



# Office of Investigations & Analysis (CG-INV)



**CDR Baxter B. Smoak**  
Chief, Compliance Analysis Division (CG-INV-2)





# Strategic Partnerships and Stakeholders



- Federal Advisory Committees: National Boating Safety Advisory Council (NBSAC), National Offshore Safety Advisory Committee (NOSAC), Towing Safety Advisory Committee (TSAC), **Commercial Fishing Vessel Advisory Committee (CFVAC)**, and Great Lakes Pilotage Advisory Committee (GLPAC)
- Quality Partnerships: Passenger Vessel Association (PVA), American Waterway Operators (AWO), National Association of Boating Law Administrators (NASBLA), Association of Diving Contractors International (ADCI), Offshore Marine Service Association (OMSA), and Water Sports Industry Association (WSIA)
- OGAs: DHS, DOJ, DOT, **NOAA**, BSEE, NTSB, USACE, IMO, MARAD, MSC, **National Marine Fisheries Service (NMFS)**, **NIOSH**, and International Organization for Standardization (ISO)
- Primary Internal Customers: Deputy Commandant of Operations, Assistant Commandant for Prevention Policy (CG-5P), Director of Inspections and Compliance (CG-5PC), Director of Commercial Regulations and Standards (CG-5PS), Congressional Affairs, CG Legal Staff, CG Public Affairs, and the field (local units, districts, and areas).





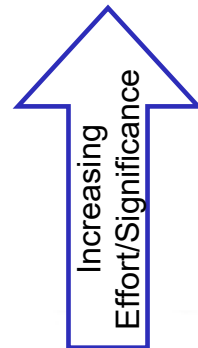
# Marine Investigations



- Preliminary Investigation (19,000/yr)
- Reportable Marine Casualty (3,500/yr)

## Levels of Investigative effort

- Formal Investigation
- Informal Investigation
- Data Collection

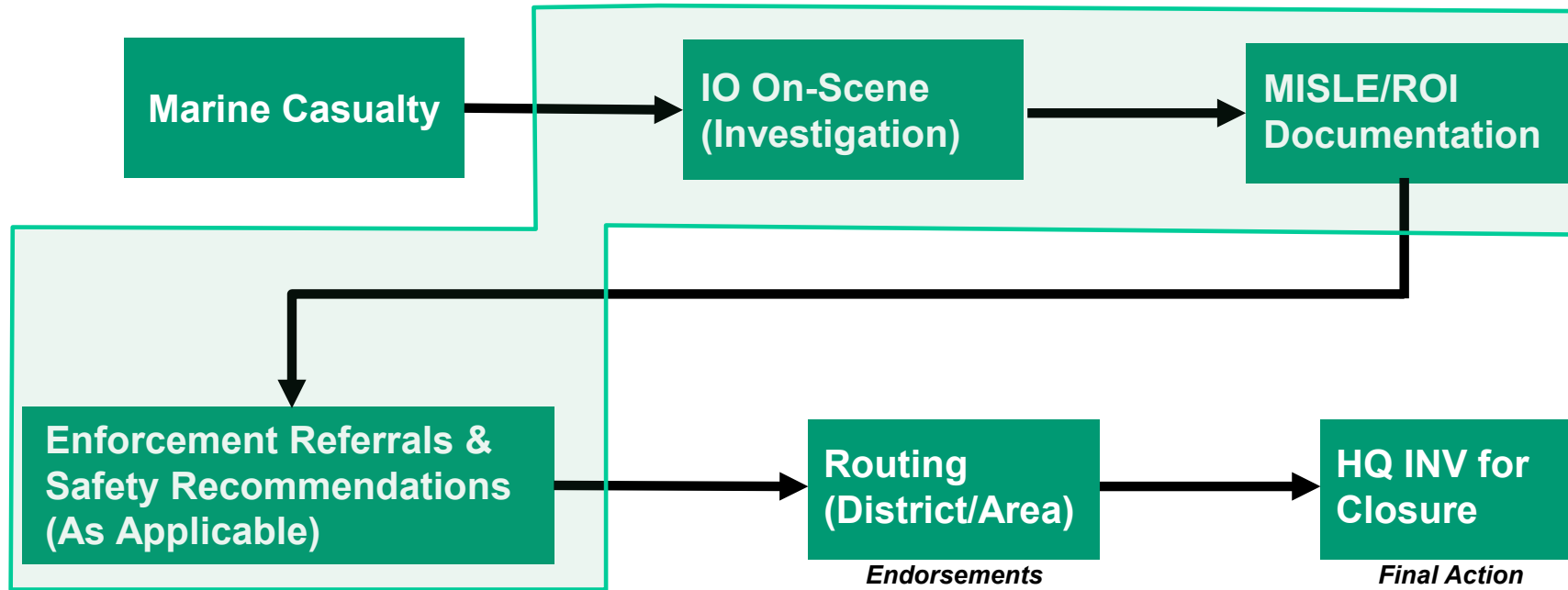


## Designations of Marine Casualties

- Major Marine Casualty
- Significant Marine Casualty
- Serious Marine Incident
- Routine Incident



# Marine Casualty Investigation Process



## GENERATE A TIMELINE

- Collect factual information regarding the incident
- Classify factual information into actions, events, and conditions
- Determine the sequence of actions, events, and conditions

## CONDUCT CAUSAL/HUMAN ERROR ANALYSIS

- Identify the initiating and subsequent events (from the Events list)
- Identify unsafe acts and decisions (from Actions list) and unsafe conditions (from Conditions list)
- Conduct human error analysis on identified unsafe acts and decisions
- Identify the latent unsafe conditions that contributed to the unsafe acts and decisions

## DRAW CONCLUSIONS

- Document the results of the causal and human error analysis

## ISSUE SAFETY RECOMMENDATIONS/ALERTS

- Identify and recommend actions to address and correct unsafe actions, decisions and conditions





## Investigations Related Data

- **MISLE Activity Structure**
  - Preliminary Investigation Activity (PIA)
  - Incident Investigation Activity (IIA)
  - Enforcement Activities (Civil Penalties, S&R, and referrals)
- **Party and Vessel associations and roles**
- **Timeline Entries**
  - **Actions:** Things people do
  - **Conditions:** Existing circumstances/states of being
  - **Events:** Things that happen to people or objects
- **Initiating Event:** The first unwanted or negative outcome in the timeline







# INV-2 Data Sources

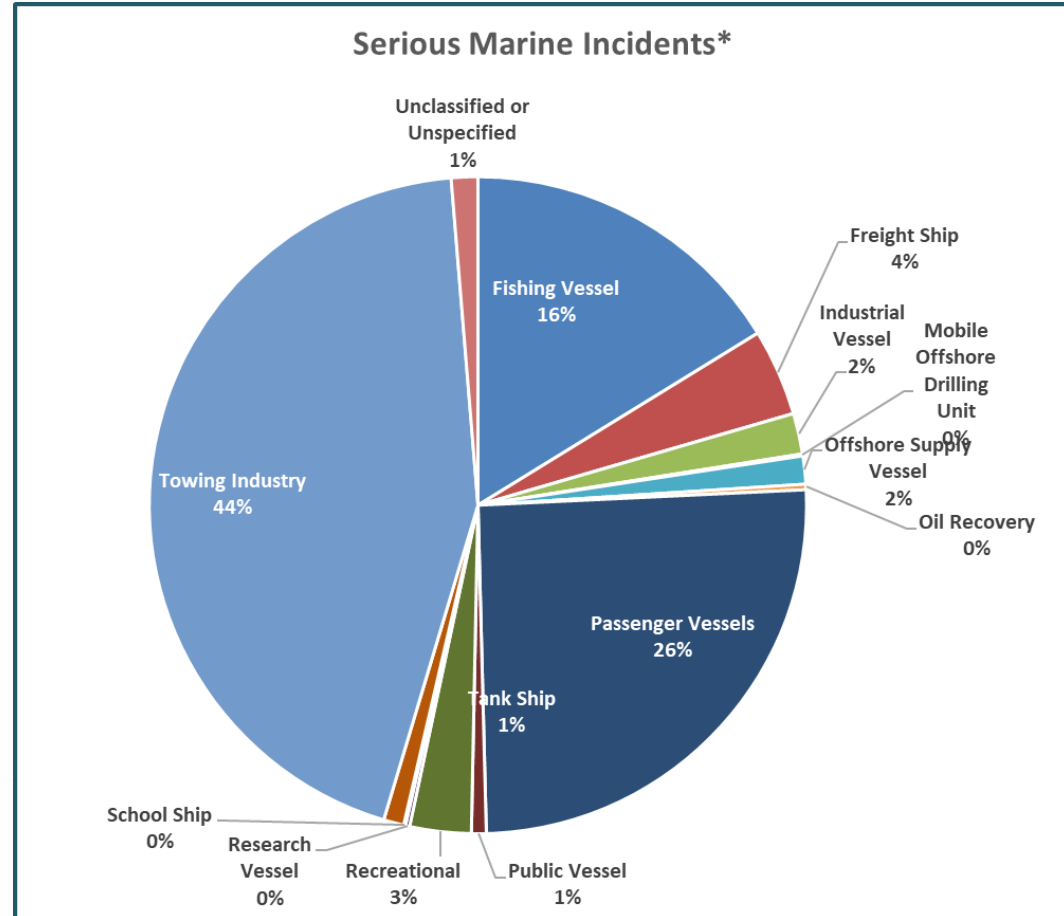
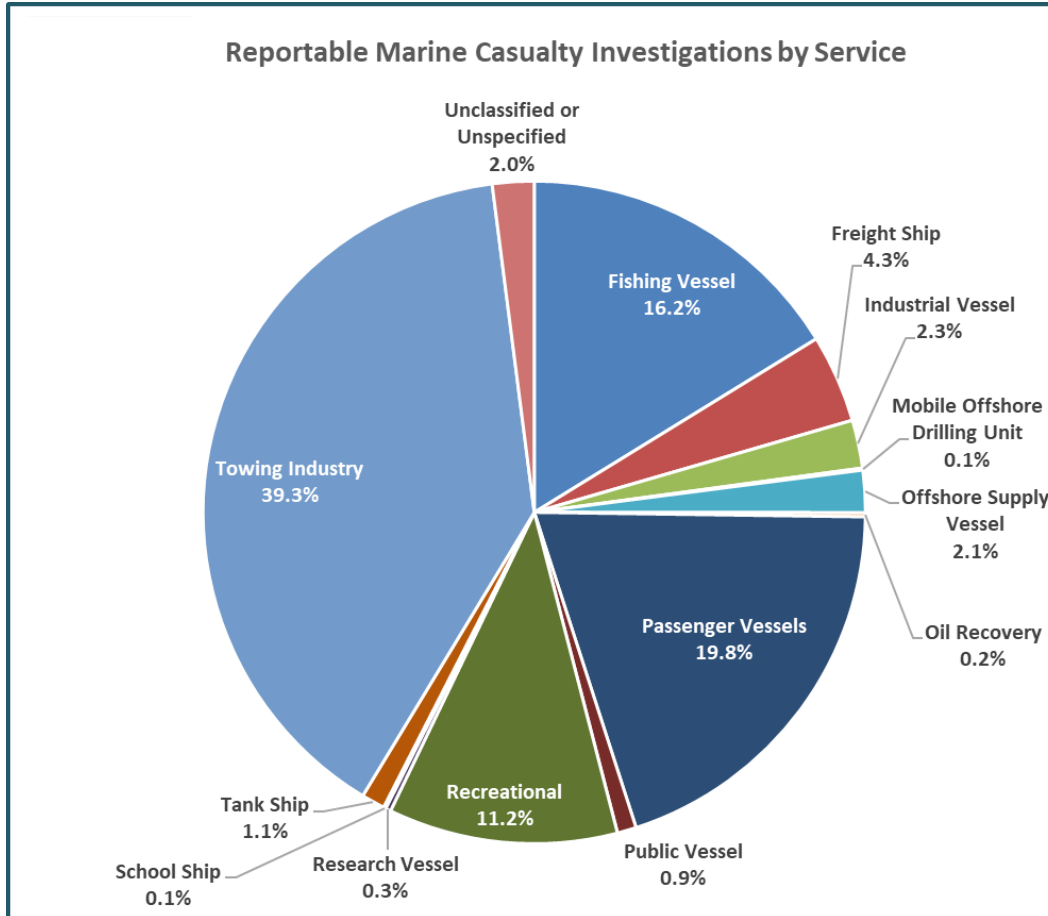


- ✓ **Marine Information for Safety and Law Enforcement (MISLE)**
- ✓ **Legacy CG Databases back to 1981 - Internal limited**
- ✓ **Coast Guard Business Intelligence (CGBI) - Internal**
- ✓ **MISLE Extract Partition using SQL - Internal**
- ✓ **Maritime Information eXchange (CGMIX) - External**
- ✓ **Port State Information eXchange (PSIX) - External**
- ✓ **External Data files**
  - Marine Casualty and Pollution Data file [[Link](#)]
  - Merchant Vessels of the United States Data file [[Link](#)]





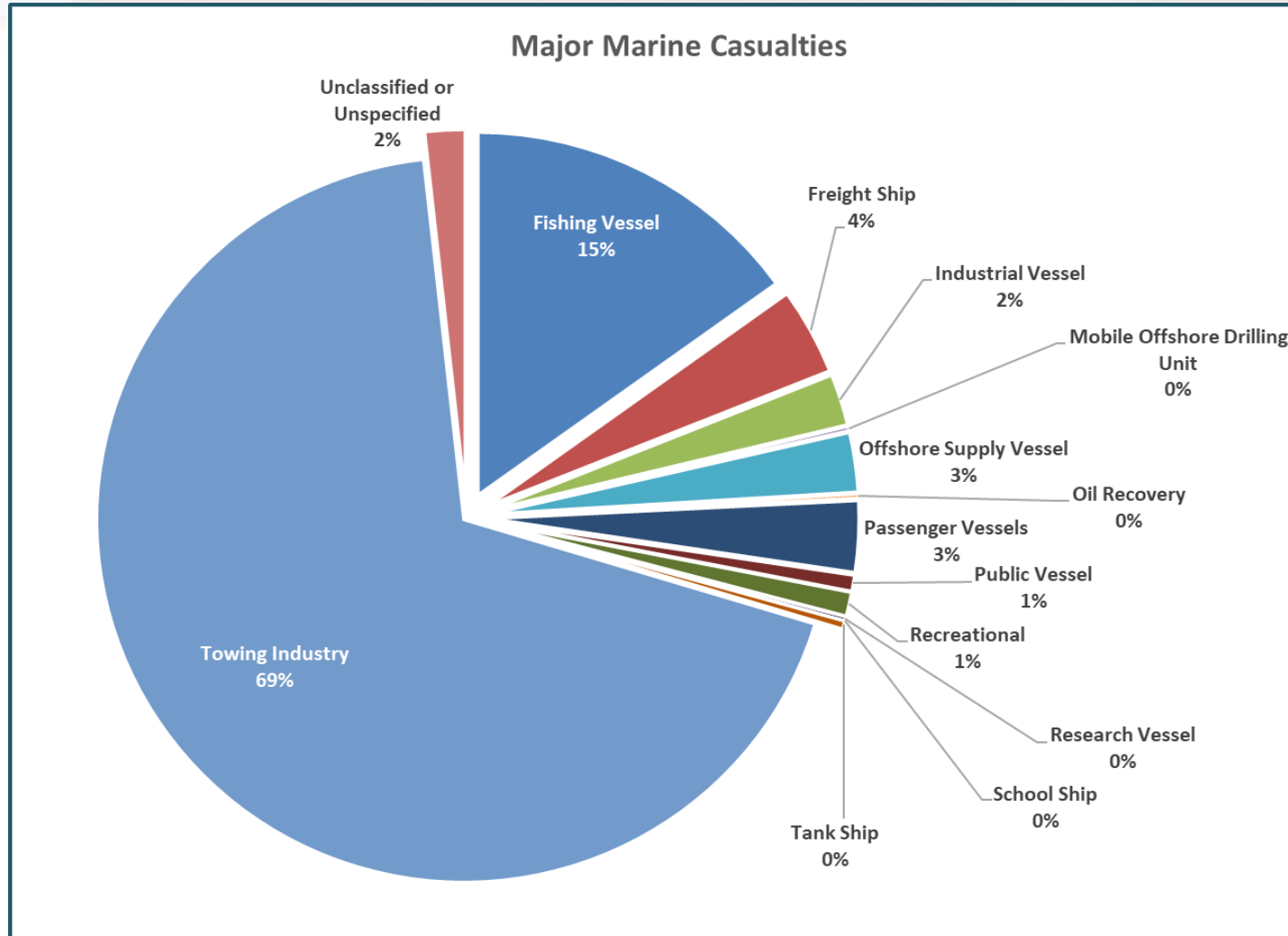
# Vessels Involved in Marine Casualties by Service (2010-2020)



\* Triggers post casualty drug and alcohol testing



# Major Marine Casualty by Vessel Type (2010-2020)







# Commercial Fishing Vessel - Fleet



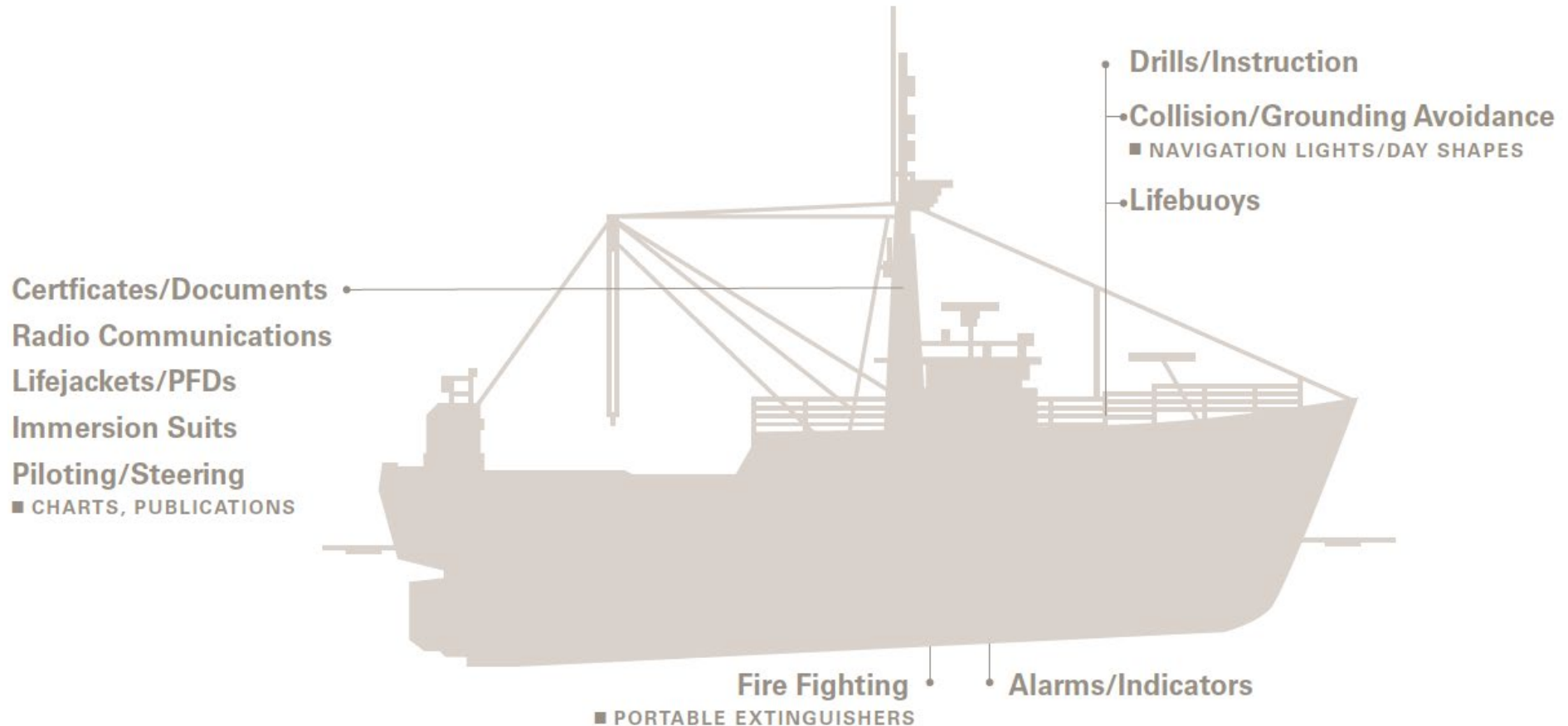
- The Coast Guard estimates that there are nearly 58,000 commercial fishing vessels in domestic service
- But there are only 17,000+ in MISLE
  - Those in the decal program and others that have been entered into MISLE because of a CG interaction (boarding, investigation, etc.)
- CFV Decal Program CY 2019

	Initial Dockside Exam	Dockside Renewal Exam	*CFVS Decals Issued	Exam Deficiencies Issued
Fish Catching Vessel	1,130	3,424	3,688	9,920
Fish Catching/Processing	2	35	57	168
Fishing Support Vessel/Tender	10	41	60	190
<b>Total</b>	<b>1,142</b>	<b>3,500</b>	<b>3,805</b>	<b>10,178</b>

\* Includes CFVS Decals issued under ALL types of CFVS exams.



## Top 10 Most Prevalent Deficiencies





## CFV Decal Program CY 2020

	Initial CFVS Examination	Dockside Renewal CFVS Examination	* CFVS Decals Issued	Deficiencies Found During CFVS Examination
Fish Catching Vessel	762	2,892	3,551	8,905
Fish Catch/Processing Vessel	0	27	52	134
Fish Tender	2	28	28	39
Totals	764	2,947	3,631	9,078

## 2020 CFV Exam - Top 10 Deficiency Categories

Lifesaving	2,335	PFDs and Immersion suits
Communications	1,399	Radio Communications and Alarms/Indicators
Navigation	1,236	Grounding/Collision Avoidance and Pilot/Steering
Documentation	1,163	Certificates/Documents and Markings/Placards
Operations / Management	739	Drills/Instruction and Drug & Alcohol Testing
Fire Fighting	701	Portable Fire Extinguishers
Personnel	309	Certificates/Documentation/Licenses and Manning/Qualifications
Accommodations / Occupational Safety	244	Occupational Safety and Medical/First Aid
Pollution Prevention	109	Prevention Equipment
Engineering	88	Bilge Water Management System
Other Deficiencies	755	Sum of other deficiency categories
<b>Total</b>	<b>9,078</b>	



# Additional CFV Fleet Data

**CFV Status by Vessel Subtype**

Vessel Status	Fish Catching Vessel	Fishing Catching/Processing Vessel	Fishing Support Vessel	Totals:
Abandoned	1			1
Active	16,826	93	91	17,010
Destroyed	9			9
Inactive	34		1	35
Laid Up	7			7
Scrapped	4		1	5
Sunk-Not Recoverable	18			18
Unknown	47			47
<b>Totals:</b>	<b>16,946</b>	<b>93</b>	<b>93</b>	<b>17,132</b>

**CFV Tonnages by Vessel Subtype**

Tonnage Grouping	Fish Catching Vessel	Fishing Catching/Processing Vessel	Fishing Support Vessel	Totals:
UNSPECIFIED	32			32
5 - 99.9	14,756	35	35	14,826
100 - 199.9	2,006	17	49	2,072
200 - 1599.9	127	29	8	164
>=1,600	25	12	1	38
<b>Totals:</b>	<b>16,946</b>	<b>93</b>	<b>93</b>	<b>17,132</b>

**CFVs by Age**

Keel Laid Date	Count
Blank	16,882
July 1, 2013- Present	9
Prior to July 1, 2013	241
<b>Total:</b>	<b>17,132</b>

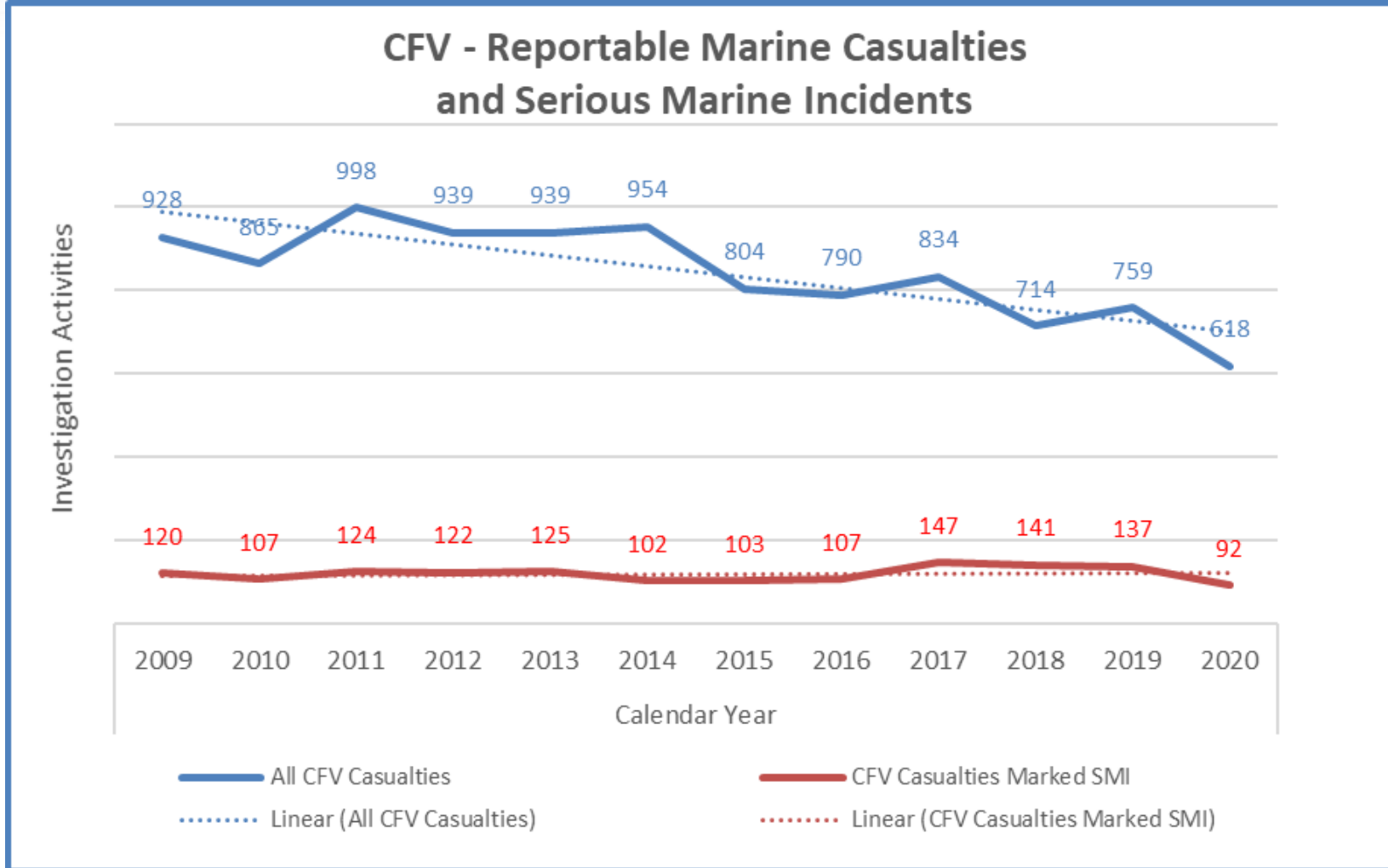
**CFV Fleet with International or Coastwise Loadline Certificates**

Vessel Length	Fish Catching Vessel	Fishing Catching/Processing Vessel	Fishing Support Vessel	Totals:
<78.9 ft.	0	0	0	0
79-199.9 ft.	20	9	6	35
200-300 ft.	10	10	2	22
>300 ft.	4	1	0	5
<b>Totals:</b>	<b>34</b>	<b>20</b>	<b>8</b>	<b>62</b>





# CFV Marine Casualty Data

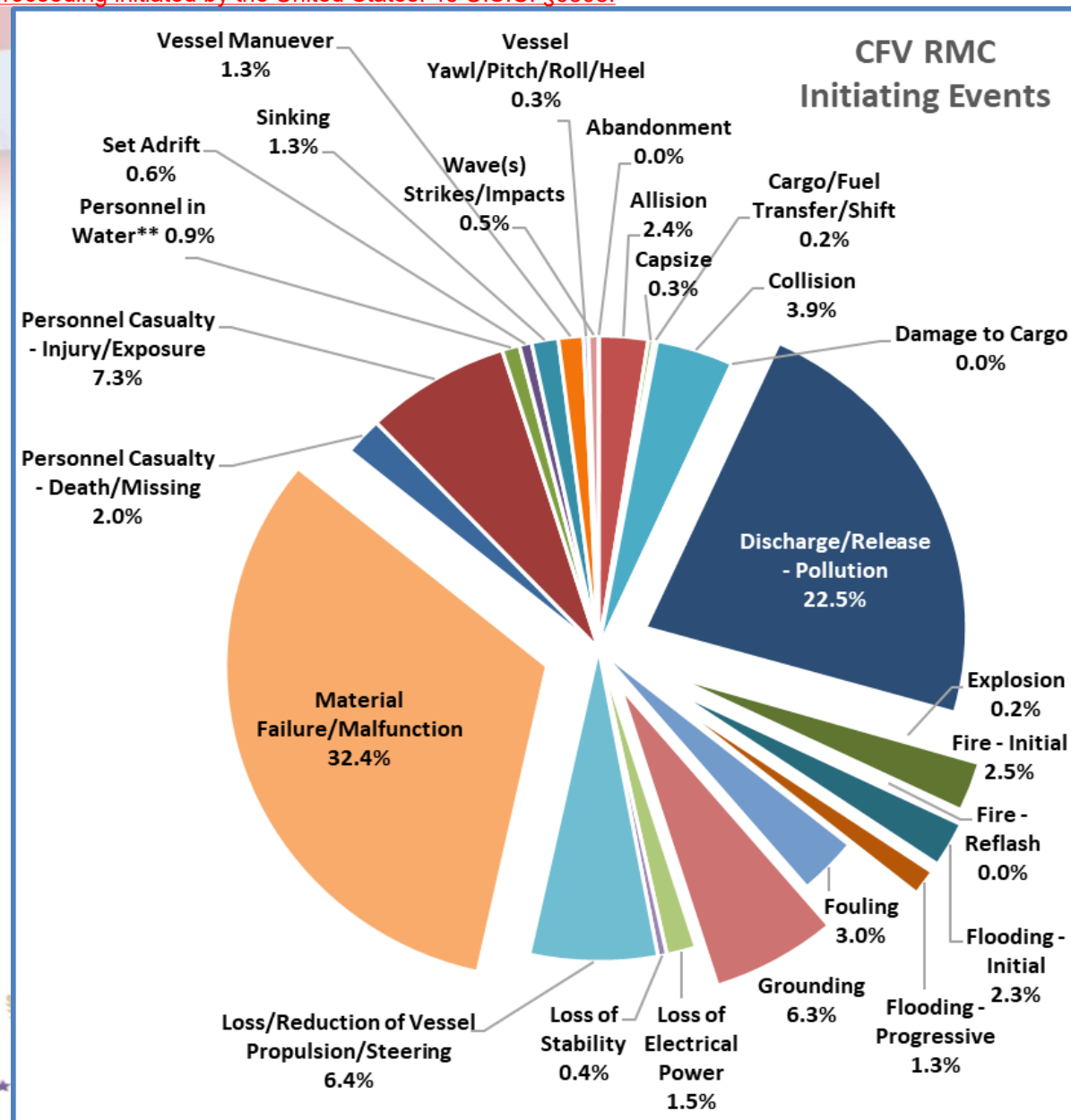






## CFV Reportable Marine Casualties (RMC) by Initiating Event (2010-2020)

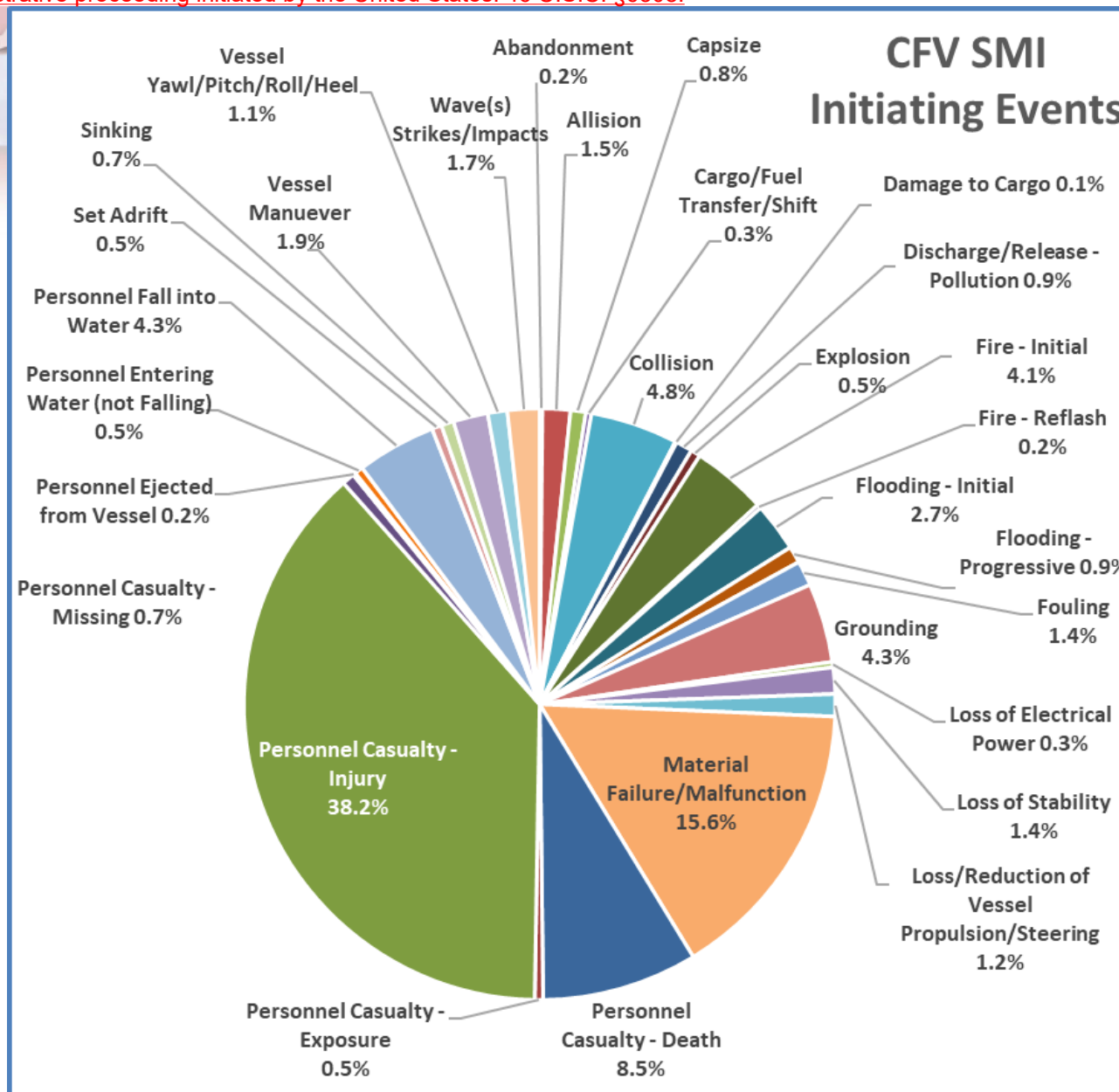
- Material Failures – 32.4%
- Pollution Incidents – 22.5%
- Personnel Casualties – 9.3%





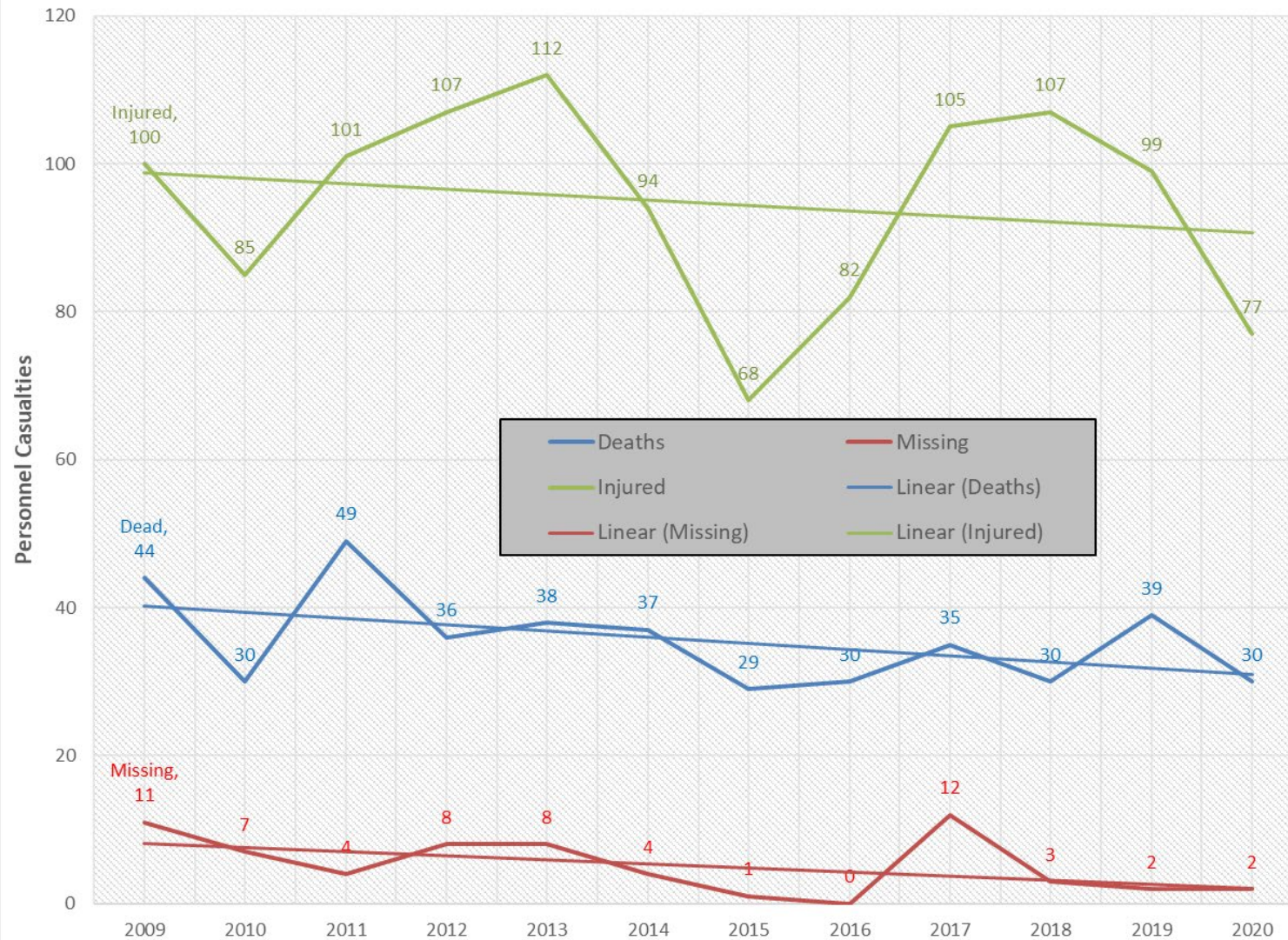
# CFV Serious Marine Incidents (SMI) by Initiating Event (2010-2020)

- Personnel Casualties – 47.9%
- Material Failures – 15.6%
- Collisions/Allisions – 6.3%

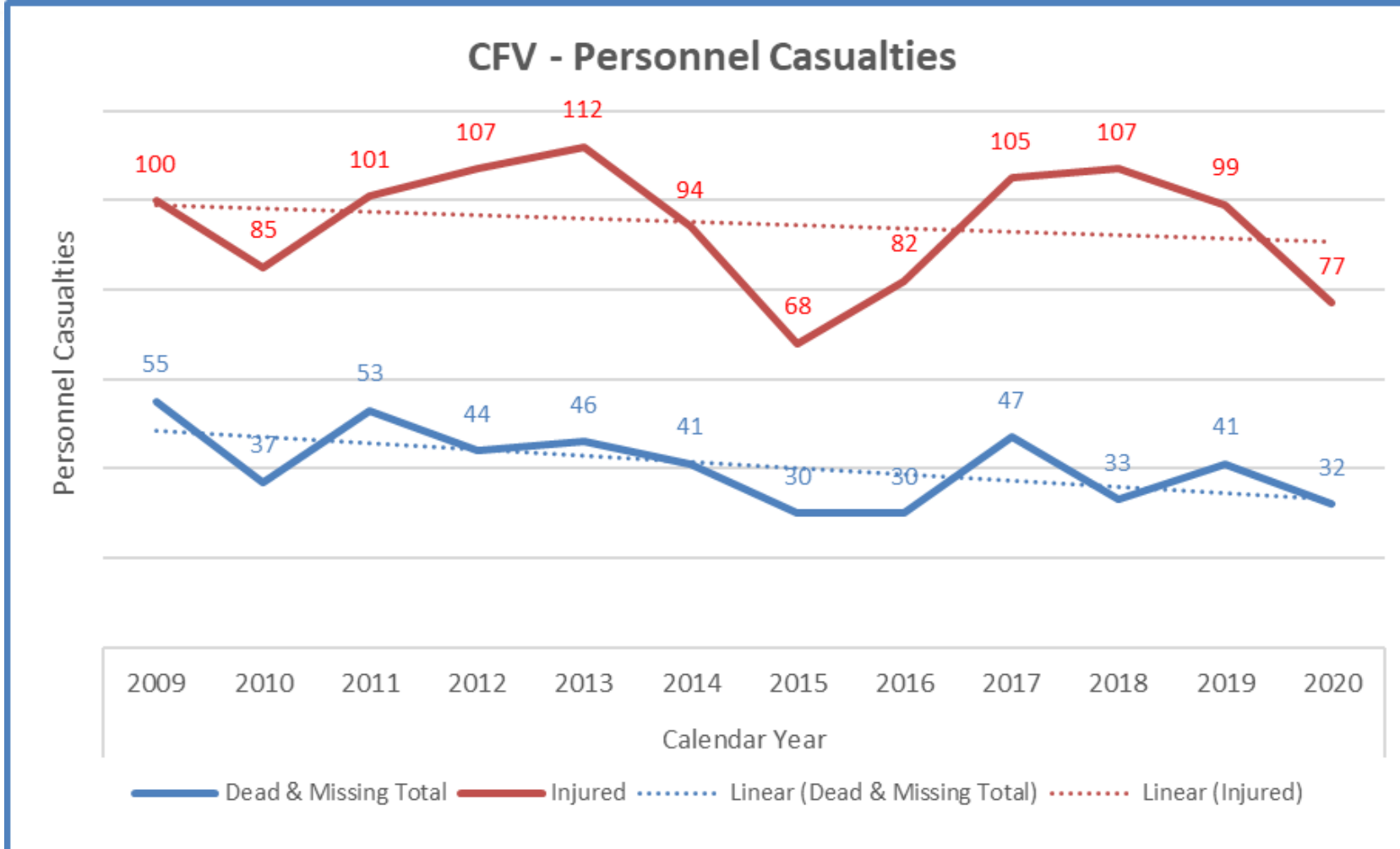




### Commercial Fishing Vessel Personnel Casualties









# CFV Personnel Casualties by Accident Type

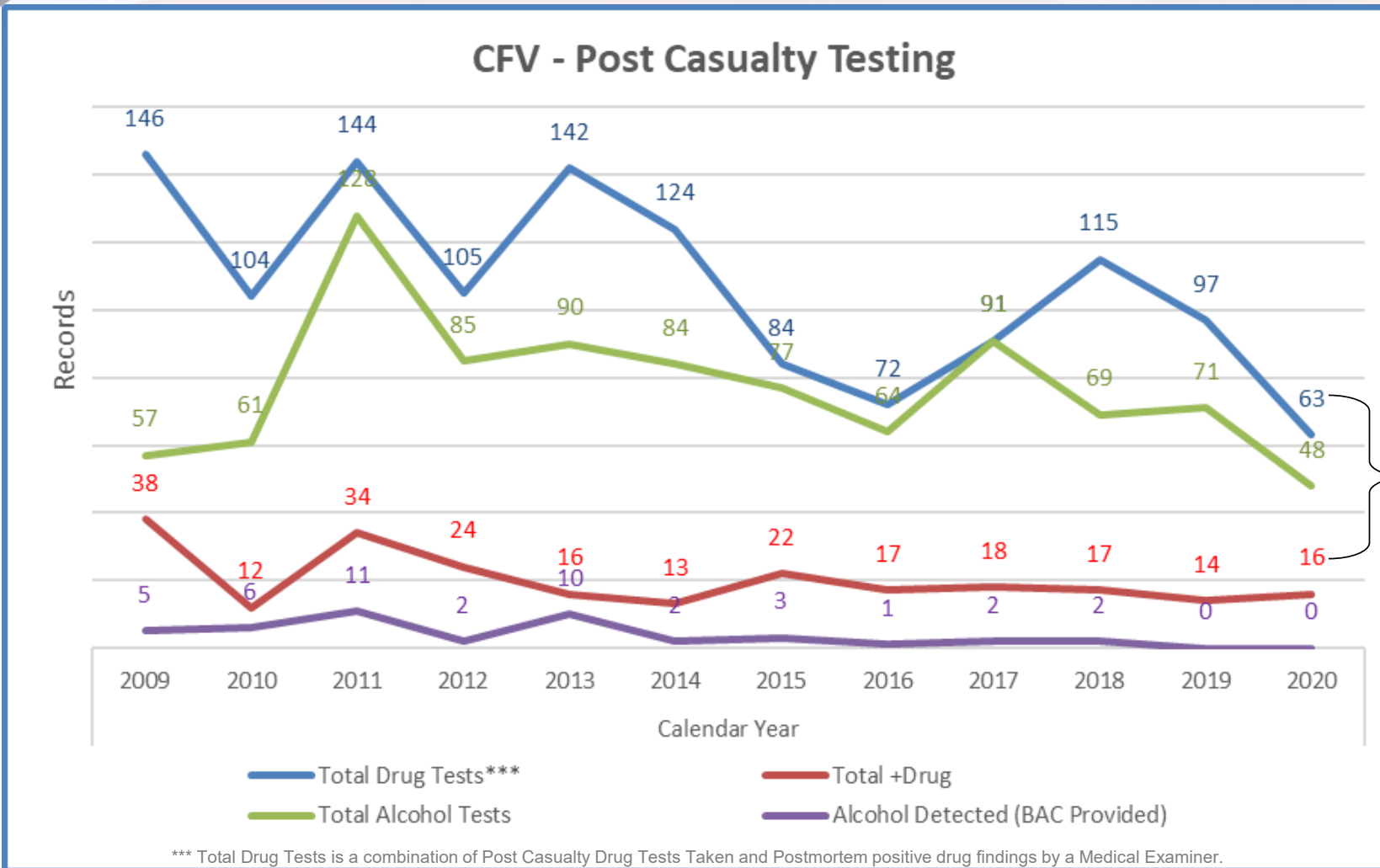


CFV Injuries by Accident Type	
Contact Injury- Struck by Moving Object	18.8%
Contact Injury- Crushed between objects	16.7%
Contact Injury- Fall onto surface	15.9%
Contact Injury- Line handling/caught in lines	10.0%
Contact Injury- Collision with Fixed Object	8.7%
Contact Injury- Other	8.5%
Overexertion Injury- Strain or sprain	4.1%
Noncontact Injury- Burn	3.5%
Other Injury Type	2.4%
Noncontact Injury- Exposure	1.9%
Contact Injury- Fall into water	1.7%
Existing Medical Condition Event	1.4%
Noncontact Injury- Other	1.3%
Assault, Homicide, Suicide, or Self-Inflicted Injury	1.2%
Unknown Injury Type	1.2%
Noncontact Injury- Dangerous Atmosphere	0.8%
Noncontact Injury- Diving	0.7%
Overexertion Injury- Existing medical condition	0.3%
Noncontact Injury- Accidental Poisoning	0.3%
Noncontact Injury- Asphyxiation	0.2%
Noncontact Injury- Electric Shock	0.2%
Diseases- General	0.2%

CFV Fatalities by Accident Type	
Existing Medical Condition Event	18.8%
Contact Injury- Fall into water	14.0%
Noncontact Injury- Asphyxiation	12.8%
Unknown Injury Type	10.6%
Noncontact Injury- Other	6.8%
Other Injury Type	6.3%
Assault, Homicide, Suicide, or Self-Inflicted Injury	4.6%
Diseases- General	4.1%
Contact Injury- Struck by Moving Object	3.9%
Noncontact Injury- Diving	3.4%
Contact Injury- Line handling/caught in lines	2.2%
Noncontact Injury- Exposure	2.2%
Contact Injury- Crushed between objects	1.9%
UNSPECIFIED	1.7%
Contact Injury- Other	1.4%
Overexertion Injury- Existing medical condition	1.2%
Contact Injury- Collision with Fixed Object	1.0%
Contact Injury- Fall onto surface	1.0%
Noncontact Injury- Burn	1.0%
Noncontact Injury- Accidental Poisoning	0.7%
Noncontact Injury- Electric Shock	0.2%
Noncontact Injury- Dangerous Atmosphere	0.2%







\*\*\* Total Drug Tests is a combination of Post Casualty Drug Tests Taken and Postmortem positive drug findings by a Medical Examiner.

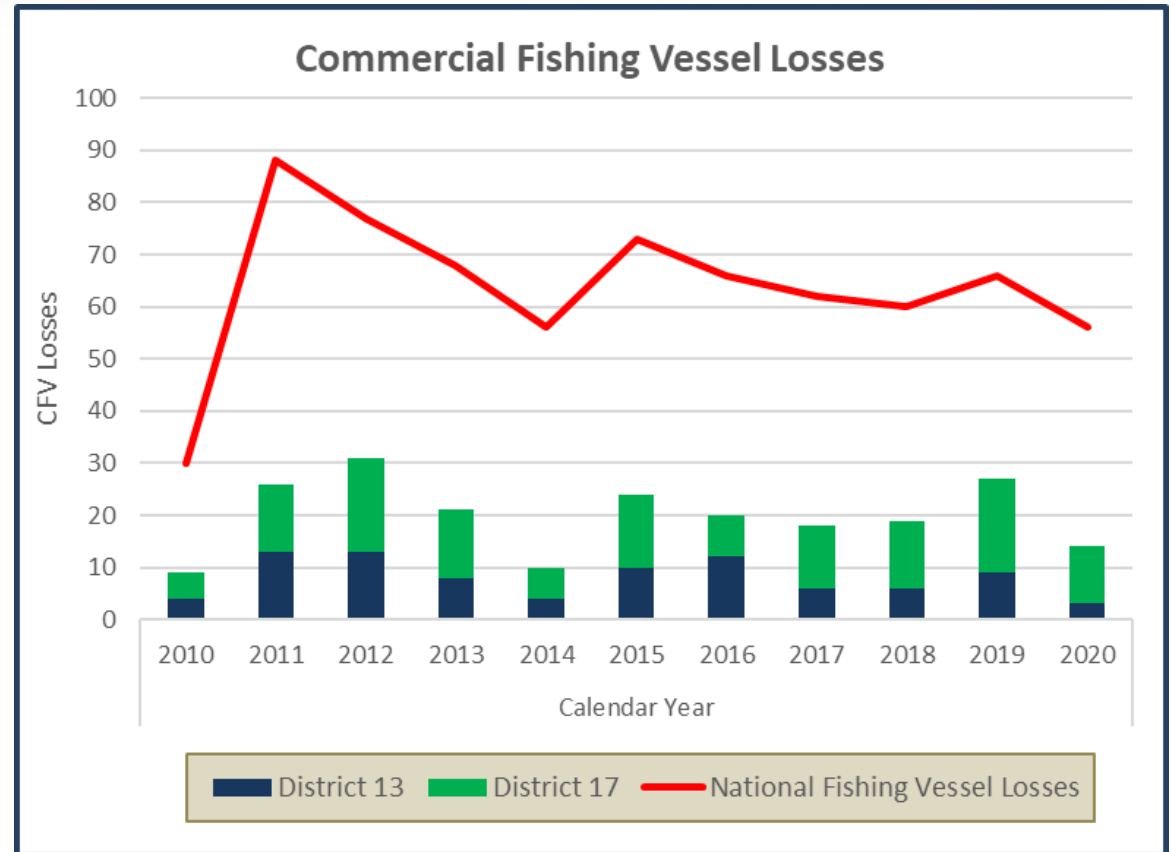


# All CFV Losses vs. D13 & D17



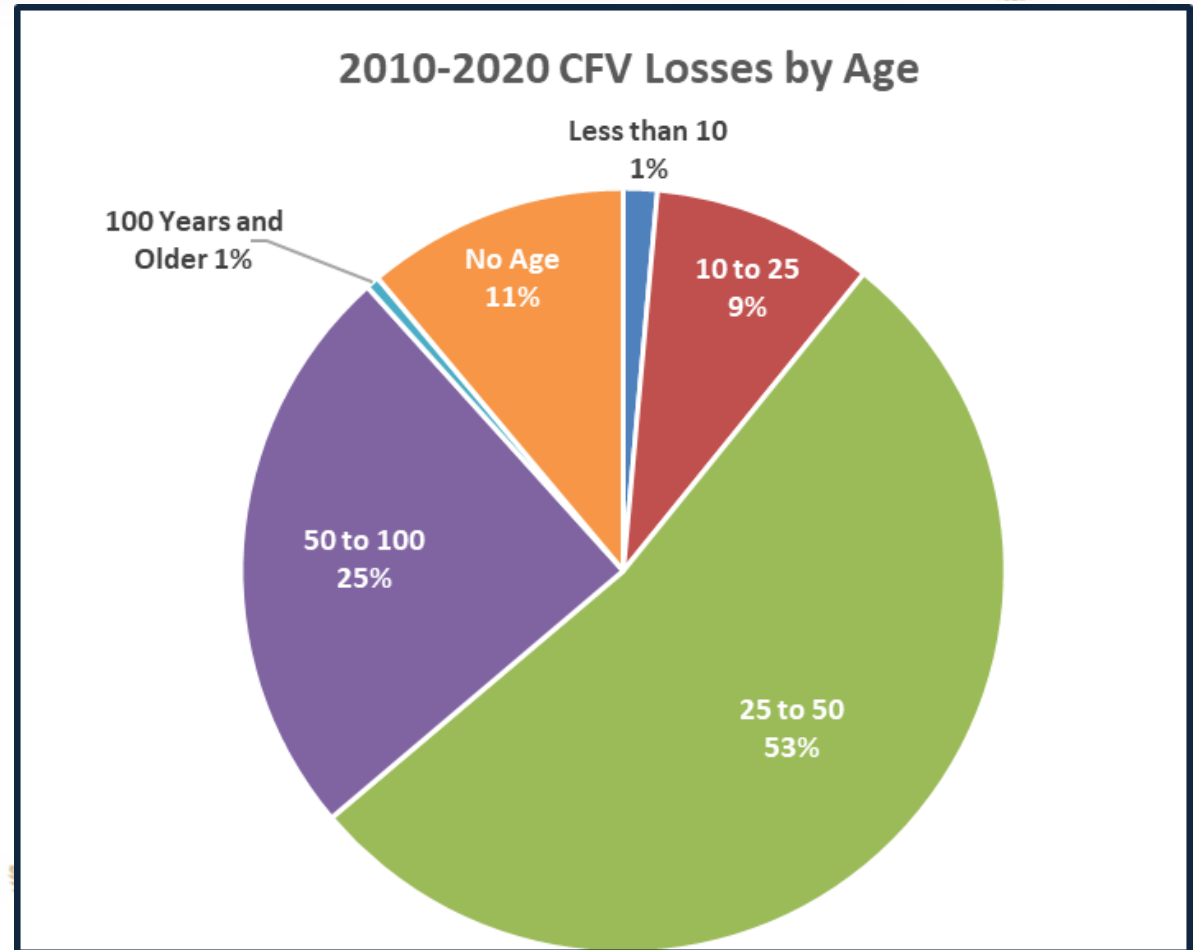
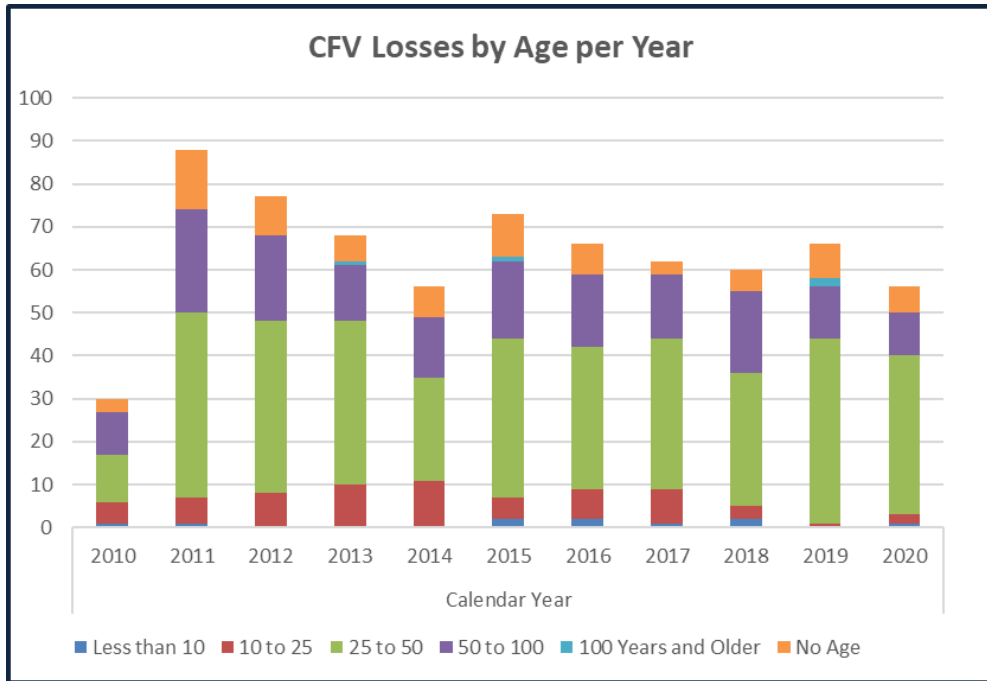
CFV Losses by District	Calendar Year											Total
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
District 01	4	9	17	16	14	17	9	6	10	5	6	113
District 05	1	6	5	4	4	8	7	2	4	4	6	51
District 07	6	7	10	12	9	6	7	9	9	11	6	92
District 08	8	19	6	14	12	11	12	14	12	13	21	142
District 09		2					1					3
District 11	2	17	7	1	5	4	9	11	4	5	3	68
District 13	4	13	13	8	4	10	12	6	6	9	3	88
District 14		2	1		2	3	1	2	2	1		14
District 17	5	13	18	13	6	14	8	12	13	18	11	131
National Fishing Vessel Losses	30	88	77	68	56	73	66	62	60	66	56	702

Approximately 30% of the CFV losses over the past decade have occurred in the Pacific Northwest (USCG D13 and D17)





# CFV Losses by Vessel Age





# USCG Safety Recommendations



- **Purpose:** Identify corrective actions for identified unsafe conditions or other unwanted outcomes in order to prevent future casualties and improve safety of life at sea as required in 46 USC 6301.
- **Policy:**
  - Marine Safety Manual Vol V, Chapter 1, Part B, Section A.6 [[LINK](#)]
  - CG-INV Policy Letter 002-2018 [[LINK](#)]





# USCG Safety Recommendations



## CG Safety Recommendations

SR Review Status	All	CFV
Final Agency Action	5,497	881
Forwarded	1,041	297
Drafted	287	59
Canceled	93	37
Return for Revision	12	4
<b>Total:</b>	<b>6,930</b>	<b>1,278</b>

*Recommendation counts presented are from the period from 1990 to 2020. Those counted as “CFV” indicate that the incident itself involved a CFV, not that the recommendation is directed at fishing vessel safety. Additional review would be required.*

- **Of the nearly 7,000 SRs ever issued**
  - Nearly 5,500 have been adjudicated (79%)
  - **18.4% come from a case involving a CFV**
  - **1,000+ forwarded, to the district or CGHQ**
    - **90% are with CGHQ** (28% of these are from a case involving a CFV)
- **Regardless of status, SRs are living and can influence policy and regulatory decisions.**







<b>Keyword Counts within CFV Safety Recommendations</b>									
<b>SR Status</b>	<b>"training"</b>	<b>"license"</b>	<b>"credential"</b>	<b>"drug"</b>	<b>"alcohol"</b>	<b>"inspect"</b>	<b>"exam"</b>	<b>"regulation"</b>	<b>"stability"</b>
Final Agency Action	80	36	7	27	12	127	114	145	103
Forward	47	19	17	14	5	67	59	119	24
Draft	10	2	2	2	0	12	11	10	8
Canceled	2	7	0	0	0	6	7	12	0
Return for Revision	0	0	0	0	0	1	1	4	0
<b>Total:</b>	<b>139</b>	<b>64</b>	<b>26</b>	<b>43</b>	<b>17</b>	<b>213</b>	<b>192</b>	<b>290</b>	<b>135</b>

*The above reflects individual counts where the “KEYWORD” was included at least once within the safety recommendation’s text from IIAs involving a CFV.*





# NTSB Safety Recommendations to the USCG



## All NTSB Safety Recommendations to the USCG

Safety Recommendation Status	Count
Closed - Acceptable Action	685
Closed - Unacceptable Action	308
Closed - Acceptable Alternate Action	153
Open - Acceptable Response	61
Closed - Reconsidered	58
Open - Unacceptable Response	30
Closed - No Longer Applicable	26
Closed - Superseded	19
Closed - Unacceptable Action/Superseded	18
Issued to CG for Information Only	17
Open - Awaiting Response	16
Open - Acceptable Alternate Response	4
Closed - Acceptable Action/Superseded	2
Closed - Action Exceeds Recommended Action	1
Closed Acceptable Action	1
Closed - Unacceptable Response/Superseded	1
Closed - Acceptable Alternate Response	1
<b>Total:</b>	<b>1,401</b>

## NTSB Safety Recommendations to the USCG containing "fish"

Safety Recommendation Status	Count
Closed - Acceptable Action	33
Closed - Acceptable Alternate Action	15
Closed - Unacceptable Action	11
Open - Unacceptable Response	3
Closed - Reconsidered	2
<b>Total:</b>	<b>64</b>

*Recommendation counts are from the period from 1967 to 2020.*





# NTSB Safety Recommendations to the USCG



## NTSB Safety Recommendations to the USCG containing "fish" broken down by other "KEYWORDS"

NTSB Status	"train"	"license"	"credential"	"drug"	"alcohol"	"inspect"	"exam"	"regulation"	"stability"
Closed - Acceptable Action	1	0	0	0	0	7	1	2	5
Closed - Acceptable Alternate Action	2	0	0	0	0	9	0	1	1
Closed - Reconsidered	0	0	0	0	0	0	0	0	0
Closed - Unacceptable Action	0	1	0	1	1	3	0	3	0
Open - Unacceptable Response	2	0	0	0	0	0	0	0	2
<b>Total:</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>19</b>	<b>1</b>	<b>6</b>	<b>8</b>

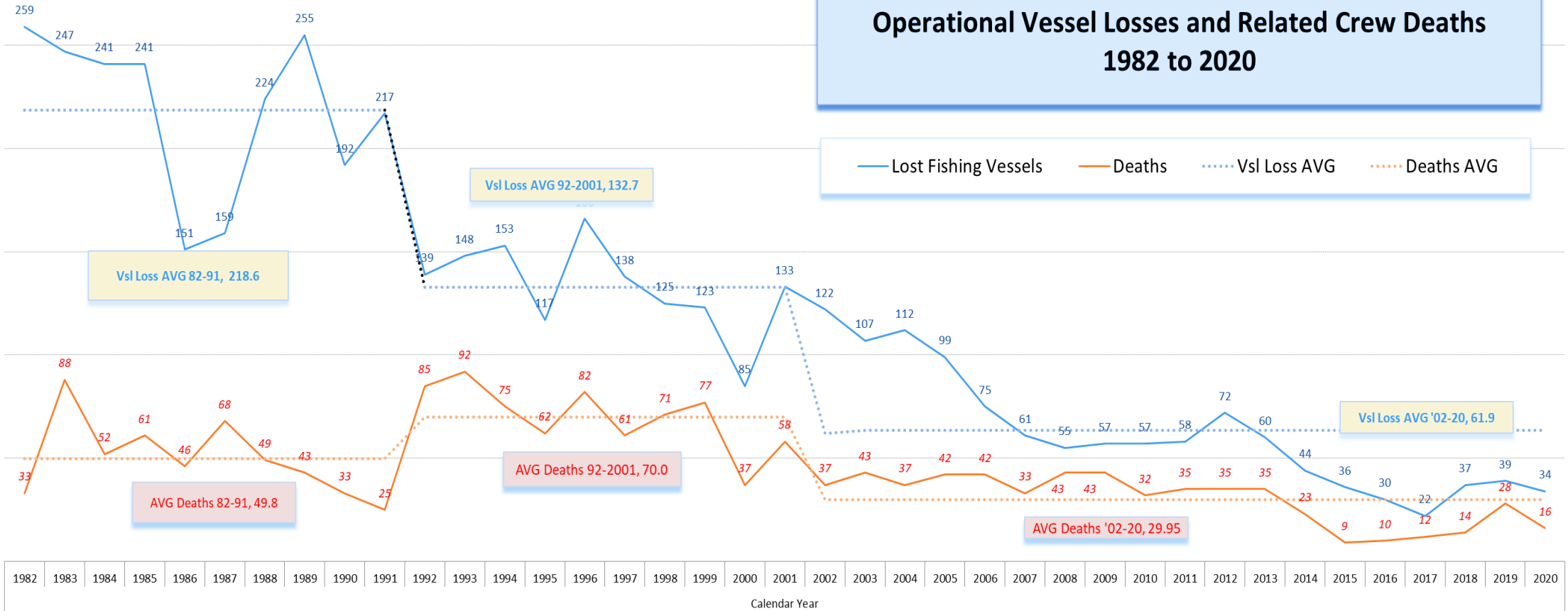
*The above reflects individual counts where the "KEYWORD" was used at least once within a NTSB safety recommendation to the USCG that also included the word "fish".*





# 38 years of improved CFV Safety

## Commercial Fishing Vessel Statistics Operational Vessel Losses and Related Crew Deaths 1982 to 2020

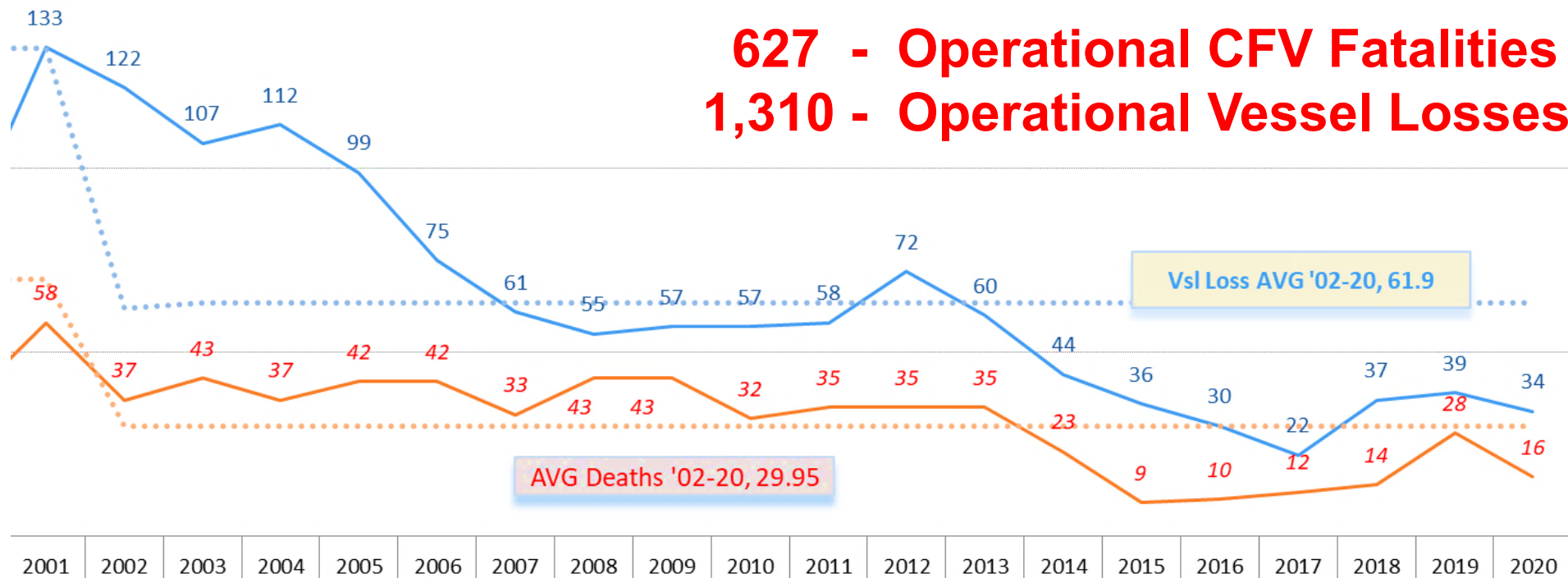






# Past 20 years

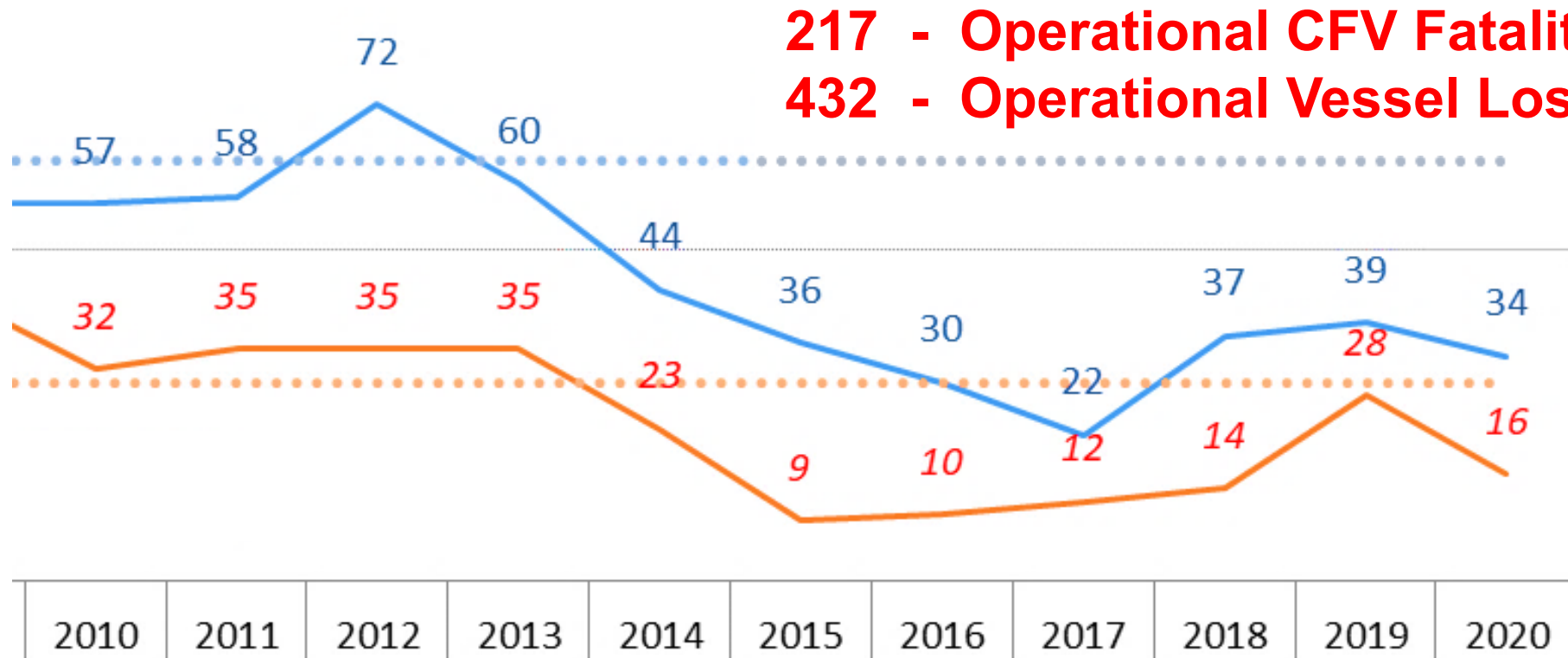
— Lost Fishing Vessels    — Deaths    ..... Vsl Loss AVG    ..... Deaths AVG





# Past 10 years

— Lost Fishing Vessels    — Deaths    ..... Vsl Loss AVG    ..... Deaths AVG



**217 - Operational CFV Fatalities**  
**432 - Operational Vessel Losses**



# Questions / Contact Info



**Baxter B. Smoak, CDR**  
Chief, Compliance Analysis Division (CG-INV-2)

U.S. Coast Guard Headquarters  
Office of Investigations and Analysis (CG-INV)  
2703 Martin Luther King Jr. Avenue SE, Stop 7501  
Washington, D.C. 20593-7501  
Email: [Baxter.B.Smoak@uscg.mil](mailto:Baxter.B.Smoak@uscg.mil)  
Phone: 202-372-1040

