



USACE Walla Walla District Wetland Mitigation Accounting December 2025

User Guide for Mitigation Requirement Calculators

August 2025 draft. Paul Adamus

Revised for NWW January 2026

Overview

Two spreadsheet calculators accompanying this manual can assist in determining the required compensatory mitigation based on the impact to wetlands and their functions and values derived from the Idaho Wetland Ecosystem Services Protocol (WESP)¹. One worksheet calculator (**Bank Crediting Method**) is applicable when predicting the credits that may be sold by an approved wetland mitigation bank or in-lieu fee program (ILFP) site in advance of impacts expected to occur to unspecified but potentially impacted (debit) wetlands. This calculator is also applicable when using WESP values to inform final credit releases on mitigation bank/ILFP sites. The other worksheet calculator (**Credit-Debit Method**) is applicable on a case-by-case basis when a specific impact is known.

The Bank Crediting Method should be considered *advisory only* when it is used as a predictive tool. In essence, these are “reserved” credits. The predictive WESP scores will be used in the Banking Crediting Method until the post-construction site has been evaluated by the WESP. Once an impact site has been identified, the Credit-Debit Method should be used as the *final* determinant of compensation adequacy. Similarly, once the *final* WESP evaluation has been completed at the mitigation site, those scores will be used for all future evaluations within the Credit-Debit method. That is because the tool incorporates functional differences in the credit and debit wetlands, thus helping ensure no net loss of function groups with the highest performance levels. Project proponents should be cautioned that the initial estimates of credits available for sale may change when a specific impact wetland is compared to credit bank/ILFP site as required by the Credit-Debit Method. The final mitigation requirement will increase if the debit wetland has higher ratings for its functions and values compared with those factors for the wetland bank wetland that it is being compared to.

Both spreadsheets have been configured such that all wetland functions and values are treated equally (no implicit weighting) with the only distinction being the relative performance levels of each function and value. While accounting for the different number of functions that are assessed, their respective Bank Crediting and Credit-Debit calculators parallel the same general format and apply the same train of mathematical logic. This manual is intended to explain the assumptions and overall processing steps of the calculators but does not explain every detail. Notes in the calculators provide further documentation.

¹ <https://www.nww.usace.army.mil/Business-With-Us/Regulatory-Division/Mitigation/>



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Wetland Bank Crediting Calculator

The **Bank Crediting Method** has three major components which together determine the credits available for sale:

- A set of mitigation ratios based solely on the predetermined probability of success of the specified type of compensatory mitigation (wetland creation, restoration, enhancement/rehabilitation, preservation, buffer).
- Relative performance levels of wetland functions and values in the wetland bank (credit sites).
- Anticipated acreage upon bank completion.

The Bank Crediting Calculator begins with an assumption, based on increasing probability of successful compensation, of the following mitigation ratios:

- 1.1 to 1 for Creation of a wetland bank (credit) wetland
- 1.5 to 1 for Enhancement of a wetland bank wetland
- 2.0 to 1 for Restoration of a wetland
- 10 to 1 for Preservation of a wetland
- 10 to 1 for Buffers

Based on assessments of the levels of functions and values in a wetland bank wetland as determined by a site visit applying WESP, the Bank Crediting Method potentially increases the initially assigned base mitigation ratio. The functions and values assessed by WESP-ID are as follows:

Water & Climate Management Group

- Water Storage and Delay
- Sediment & Toxicant Retention & Stabilization
- Phosphorus Retention
- Nitrate Removal & Retention
- Carbon Stock

Aquatic Connectivity Group

- Stream Flow & Temperature Support
- Organic Nutrient Export
- Fish Habitat

Aquatic Productivity Group

- Aquatic Primary Productivity
- Amphibian & Turtle Habitat



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Waterbird Habitat
Transition Zone Habitat Group
Songbird, Raptor, & Mammal Habitat
Native Plant Diversity
Pollinator Habitat
Cultural Support Group
Wildfire Resistance
Cultural and Recreational Importance

The basis for this organization is the thematic similarity within groups and the fact that the scores of functions within a group in some cases tend to be correlated. The maximum potential score for any function or value is 10, and the maximum potential score for any Group is 6, considering both its functions and values, is 6. For the calculation of the contribution of wetland performance levels to the estimate of potentially available credits, the average of the Group maximums is added to the maximum among all groups, then divided by 2. This helps ensure that multiple Groups with moderate scores count nearly as much as one Group with an outstanding score. Credits from multiple wetlands may be accumulated over time and used to offset debits of new projects affecting wetlands as those are proposed.

Credit-Debit Calculator

The **Credit-Debit Calculator** is applicable for permittee-responsible mitigation after avoidance and minimization of potential impacts have been considered. It also is an important step in evaluating the amount credits needed for mitigation from a specific wetland mitigation bank or in-lieu fee program when the impact site has been evaluated. It requires that functions and values be assessed at both the intended credit wetland and at the debit wetland proposed for alteration. Both must be specified in advance and assessed using WESP. Based on those assessments, the difference in each wetland function is calculated between the debit and credit wetland, as well as the difference in the values of the functions at each. The Value rating is calculated only if the rating of a Function is scored Moderate or High. If performance levels of multiple functions in a credit wetland are less than in the debit wetland, the proportional increase in functional losses potentially increases the mitigation requirement. Again, the intent is to facilitate the recognition of potential losses in wetland functions and values, not to simply base requirements on a standard mitigation ratio alone.

The method begins with an assumption, based on increasing probability of mitigation risk of *failure*, of the following mitigation ratios:

- 0 for Preservation of a wetland
- 1.1 for Restoration of a wetland



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2 to 1 for Enhancement of a wetland

3 to 1 for Creation of a wetland

Under the Credit-Debit Method, in addition to adding to the base mitigation ratio the average of the functional losses, the base mitigation ratio may increase depending on:

- time lag between when the debit wetland is altered and when the proposed mitigation action is implemented, and
- if applicable, instances where the debit wetland is at least partially forested, but the credit wetland is not.

Constants representing each of these two factors must be added to the preceding factors.

Preparing to Use the Applicable Calculator

Before you begin, gather the following information and be prepared to enter it in the relevant calculator.

- Details of the credit wetland and if applicable, the impacted (debit) wetland, including acreage.
- Proposed mitigation actions and the type of mitigation (preservation, restoration, enhancement, creation).
- Expected delays in mitigation implementation.
- Results of a recent assessment of wetland functions and values in a wetland bank/ILFP (credit) wetland, or, if a specific debit wetland can be identified, the differences in wetland functions and values between the debit and proposed credit wetland(s).

Additional Notes

Again, recall that the final number of credits may differ depending on the characteristics of the specific credit and debit sites as determined by subsequent application of the Credit-Debit Method. Conclusions cannot be validly drawn regarding the degree to which the use of one method or another may affect predicted credits.

The Portland District of the Corps of Engineers, in collaboration with the Oregon Department of State Lands, requires replacement of *each* group-level function diminished or lost at a debit (impact) site with the same or greater acreage of a wetland having a similar or greater performance of that **same** group-level function at a proposed credit site. That requirement has not been directly incorporated into these calculators but should be considered separately when applicable.



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Some wetland regulatory programs require replacement of a diminished or lost wetland with a **wetland of the same type**, with type usually defined based on the Cowardin or HGM classifications. That requirement has not been directly incorporated into these calculators but could be considered separately when applicable.

Some wetland regulatory programs require replacement of a diminished or lost wetland with a wetland in a defined **service area**. That must be considered separately from the process described herein.

In instances where Preservation is the chosen mitigation scenario, some wetland regulatory programs incorporate the perceived degree of **threat** to the wetland proposed for preservation, based on site-specific physical and/or legal considerations including projected economic growth in the vicinity. That requirement has not been directly incorporated into these calculators but could be considered separately when applicable.

Similarly, some programs when deciding on the amount of mitigation required in specific instances incorporate an estimate, where possible, of **historical human-responsible wetland losses** in a watershed or region within a specified time period, i.e., greater compensation in areas with historically high wetland conversions to non-wetlands. That requirement has not been directly incorporated into these calculators but could be considered separately when such estimates are possible.

Buffers will be evaluated on a case-by-case basis with an initial ratio of 10 to 1.