="radio"/> Mod	Low	

S&SS/SEDIMENT/ShORELINE STABILIZATION

Criteria	+		-	Comments
Topographical gradient in wetland	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Potential sediment sources upstream or upslope	Yes		<input checked="" type="radio"/> No	
Wetland border >10' adjacent to pond or water	Yes		<input checked="" type="radio"/> No	
Distinct shoreline or bank evident between wetland and water	No		<input checked="" type="radio"/> Yes	
Open water fetch present	Yes		<input checked="" type="radio"/> No	
Boating activity present	Yes		<input checked="" type="radio"/> No	
Floodplain stabilizing trees and shrubs present	<input checked="" type="radio"/> Yes		<input checked="" type="radio"/> No	
Indications of erosion or siltation present	Yes		<input checked="" type="radio"/> No	
Function Present	Yes		<input checked="" type="radio"/> No	
Degree of Function	High	Mod	Low	

REC/RECREATION

Criteria	+		-	Comments
Wetland is part of recreation area, park, refuge, etc.	Yes		<input checked="" type="radio"/> No	
Fishing is available in or from the wetland	Yes		<input checked="" type="radio"/> No	
Hunting is permitted in wetland	Yes		<input checked="" type="radio"/> No	
Hiking occurs or has potential to occur in wetland	Yes		<input checked="" type="radio"/> No	
Wetland is a valuable wildlife habitat	Yes		<input checked="" type="radio"/> No	

Wetland has high visual/aesthetic quality	Yes	No	
Boating or canoeing feasible in wetland	Yes	No	
Off-road public parking near wetland available	Yes	No	
Safety Hazards (if present list them)	Yes	No	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

### WLH/WILDLIFE HABITAT

Criteria	+	-	Comments
Wetland degradation by human activity	Little or None	Moderate to High	
Wetland fragmentation by development	Little or None	Moderate to High	
Buffer exists (F=forest M=Meadow S=Sapling/shrub thicket L=Lawn A=Agriculture)	Yes	No	Forest
Buffer width	Good to Excellent	Fair to Poor	
Connectivity with other wetlands	Yes	No	
Size of landscape block in which wetland is located	Large	Small	
Wildlife food sources in wetland	Abundant	Few	
Interspersion of vegetation and open water	High	Low	
Upland islands	Present	Absent	
Wetland class diversity (W=Wooded swamp SS=Shrub swamp M=Marsh WM=Wet meadow OW=Open water)	High	Low	Wooded swamp
Vegetation density	High	Low	
Vegetation strata (T=Tree S=Sapling SH=Shrub V=Vine H=Herb LL=Leaf litter)			Tree, sapling, herb, leaf litter
Wetland plant species diversity	High Mod Low		
Vernal pool	Yes	No	
Edge diversity (List types)			Mature forest
Water regime	Wetter	Drier	
Habitat features (S=Snags L=Fallen logs SE=seep/spring)	Abundant	Few	Snags, fallen logs
Cover objects (L=Logs/branches R=Rocks B=Bark)	Abundant	Few	Logs/branches
Flat rocks in/near watercourse (stream salamanders)	Present	Absent	
Sphagnum hummocks next to shallow pools	Present	Absent	
Bare well drained sandy soils near wetland (turtle nest site)	Present	Absent	
Abundance of invasive exotic flora	None or Low	High	
Function Present	Yes	No	
Degree of Function	High	Mod	Low

### E&SV/EDUCATIONAL/SCIENTIFIC VALUE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland provides valuable wildlife habitat	Yes		No	
Wetland class diversity	High		Low	PFD
Adjacent upland cover types (F=forest M=Meadow S=Sapling/shrub thicket A=Agriculture)	High		Low	Forest
Off-road parking near wetland available	Yes		No	
Proximity to schools	Near		Far	Bowdoin College
Wetland contains perennial watercourse	Yes		No	
Wetland contains pond/lake	Yes		No	
Safety hazards (if present list them)				
Site currently used for educational/scientific purposes	Yes		No	No public access
Function Present	Yes		No	No public access
Degree of Function	High	Mod	Low	

#### U/H/UNIQUENESS/HERITAGE

Criteria	+		-	Comments
Wetland contains listed species	Yes		No	
Wetland identified as exemplary natural community	Yes		No	
Wetland locally/regionally significant	Yes		No	
Function Present	Yes		No	
Degree of Function	High	Mod	Low	

#### VQA/VISUAL QUALITY/AESTHETICS

Criteria	+		-	Comments
Visible from primary viewing locations	Yes		No	
Views absent trash, debris, sign of degradation	Yes		No	
Low noise level	Yes		No	Near airfield
Visual landuse contrast with wetland	Yes		No	
Function Present	Yes		No	No access
Degree of Function	High	Mod	Low	

#### ESH/ENDANGERED SPECIES HABITAT

Criteria	+		-	Comments
Wetland contains or known to contain federal listed species or habitat	Yes		No	
Wetland contains critical habitat for state or federal listed species	Yes		No	
Area appears in state or national database	Yes		No	

Function Present	Yes			<input checked="" type="checkbox"/> No
Degree of Function	High	Mod	Low	

CONCLUSION: SUMMARY TABLE (X=present, P=Principle Wetland Function)

GWR/D	FFA	F&SH	S&TR	NR&R	PE	REC	WLH	ED/S	U/H	S&S	ESH
Mod/Mod	Low	mod	Mod	No	Mod	No	Med	No	No	No	No

SUMMARY OF FUNCTIONS

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area and refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

**Floodflow Alteration (Storage & Desynchronization):** This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas

**Fish and Shellfish Habitat:** For freshwater systems, this function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

**Nutrient Removal/Retention/Transformation:** This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or TNW such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

**Sediment/Shoreline Stabilization:** This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

**Recreation (Consumptive and Non-consumptive):** This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting or other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland Non-consumptive opportunities do not consume or diminish the resources of the wetland.

**Educational/Scientific Value:** This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

**Uniqueness/Heritage:** This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation and habitat diversity.

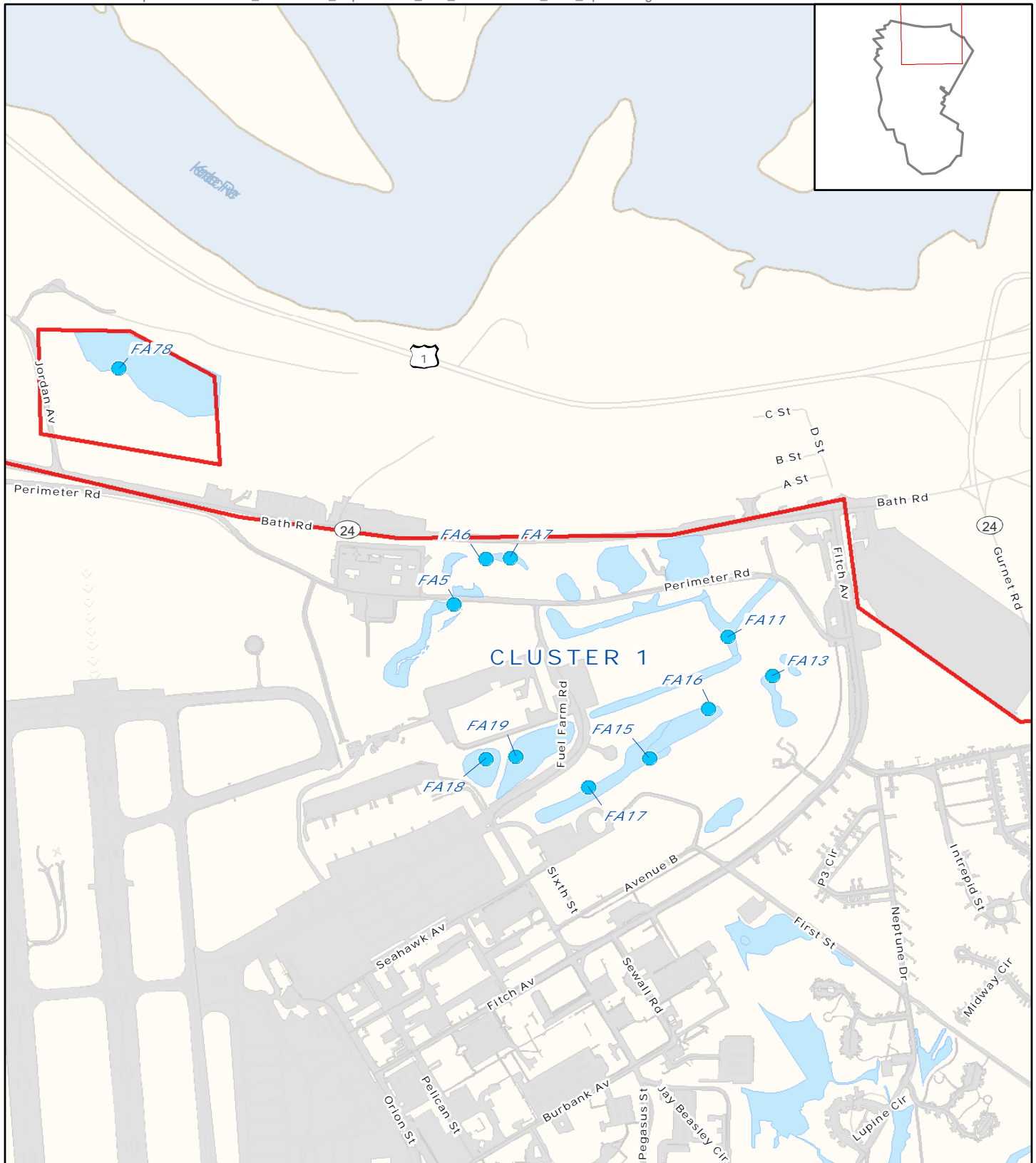
**Visual Quality/Aesthetics:** This value considers the visual and aesthetic quality or usefulness of the wetland.

**Endangered Species Habitat:** This value considers the suitability of the wetland to support threatened or endangered species (either federal or state listed).

# 3

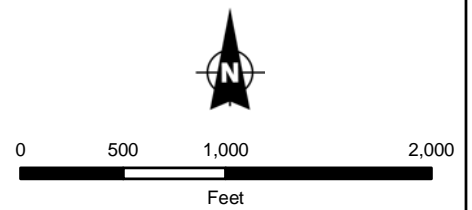
## Wetland Clusters

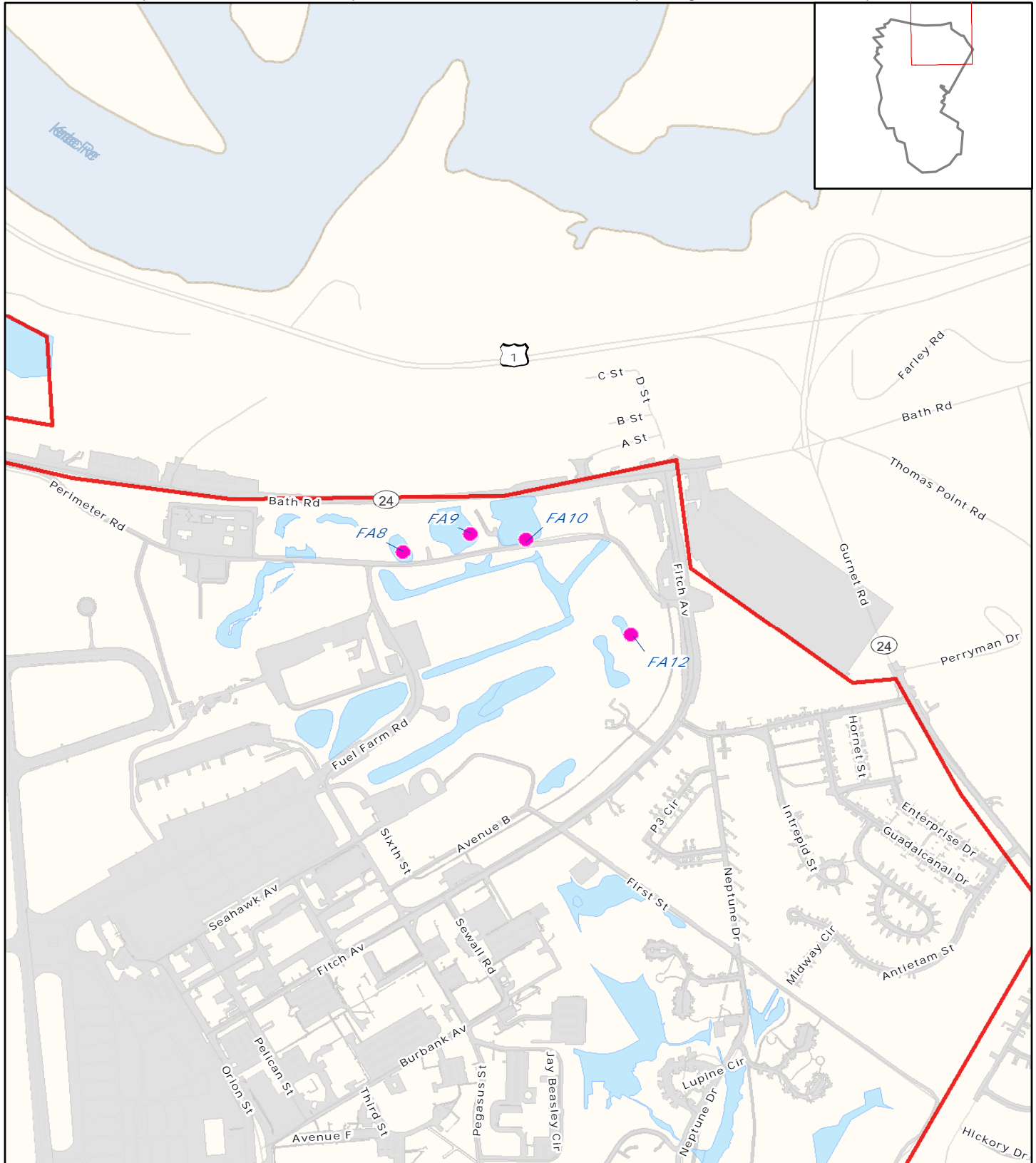




- Data Point
- Wetlands
- NAS Brunswick Property Boundary

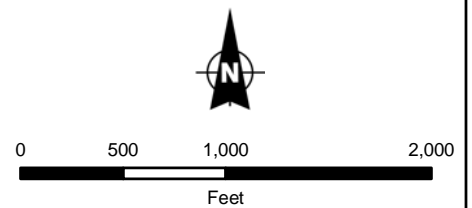
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Brunswick, Maine**

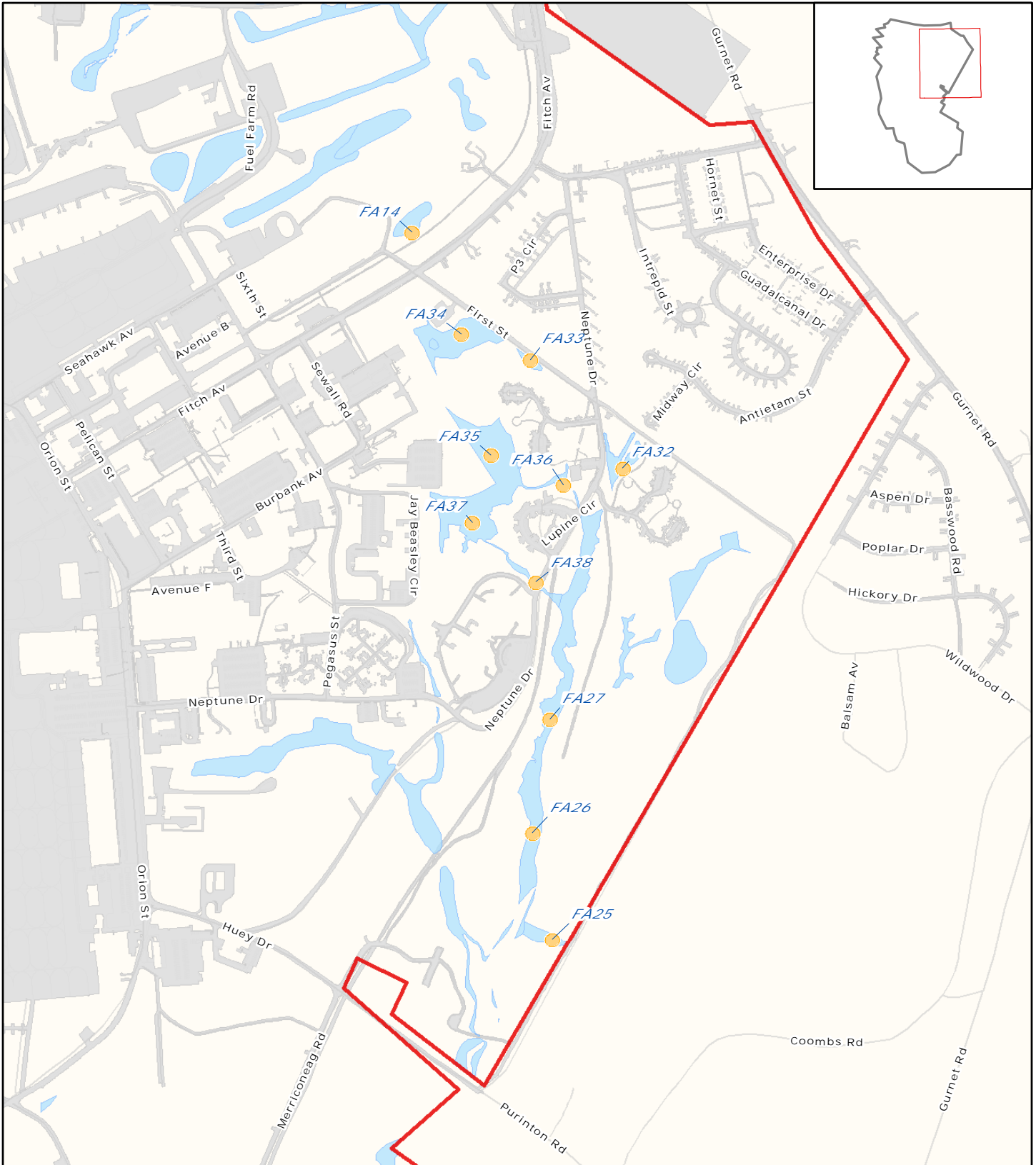







- Cluster Data Points
- Wetlands
- NAS Brunswick Property Boundary

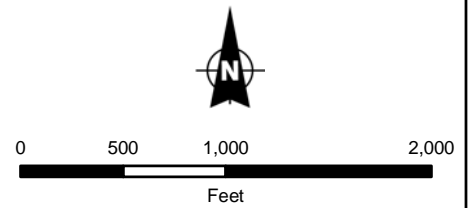
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 Brunswick, Maine**

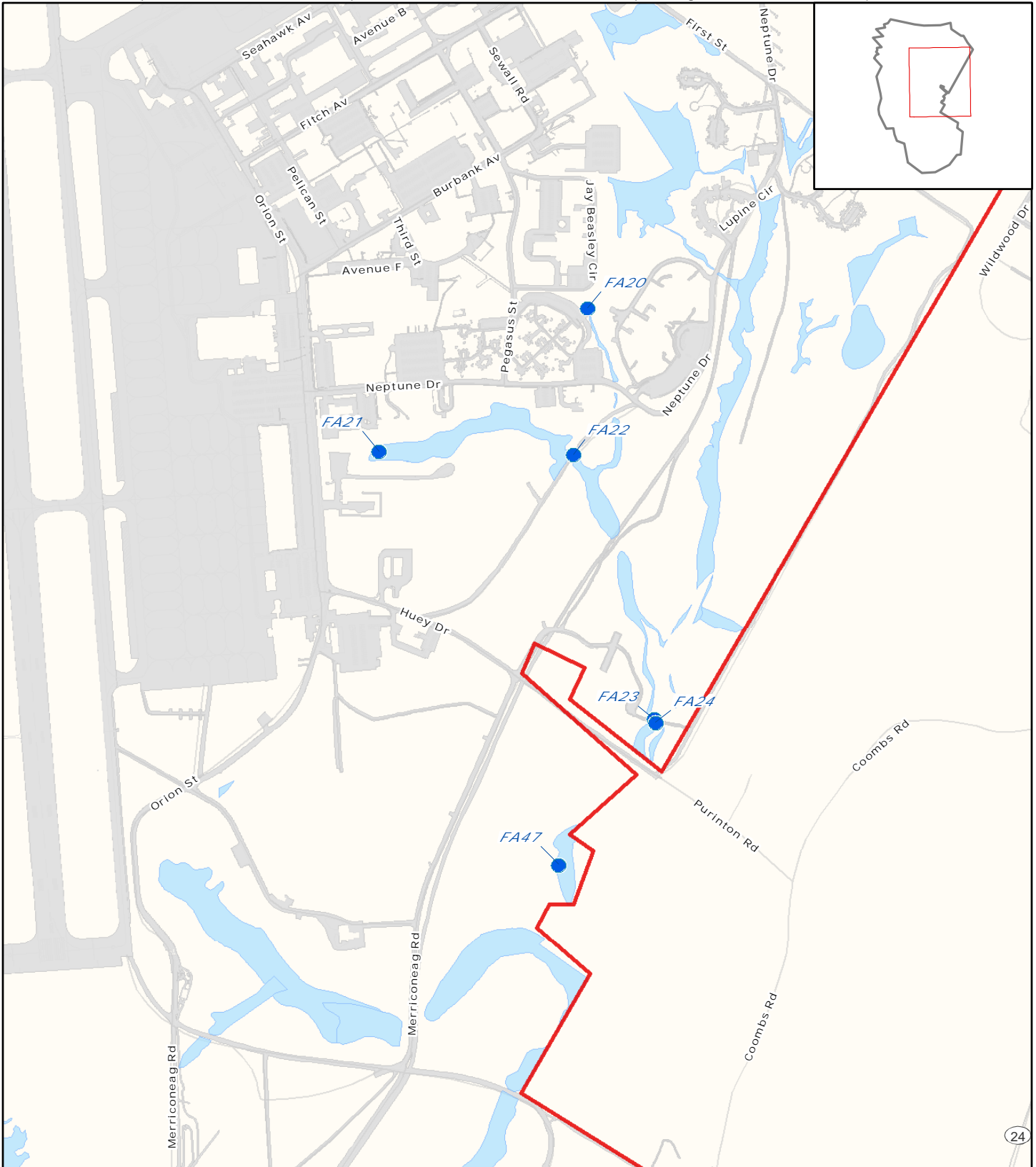




-  Cluster Data Points
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-  NAS Brunswick Property Boundary

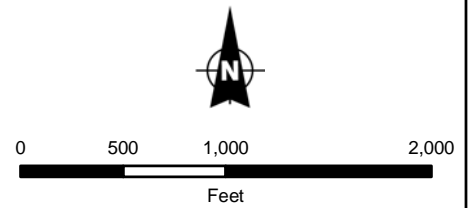
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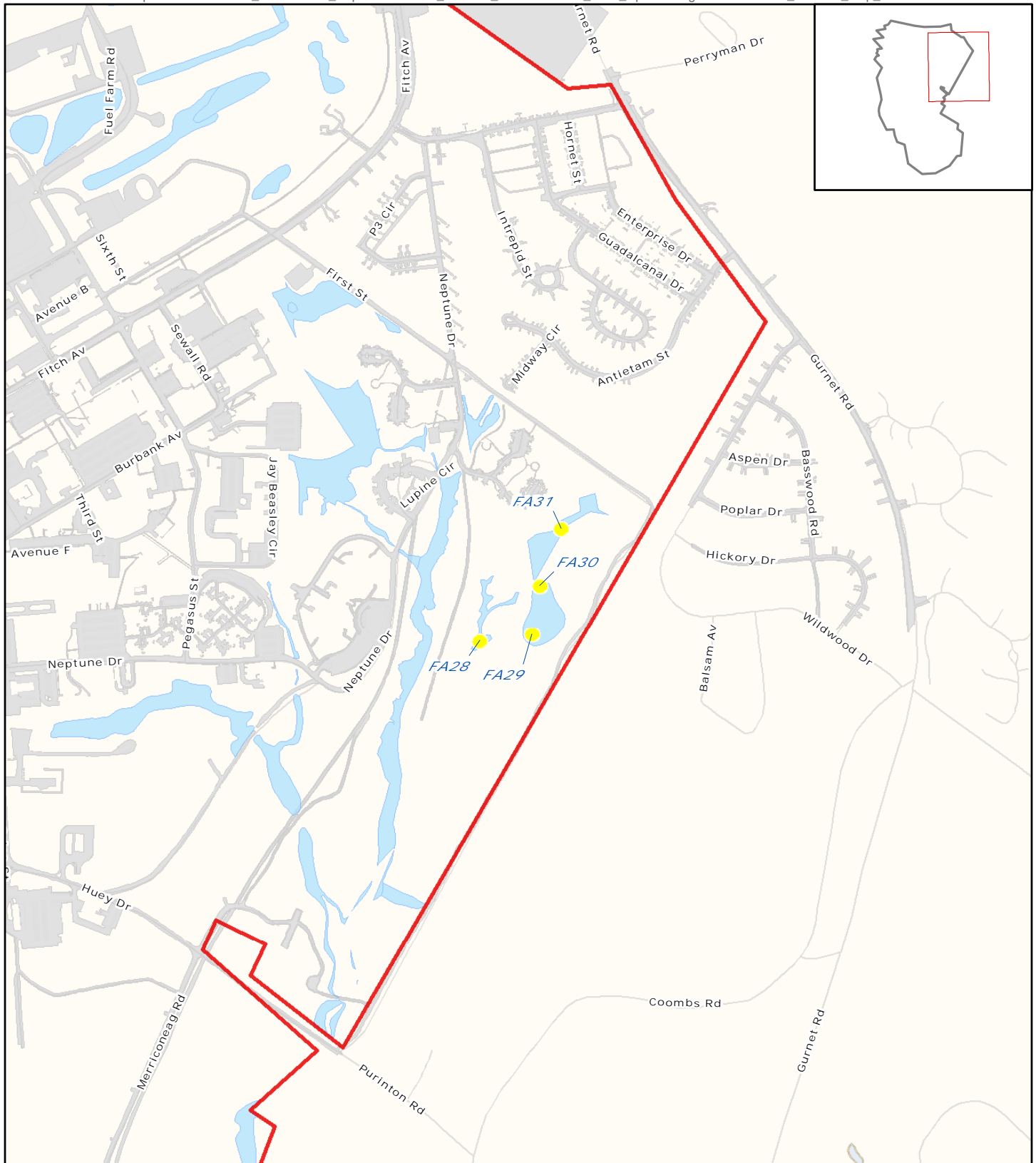




- Cluster Data Points
- Wetlands
- NAS Brunswick Property Boundary

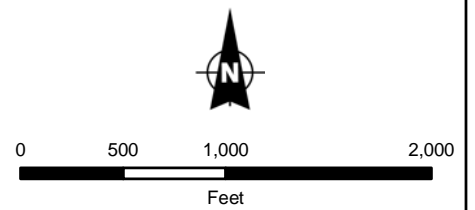
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Brunswick, Maine**



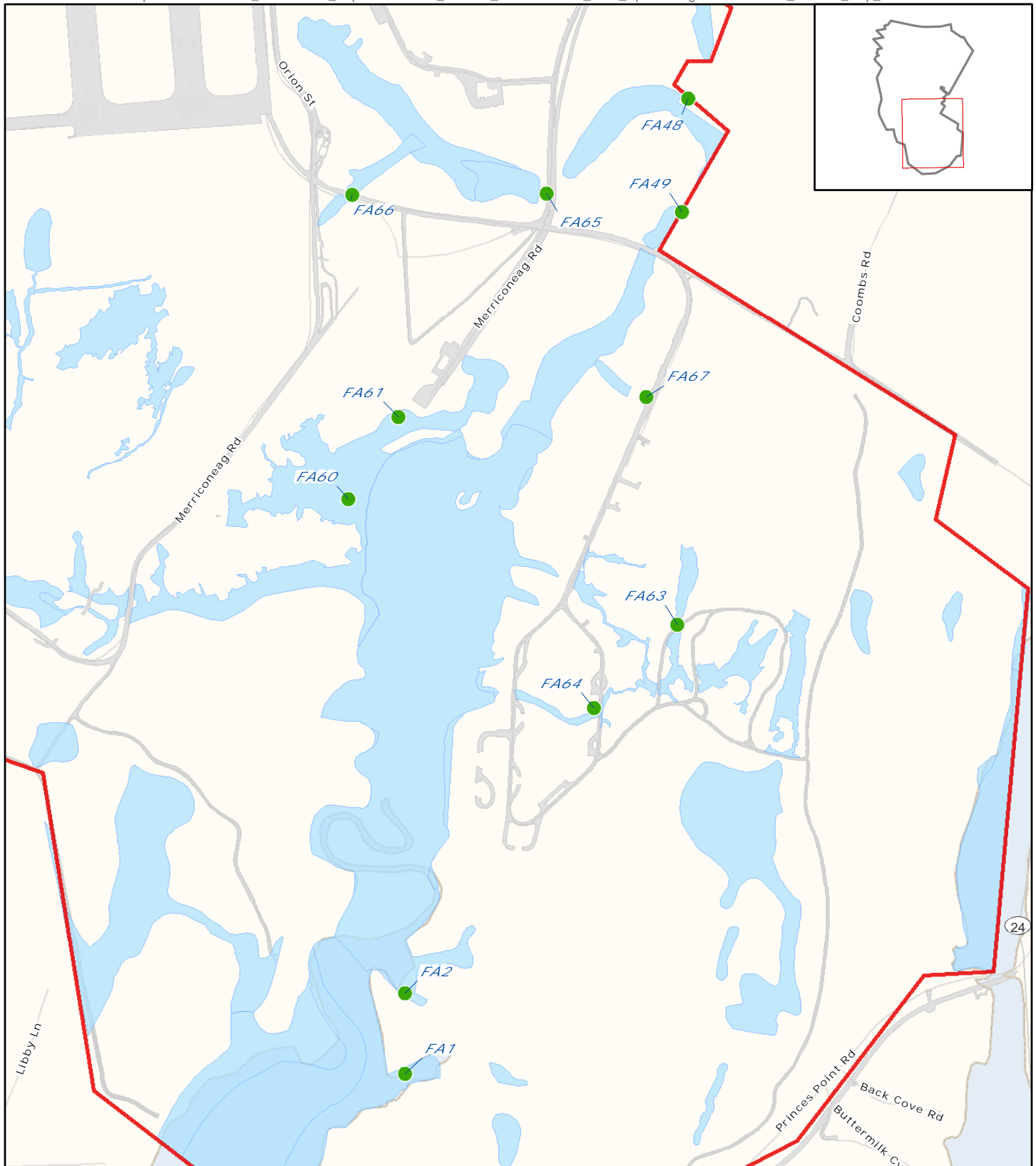





- Cluster Data Points
- Wetlands
- NAS Brunswick Property Boundary

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Brunswick, Maine**

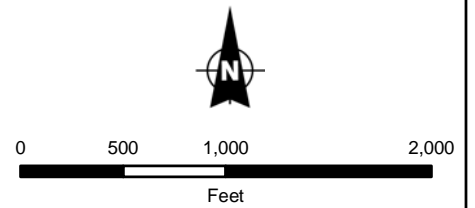


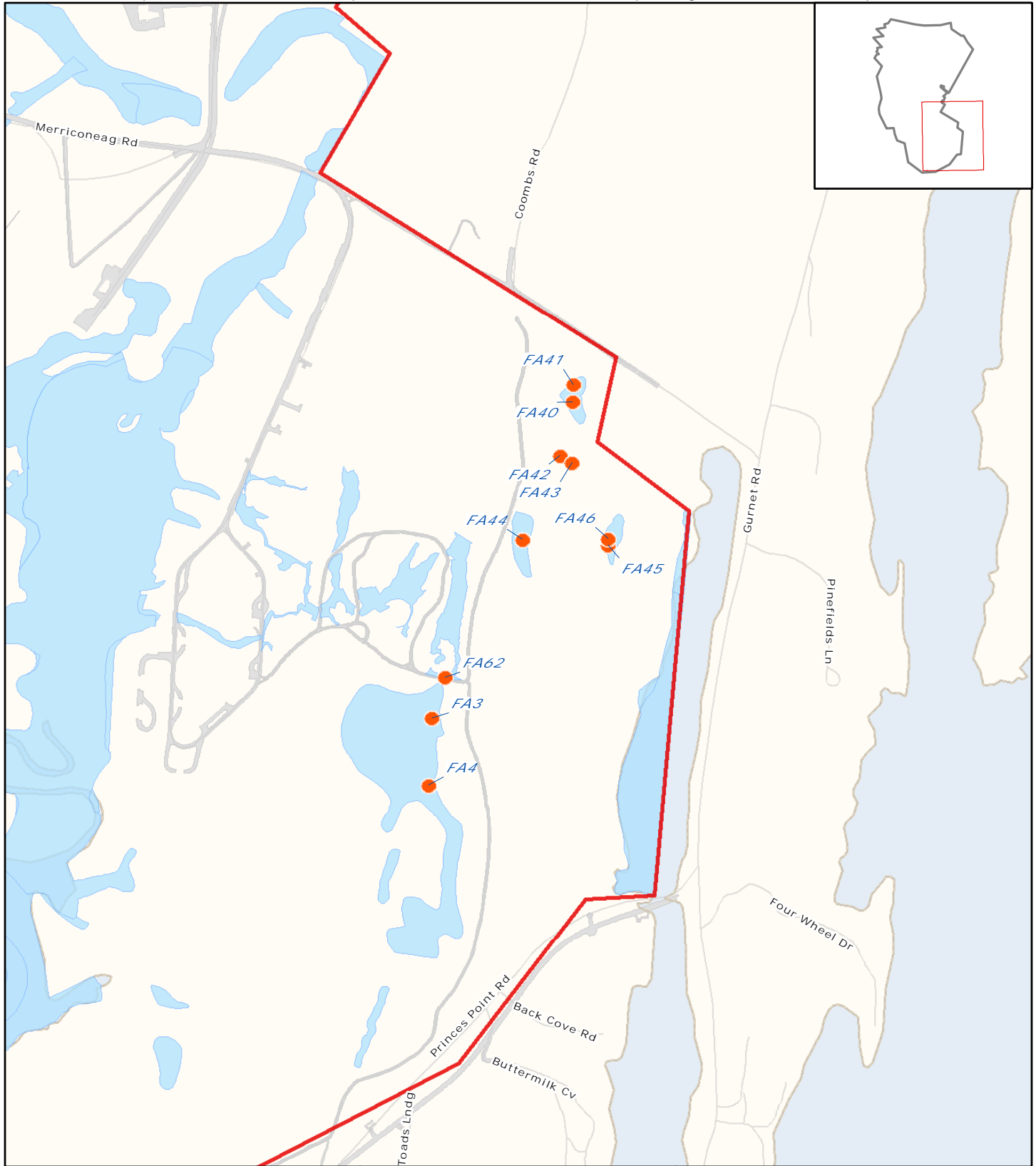







-  Cluster Data Points
-  Wetlands
-  NAS Brunswick Property Boundary

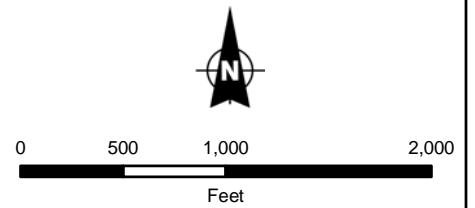
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NAS Brunswick  
Brunswick, Maine**

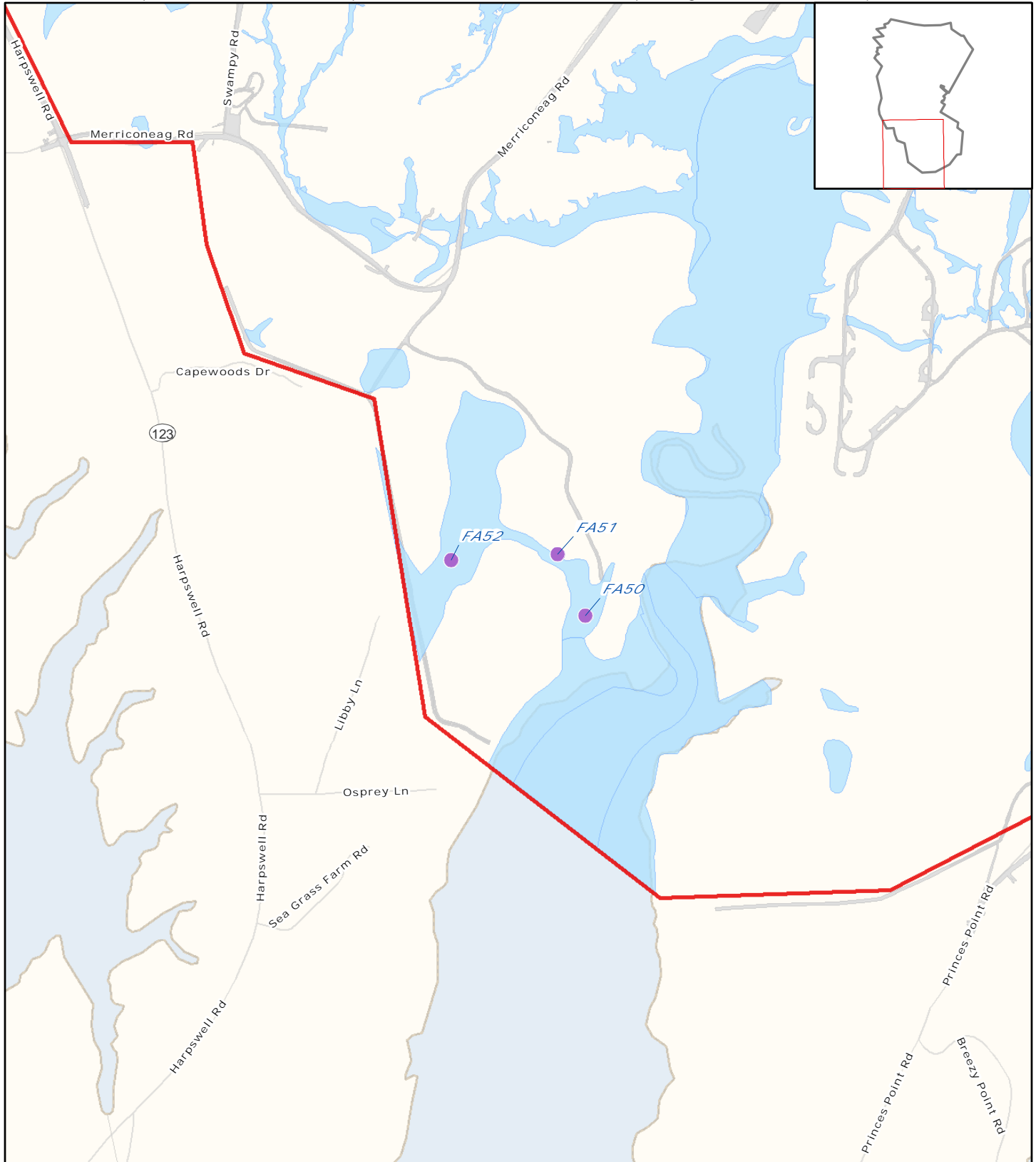







-  Cluster Data Points
-  Wetlands
-  NAS Brunswick Property Boundary

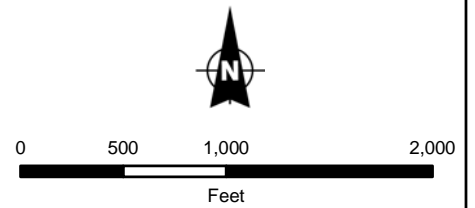
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Brunswick, Maine**



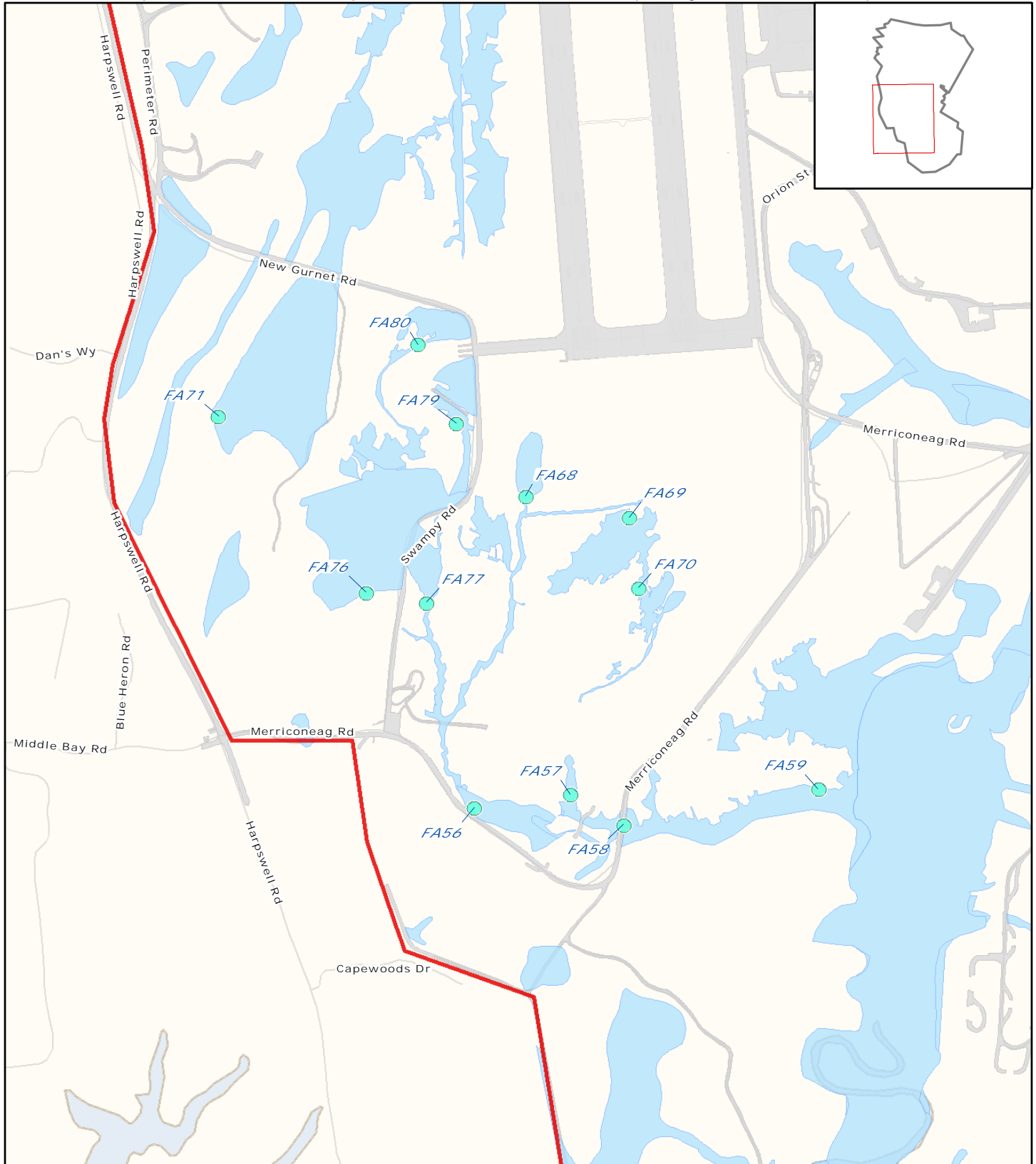


-  Cluster Data Points
-  Wetlands
-  NAS Brunswick Property Boundary

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Cluster 8  
NAS Brunswick  
Brunswick, Maine**

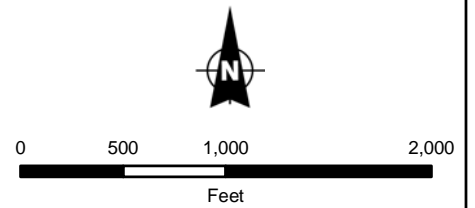


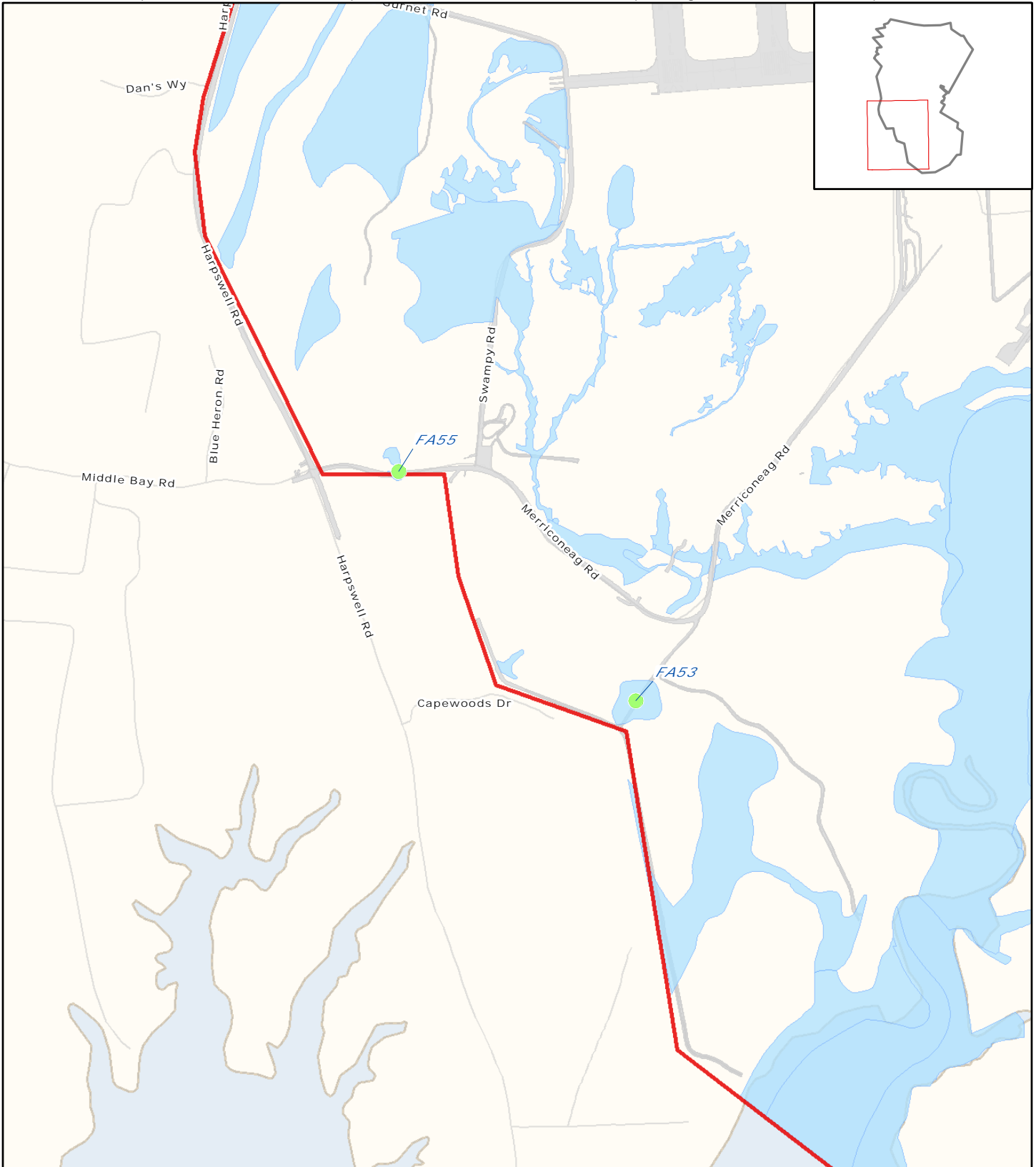







- Cluster Data Points
- Wetlands
- NAS Brunswick Property Boundary

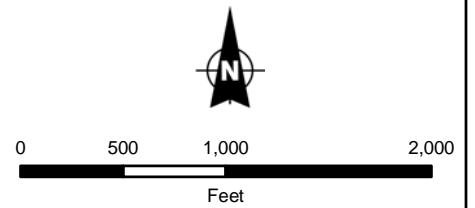
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Cluster 9  
NAS Brunswick  
Brunswick, Maine**








-  Cluster Data Points
-  Wetlands
-  NAS Brunswick Property Boundary

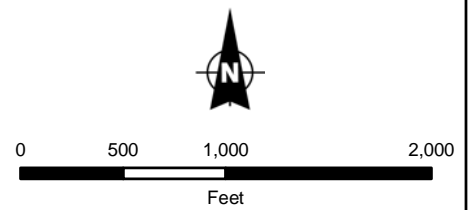
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NAS Brunswick  
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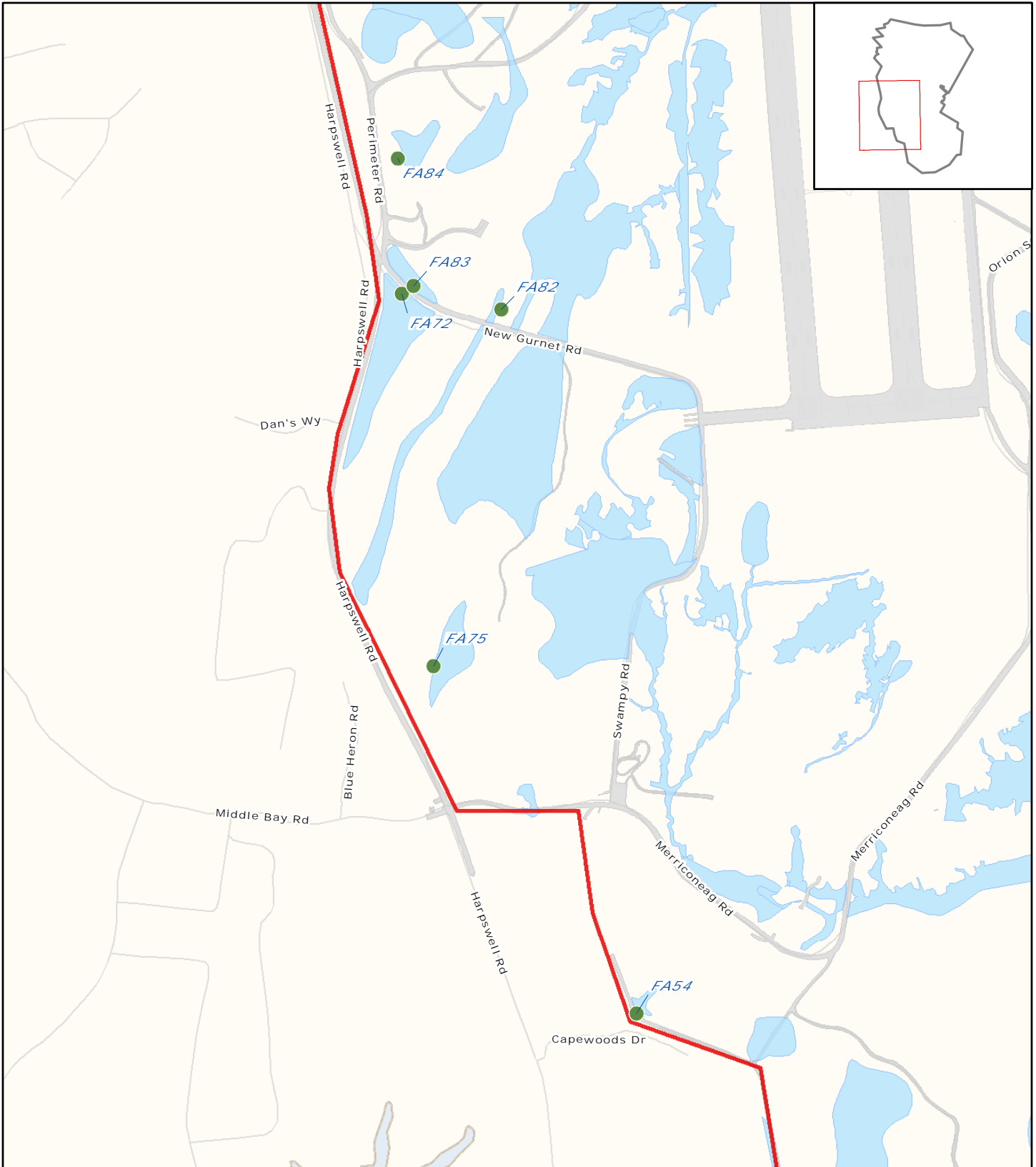







-  Cluster Data Points
-  Wetlands
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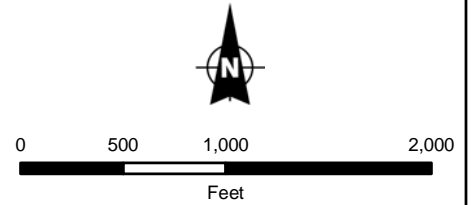
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Cluster 11  
NAS Brunswick  
Brunswick, Maine**

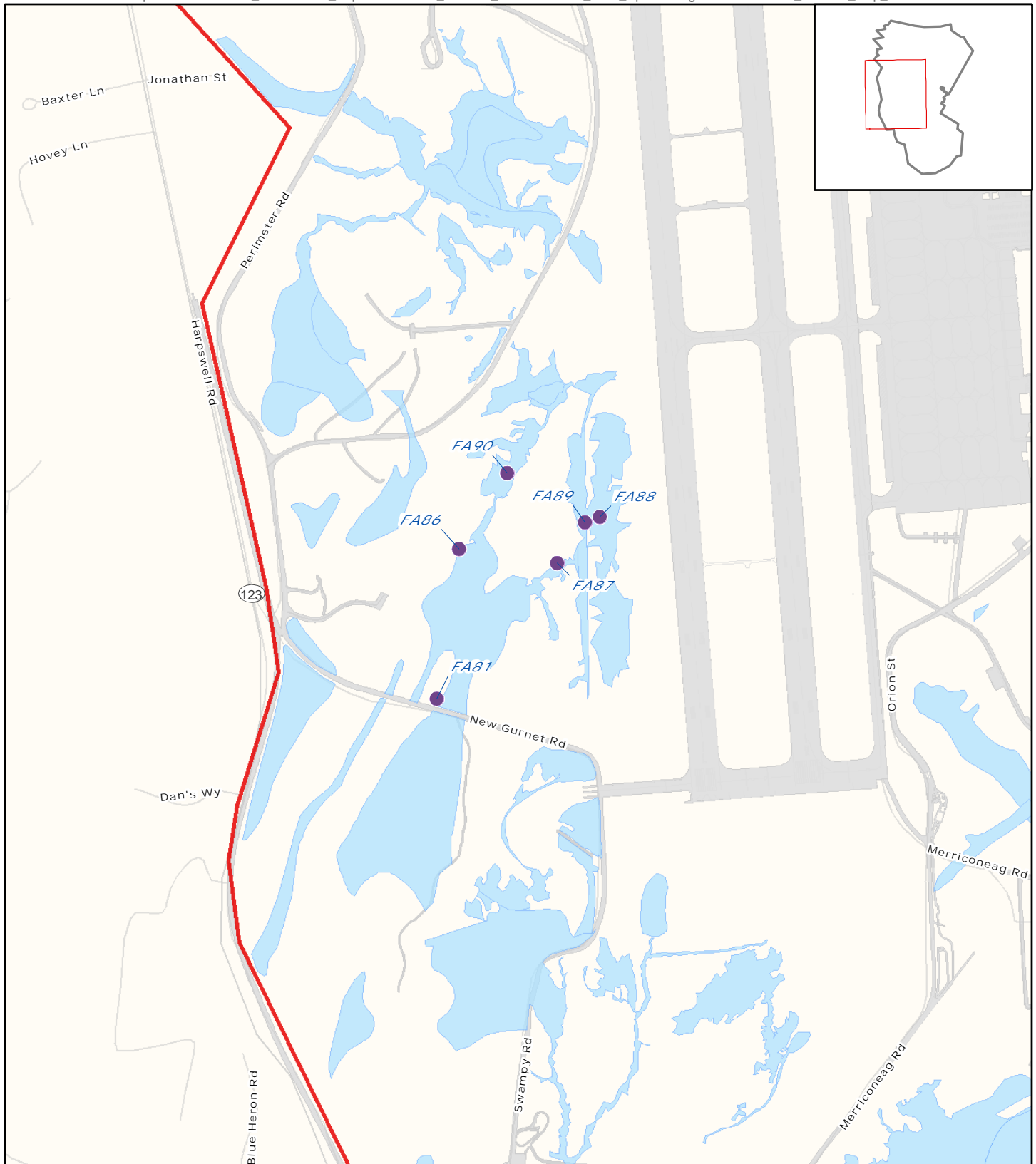







-  Cluster Data Points
-  Wetlands
-  NAS Brunswick Property Boundary

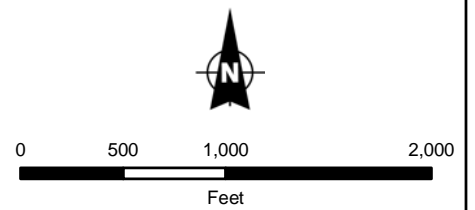
**Figure 12 of Attachment 3  
Cluster 12  
NAS Brunswick  
Brunswick, Maine**

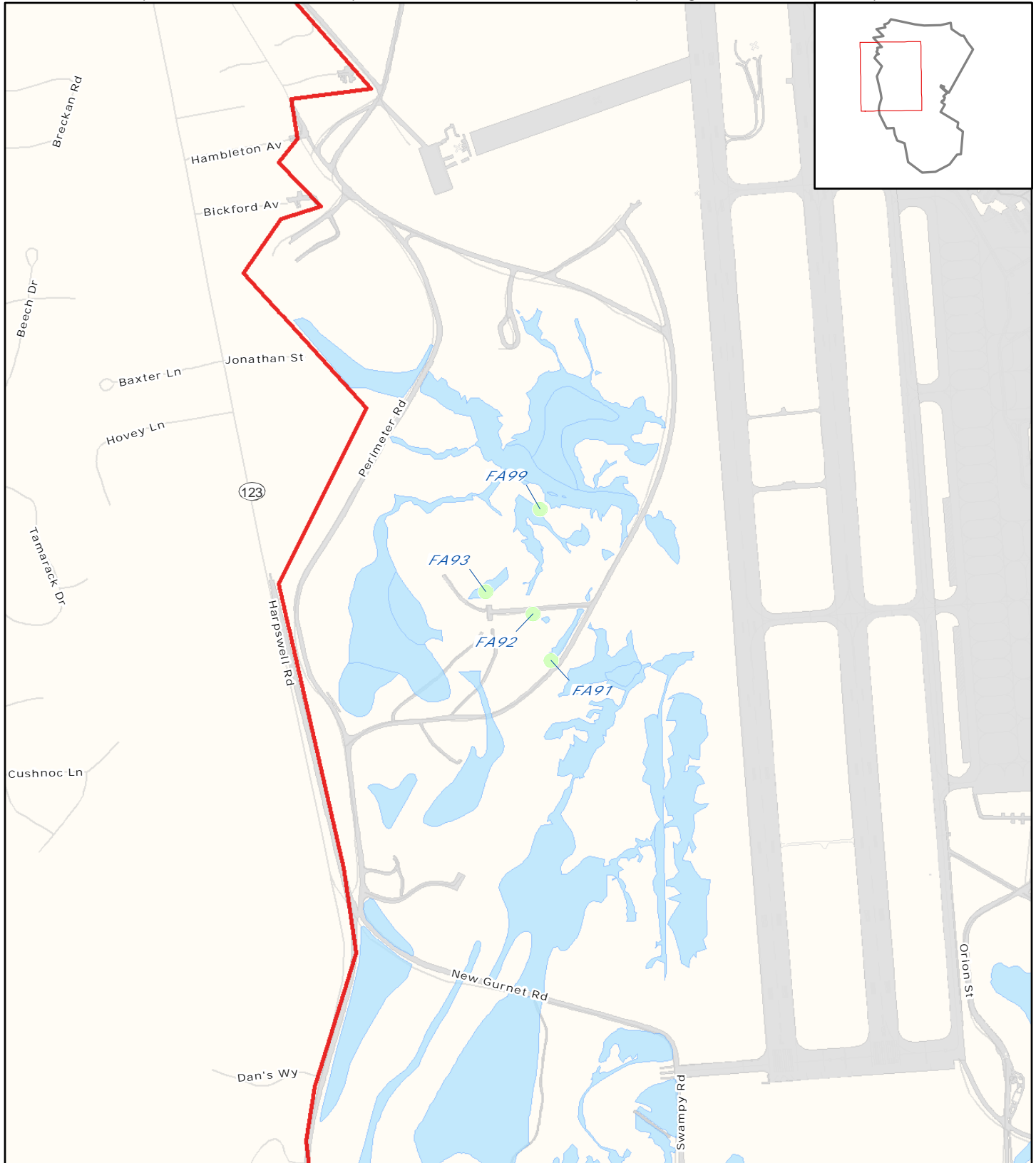







-  Cluster Data Points
-  Wetlands
-  NAS Brunswick Property Boundary

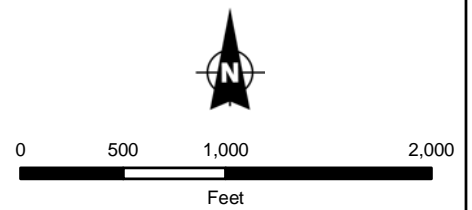
**Figure 13 of Attachment 3  
Cluster 13  
NAS Brunswick  
Brunswick, Maine**

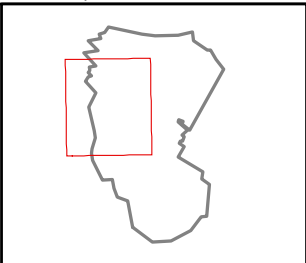
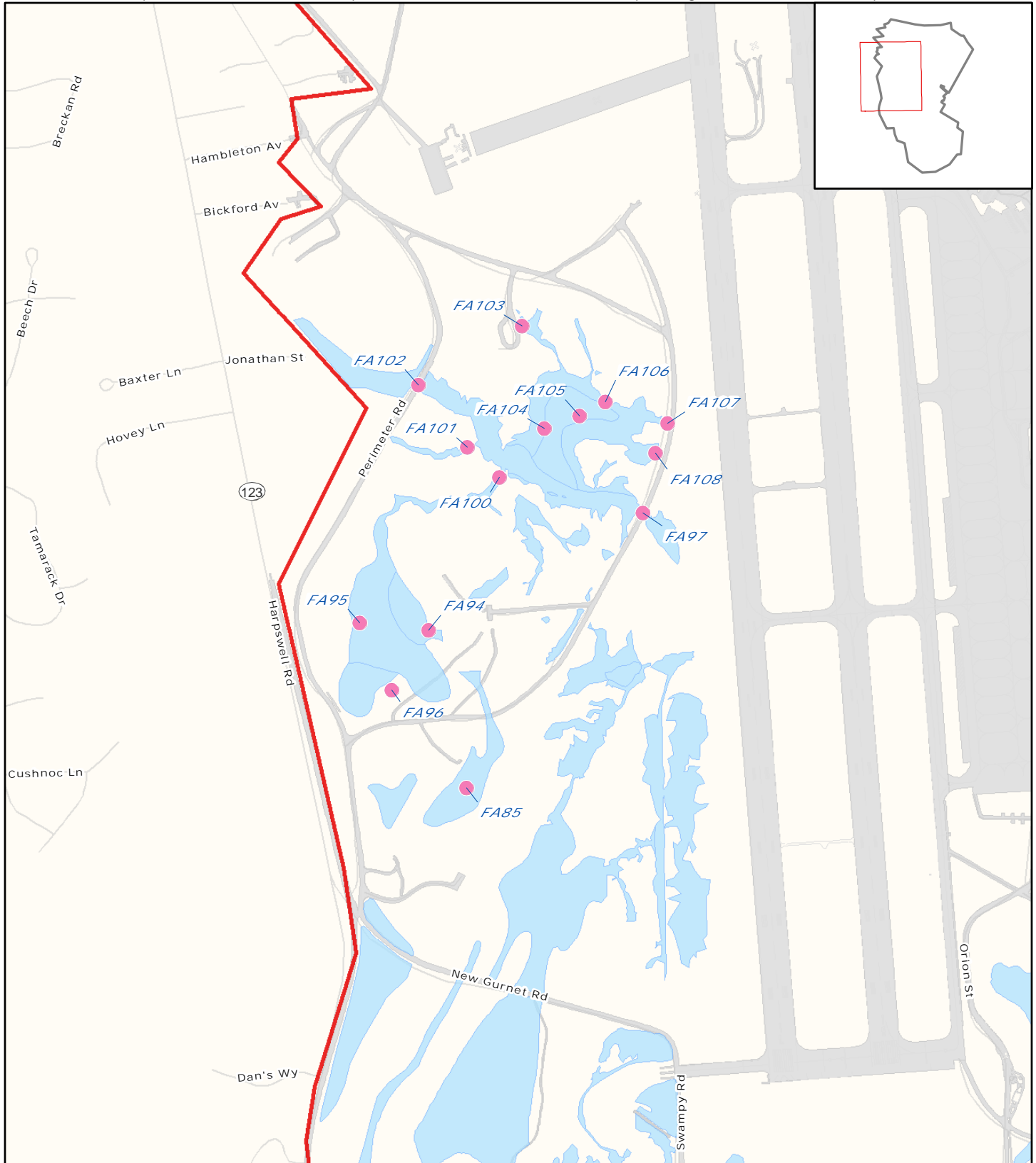







-  Cluster Data Points
-  Wetlands
-  NAS Brunswick Property Boundary

**Figure 14 of Attachment 3  
Cluster 14  
NAS Brunswick  
Brunswick, Maine**





-  Cluster Data Points
-  Wetlands
-  NAS Brunswick Property Boundary

**Figure 15 of Attachment 3  
Cluster 15  
NAS Brunswick  
Brunswick, Maine**

