NIOSH Commercial Fishing Safety Research and Design Program

Five-Year Update of Regional Summaries

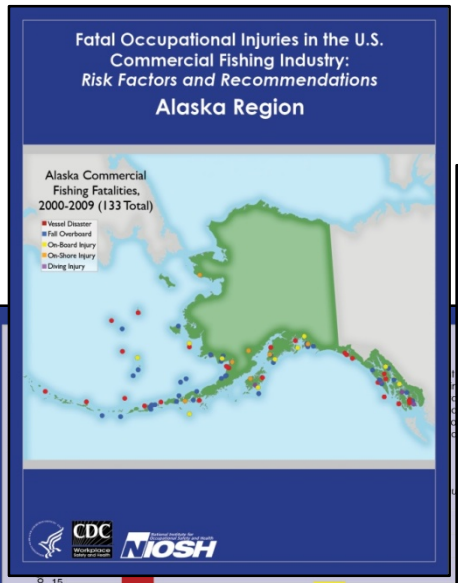
presented to the

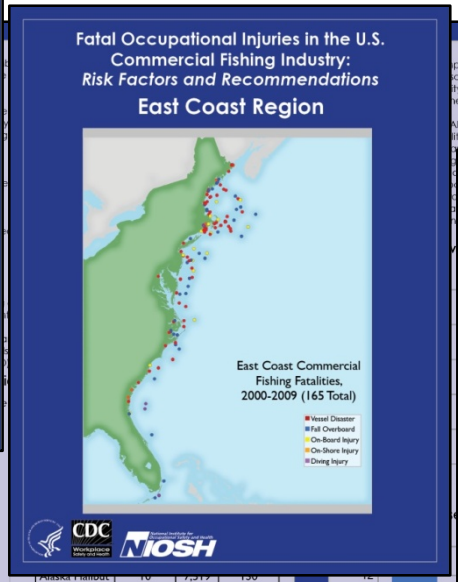
Commercial Fishing Safety Advisory Committee

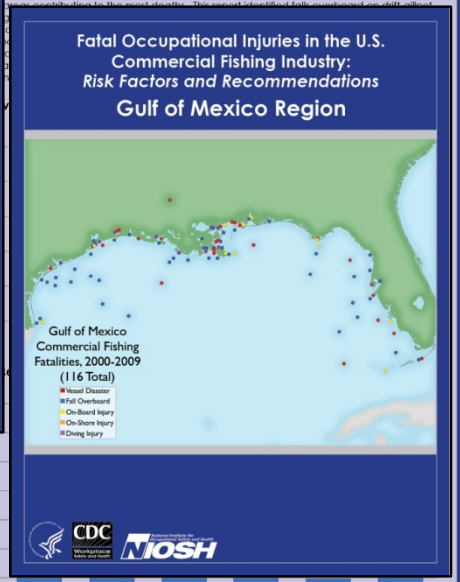
Savannah, GA | September 27, 2016

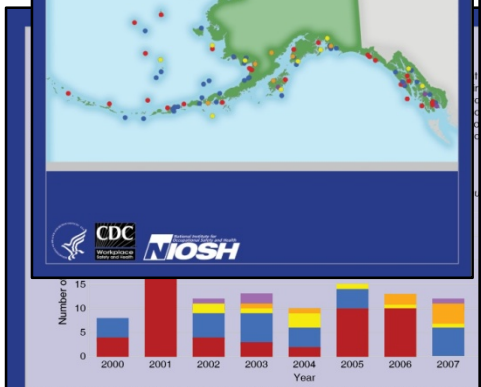
National Institute for Occupational Safety and Health
NIOSH™

Old Regional Summaries of Fatality Data





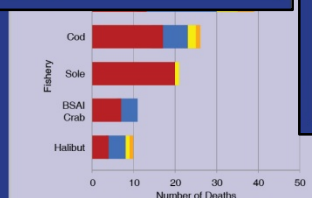




During the decade of 2000-2009, 133 commercial fishermen died while working in Alaskan w fatalities occurred in 2000 and 2009, with eight occupational deaths in each of those years. died on the job, including 15 in a single vessel disaster (Fig. 1). On average for the decade, 13 fishermen were killed per year. Half of the deaths were caused by drowning following vessel disasters (e.g. sinking, capsizing, fire, etc) in which the crew was forced to abandon ship (Fig. 2). Another 31% of fatalities were the result of falls overboard. The 12 fatal injuries sustained on-board were the result of being struck by gear (4, 33%), falling from height (3, 25%), getting caught in a deck winch (2, 17%), asphyxiation in a confined space (2, 17%), and a drug overdose (1, 8%).

Although vessel disasters contributed to the most fatalities during the decade as a whole, the incidents types varied from year to year. For example, in 2001 79% of fatalities resulted from vessel disasters, but in 2007 there were none related to a vessel disaster. In 2006 there were no fatal falls overboard, but in 2009 88% of deaths were caused by falls overboard.

Five fisheries contributed to 80% of fatalities in Alaska during 2000-2009 (Fig. 3). Fisheries with fewer than five deaths included black cod (Sablefish), sea cucumber, shrimp, herring, pollock, and others. The salmon fishery experienced the most occupational deaths with 39 fatalities. Falls overboard caused the most deaths among salmon fishermen (17, 44%). Almost all (13, 76%) occurred on drift-gillnet vessels and were usually the result of a trip or slip. Most (13, 76%) were not witnessed. Vessel disasters contributed to 33% of deaths in the salmon fishery. Most of these vessel disasters (8, 62%) occurred on set-net skiffs and were almost always (6, 75%) swamped and capsized in poor sea conditions. The cod and sole fisheries experienced the next highest number of fatalities during this time period (26 and 21 respectively). These fatalities occurred most often after a vessel disaster with multiple lives lost in each event.



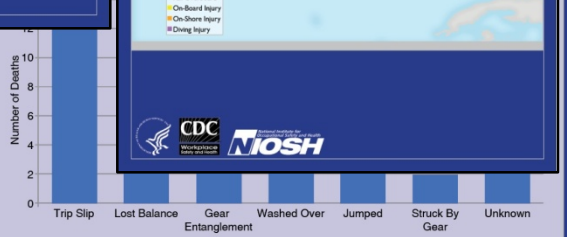
Alaska Salmon	39	34,287	115

** Rates were calculated by dividing the total number of fatalities for the 10 year period by the total annual FTE.*

Conclusions

The Coast Guard has developed tailored prevention programs for specific fisheries in Alaska that mitigate hazards found in high risk fisheries such as the Bering Sea crab fleet, as well as the Bering Sea Aleutian Island trawl fleet that fishes for sole and cod. As a result of these efforts, the fatality rate in the Bering Sea crab fisheries declined by 60% during 1990-2009. This improvement was due to the implementation of a preseason dockside enforcement effort developed by the Coast Guard in concert with vessel operators. Additionally, in 2005 the largest crab fisheries underwent changes in the way they were executed. The previous "race to fish" was "rationalized" meaning that each vessel was awarded the rights to catch a certain amount of crab. This change resulted in a slower paced fishery and a consolidation of the fleet. A different Coast Guard program known

Data Key
- Vessel Disaster
- Fall Overboard
- On-Board Injury
- On-Shore Injury
- Diving Injury



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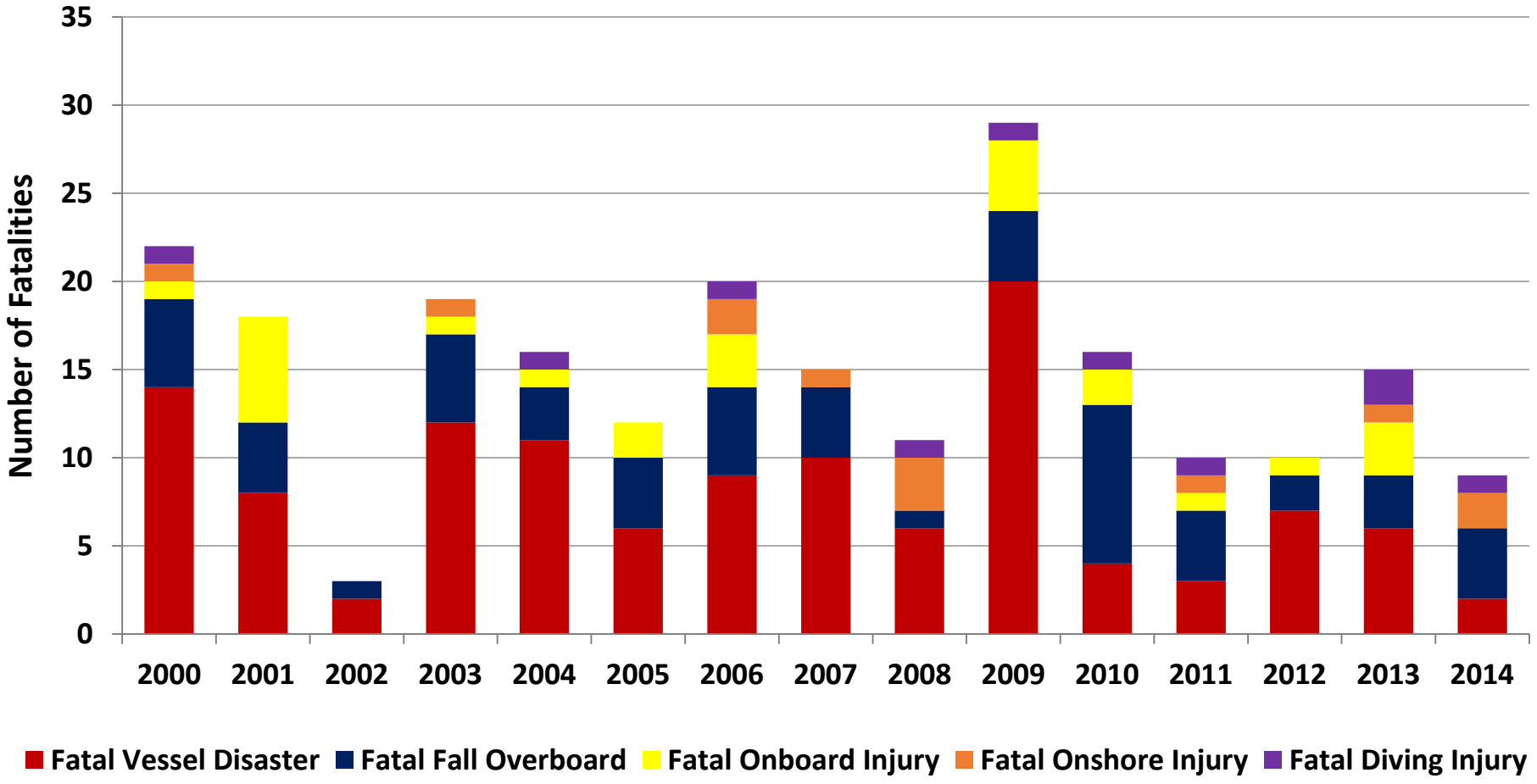
Five-Year Update

- East Coast, Gulf of Mexico, West Coast, Alaska
- 2010-2014:
  - Fatalities
  - Fatal and Nonfatal Vessel Disasters
- Identify region and fleet-specific hazards
- Tailored recommendations

East Coast

East Coast Commercial Fishing Fatalities by Year and Incident Type (n=225)



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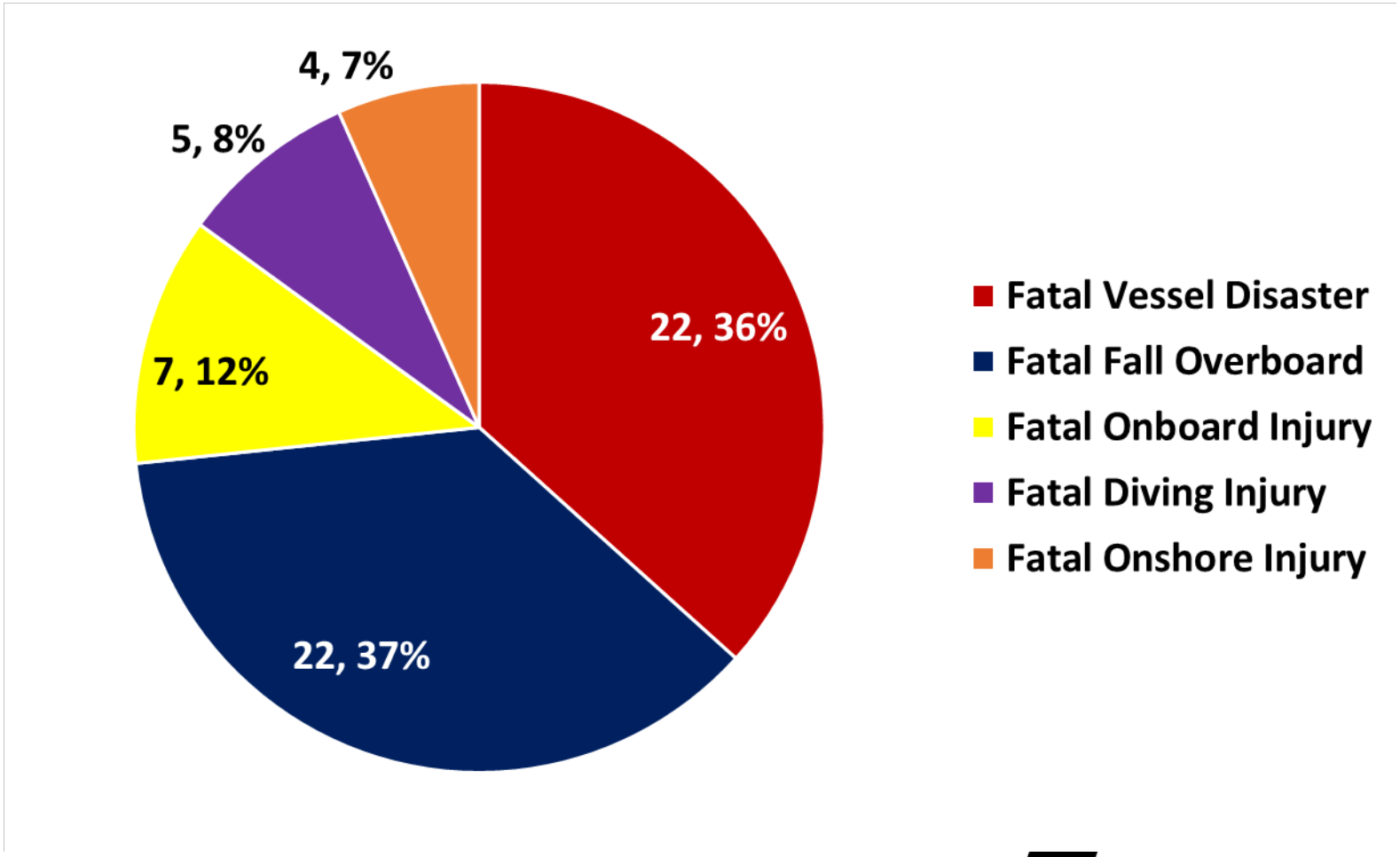
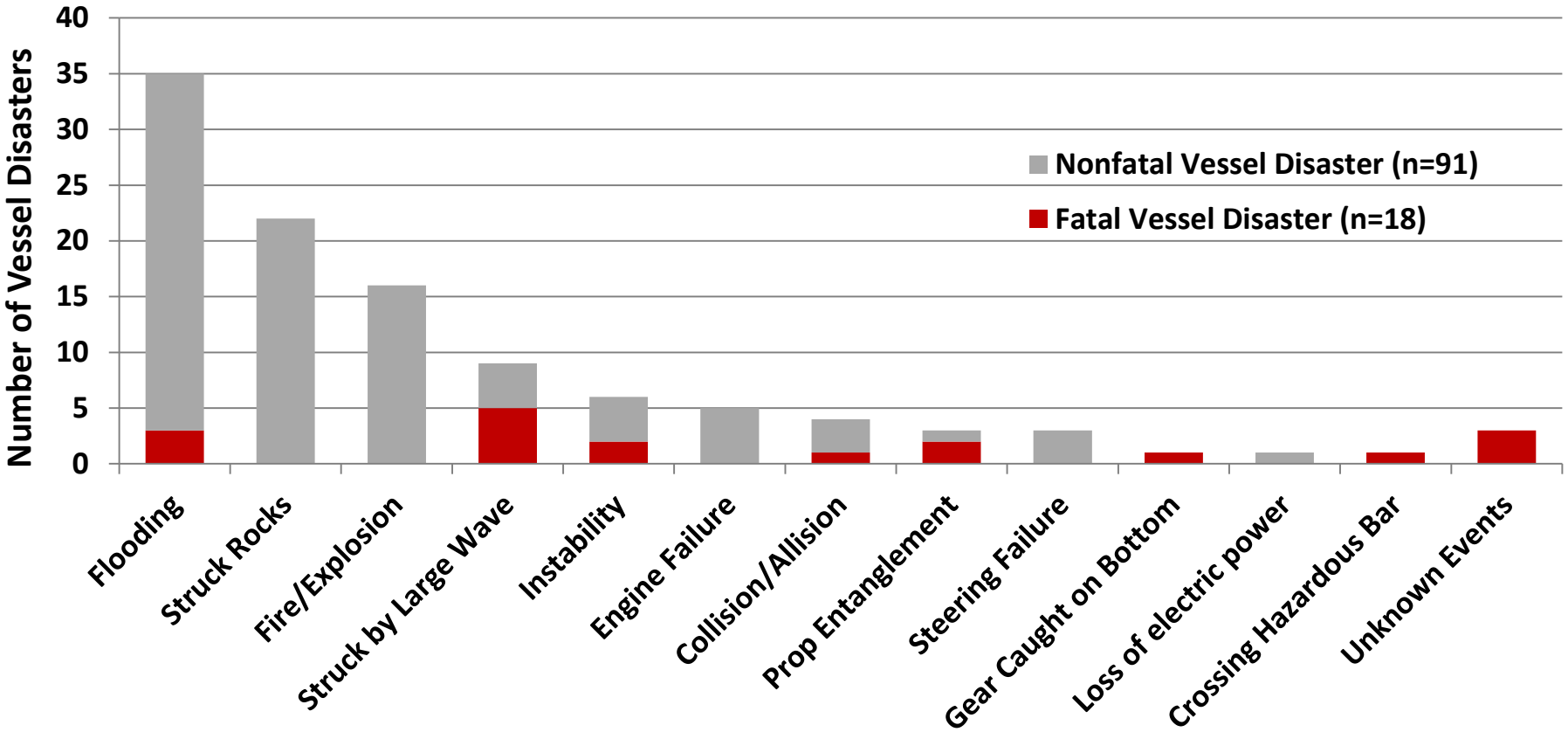
East Coast Commercial Fishing Fatalities by Incident Type, 2010-2014 (n=60)



Initiating Events of Vessel Disasters, East Coast, 2010-2014 (n=109)



242 crewmembers at risk; 22 deaths

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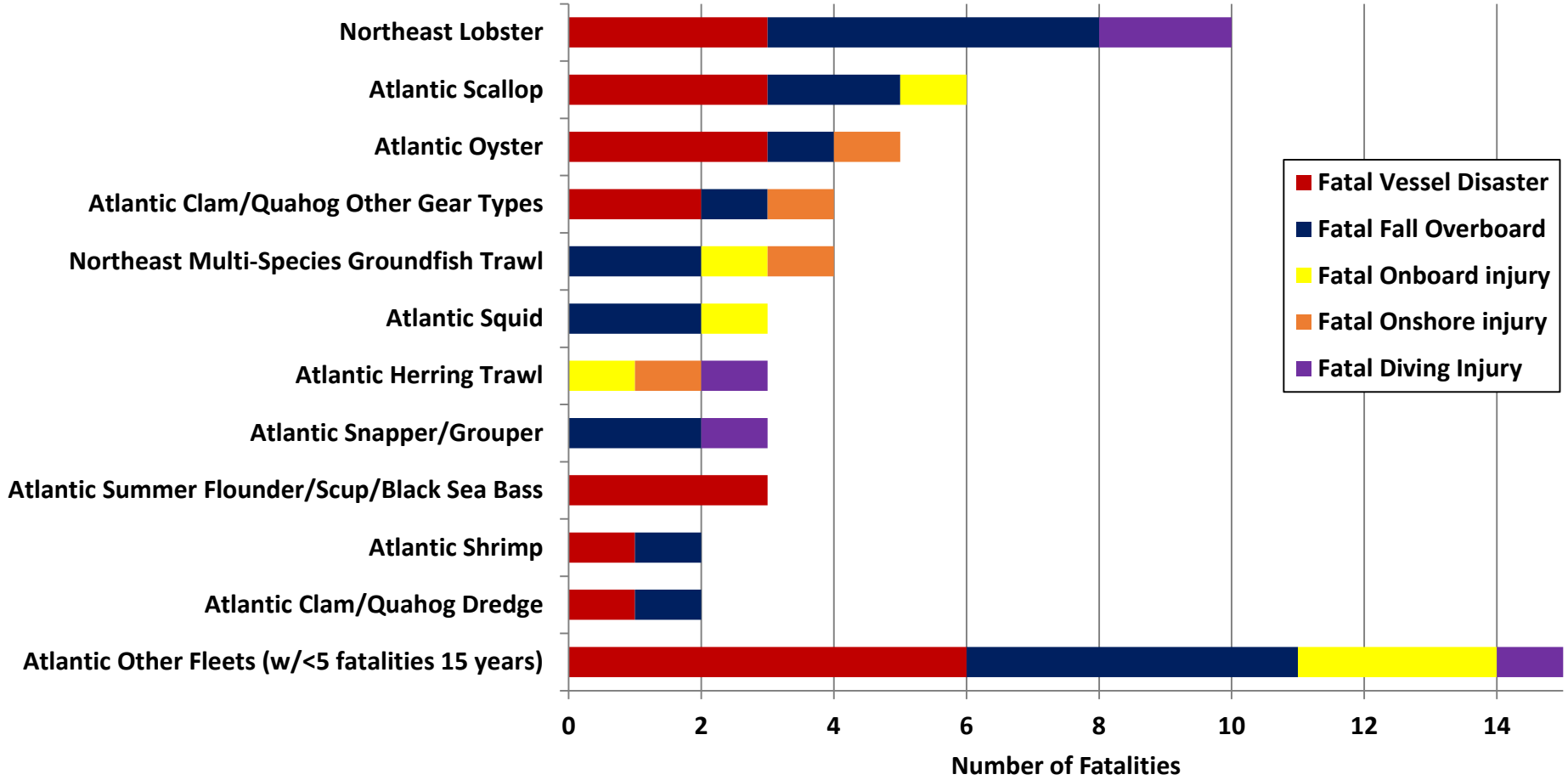
Commercial Fishing Fatalities by Fleet and Incident Type, East Coast, 2010-2014 (n=60)



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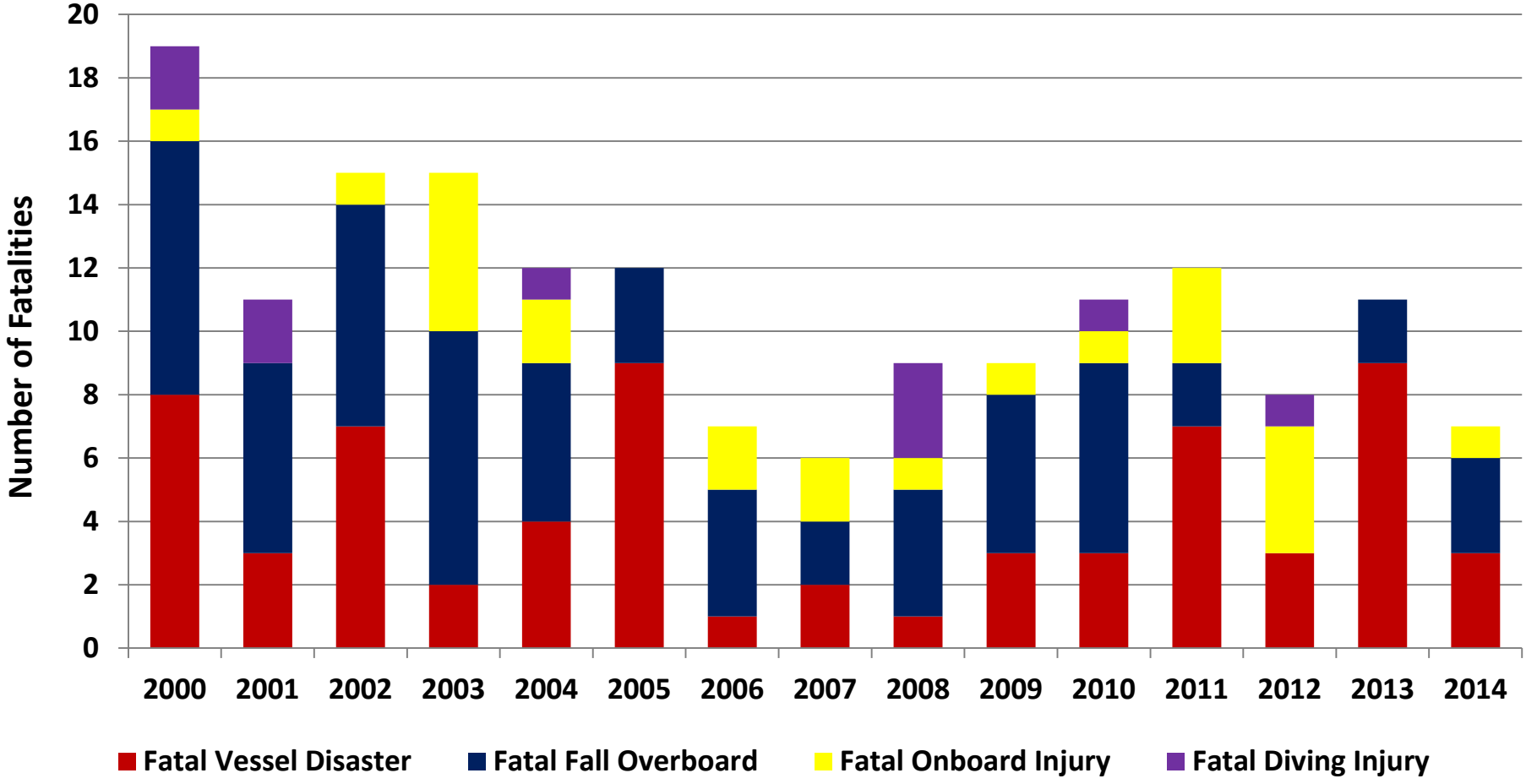
Gulf of Mexico

Gulf of Mexico Commercial Fishing Fatalities by Year and Incident Type (n=164)



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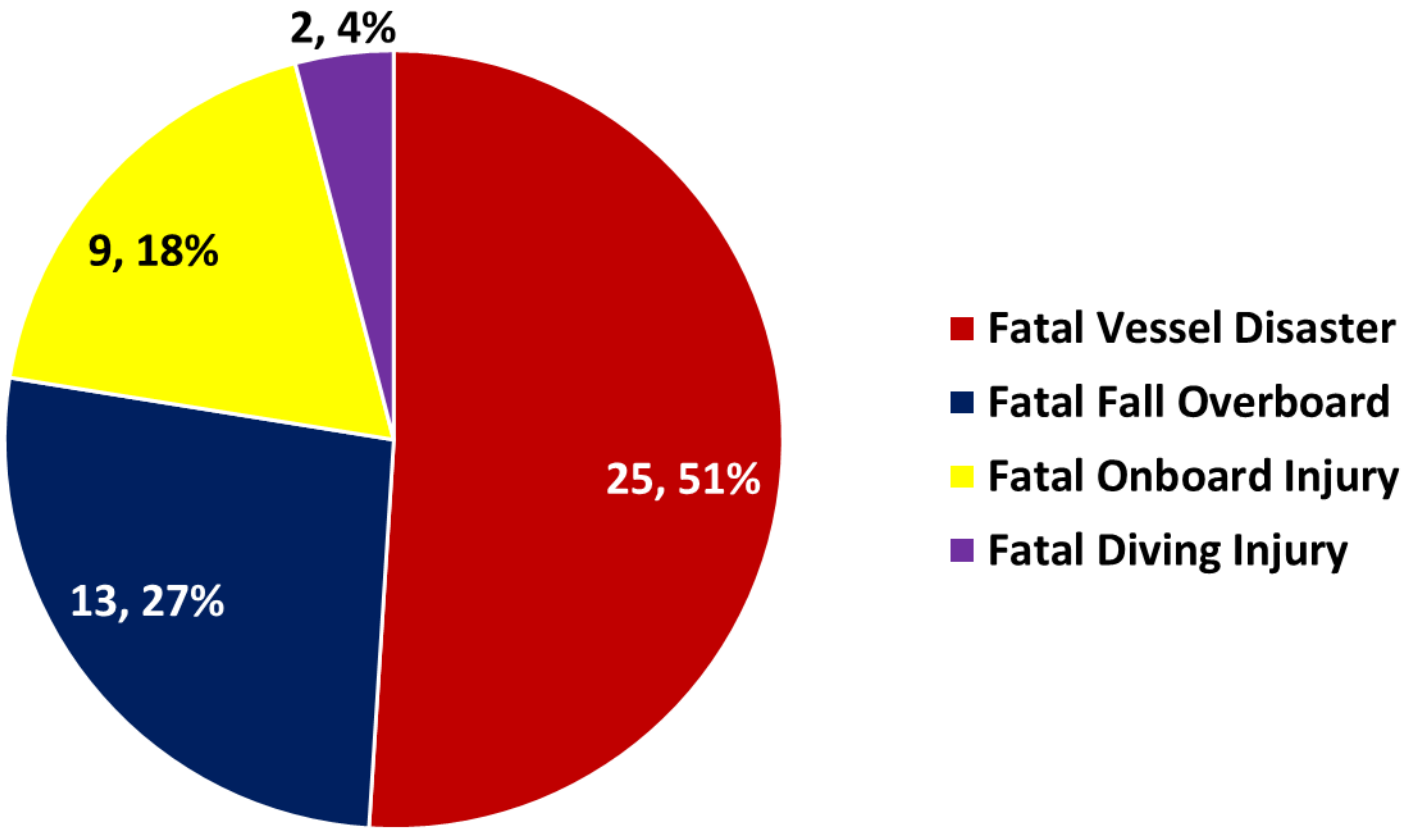
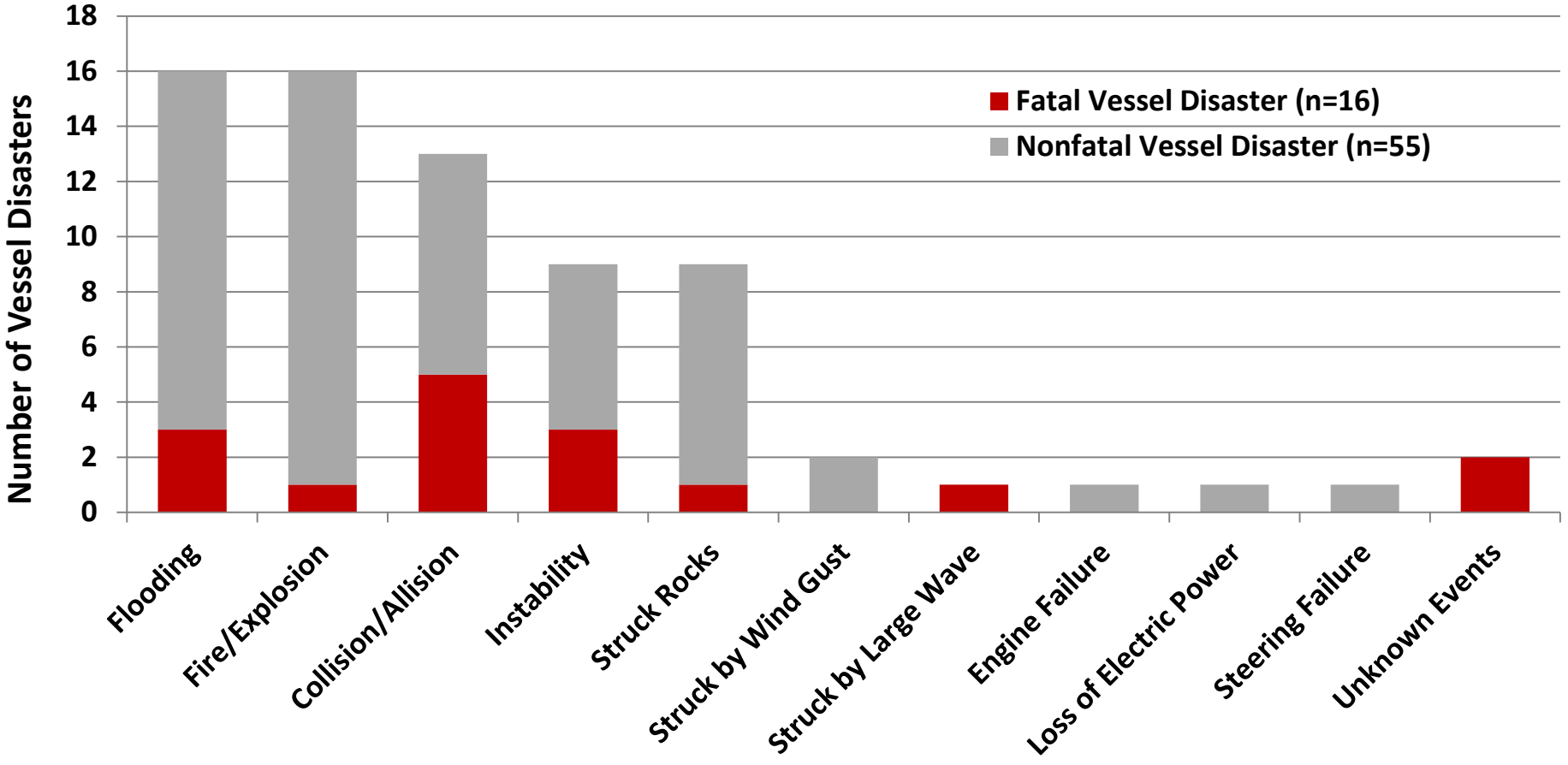
Gulf of Mexico Commercial Fishing Fatalities by Incident Type, 2010-2014 (n=49)



Initiating Events of Vessel Disasters, Gulf of Mexico, 2010-2014 (n=71)



189 crewmembers at risk; 25 deaths

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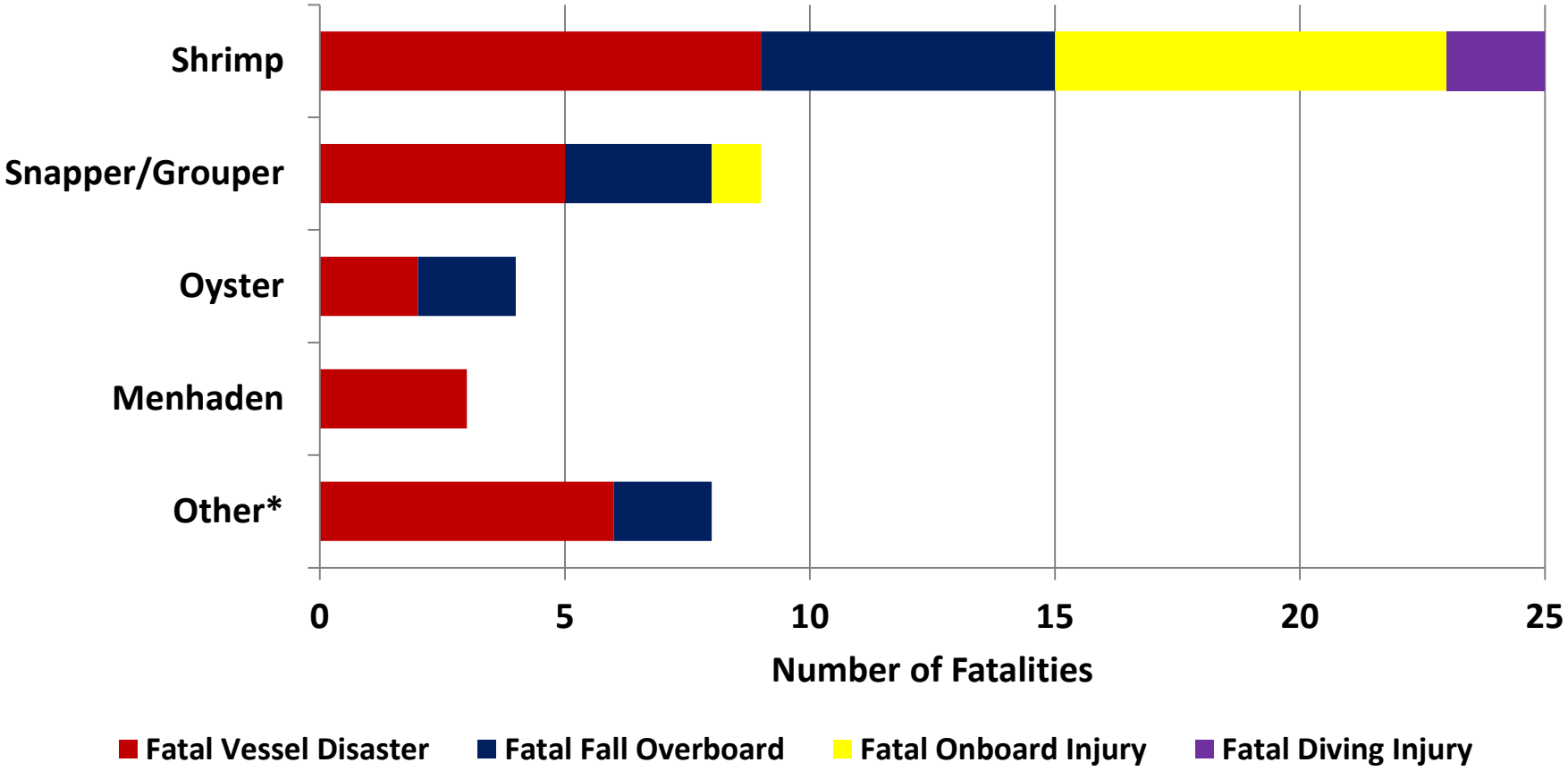
Commercial Fishing Fatalities by Fleet and Incident Type, Gulf of Mexico, 2010-2014 (n=49)



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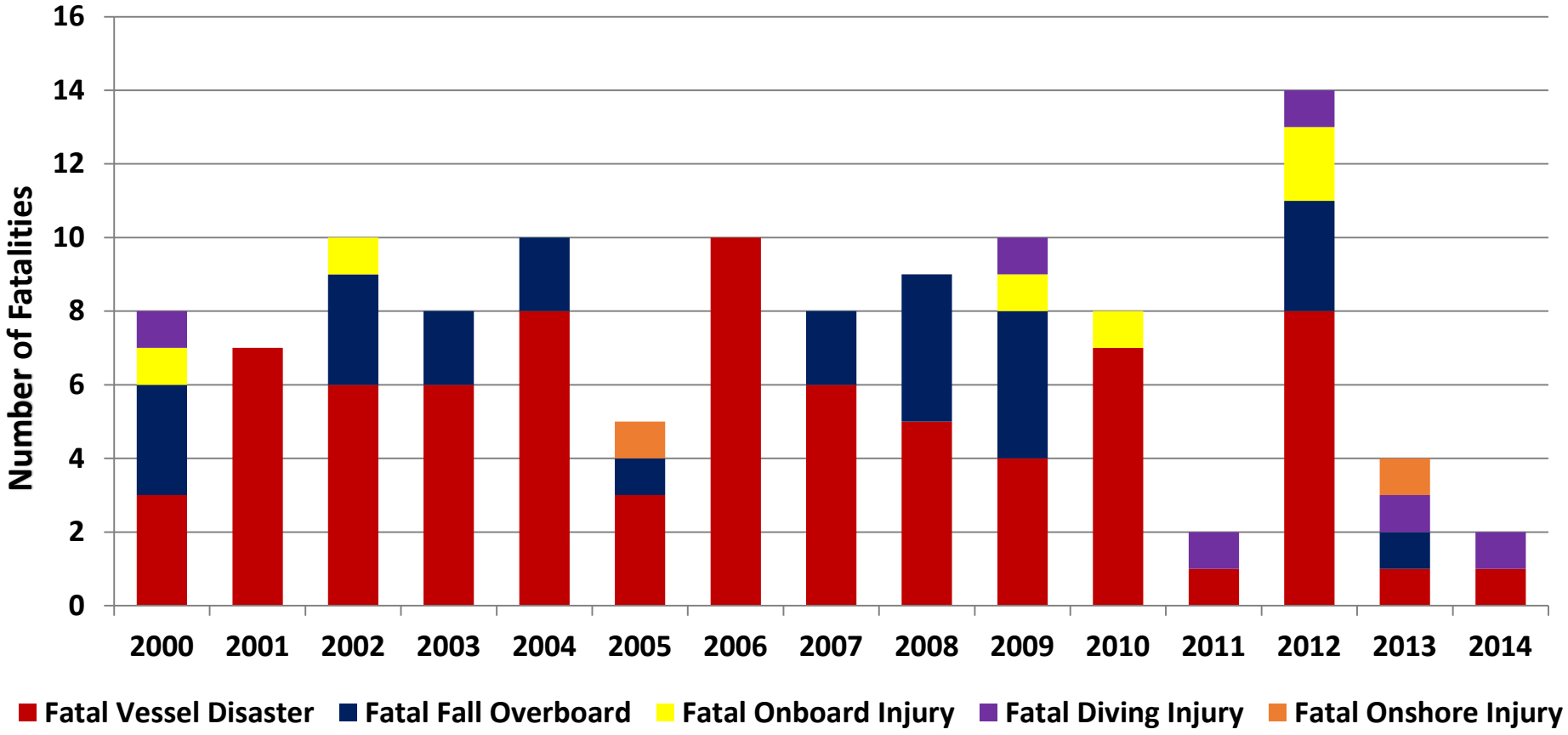
West Coast

West Coast Commercial Fishing Fatalities by Year and Incident Type (n=115)



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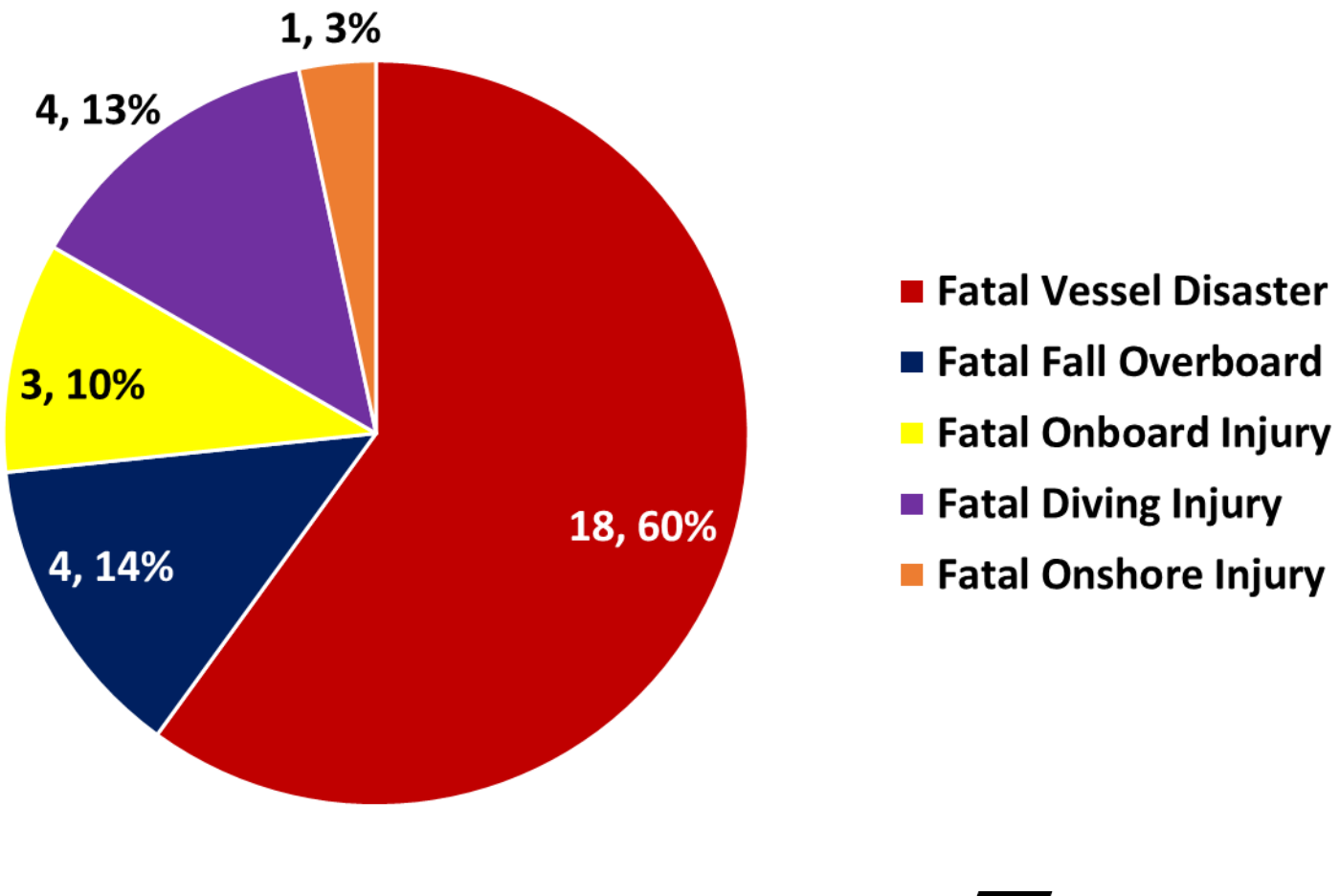
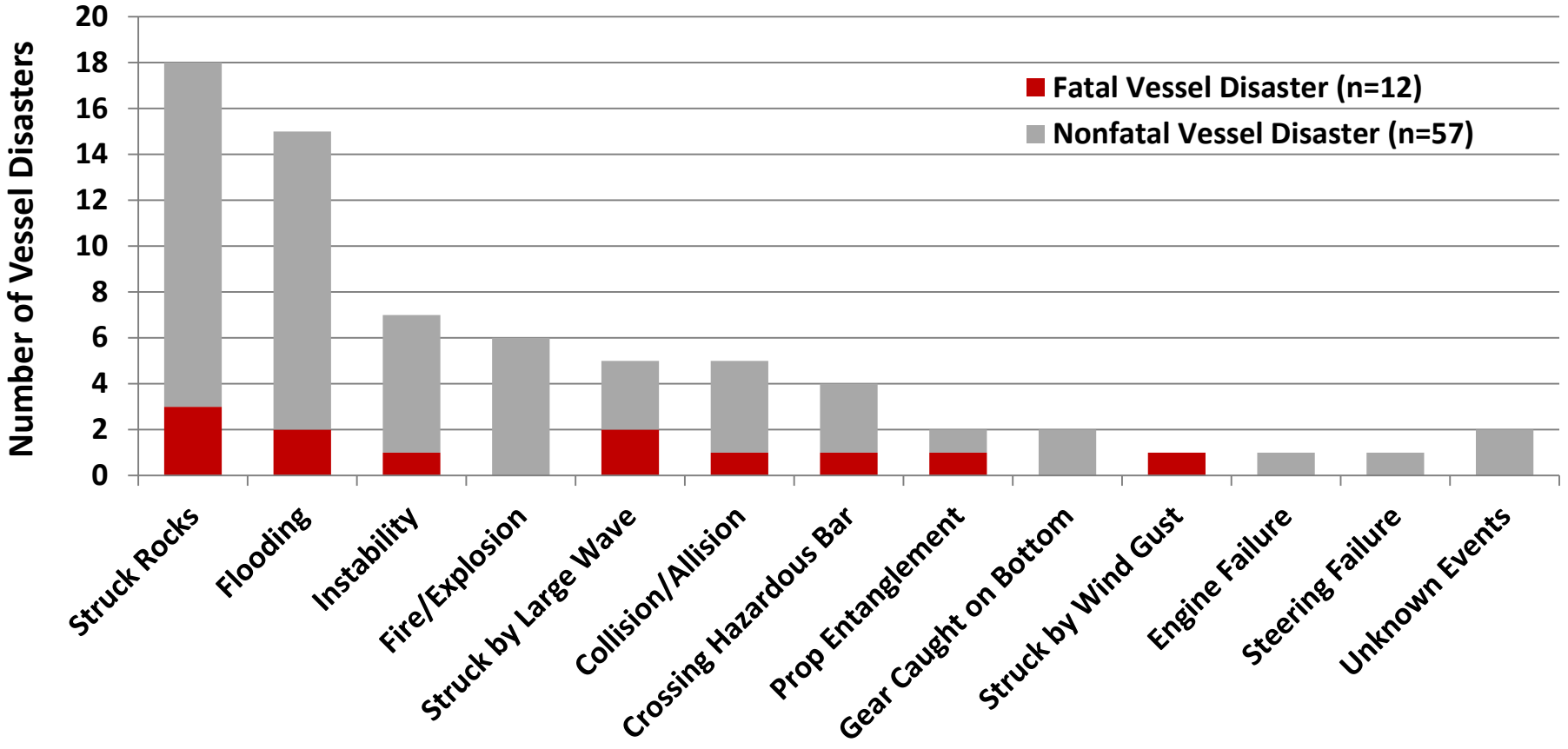
West Coast Commercial Fishing Fatalities by Incident Type, 2010-2014 (n=30)



Initiating Events of Vessel Disasters, West Coast, 2010-2014 (n=69)



190 crewmembers at risk; 18 deaths

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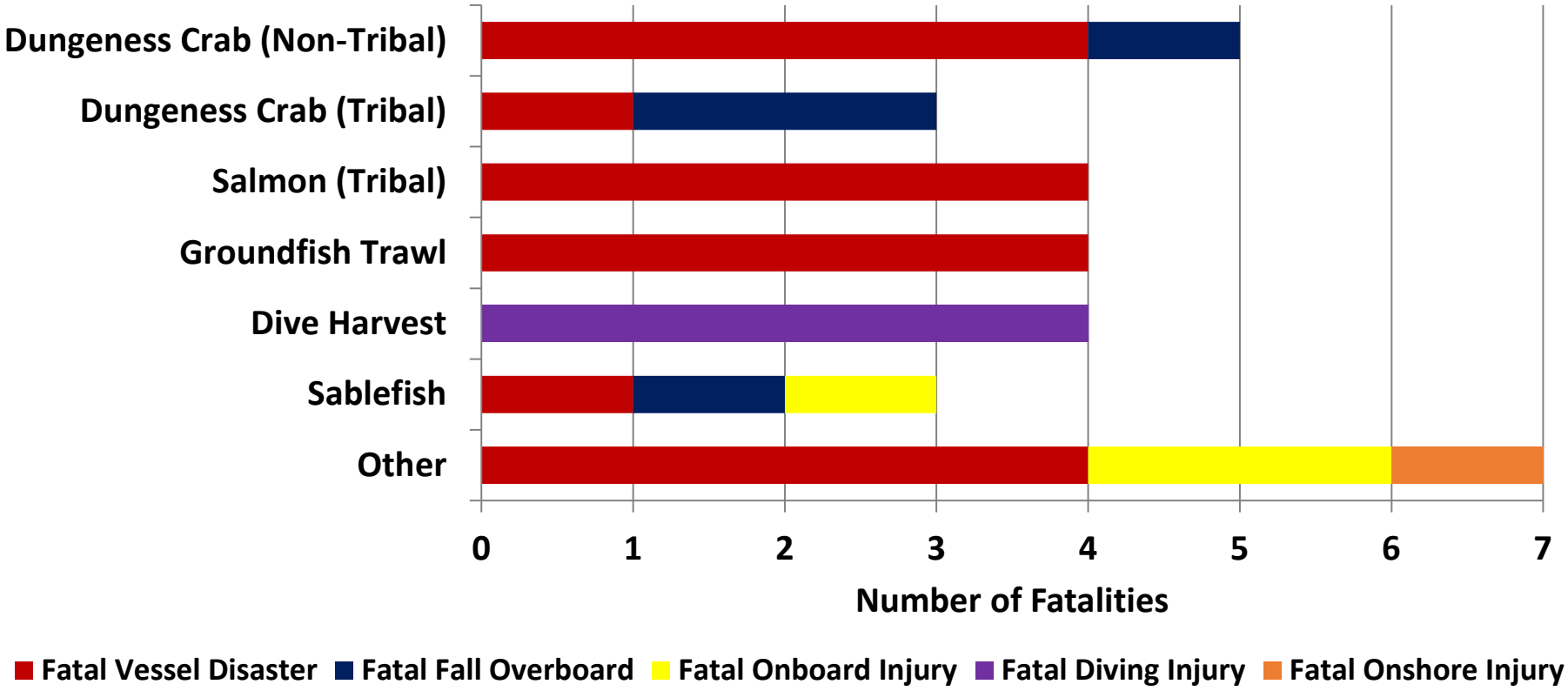
Commercial Fishing Fatalities by Fleet and Incident Type, West Coast, 2010-2014 (n=30)



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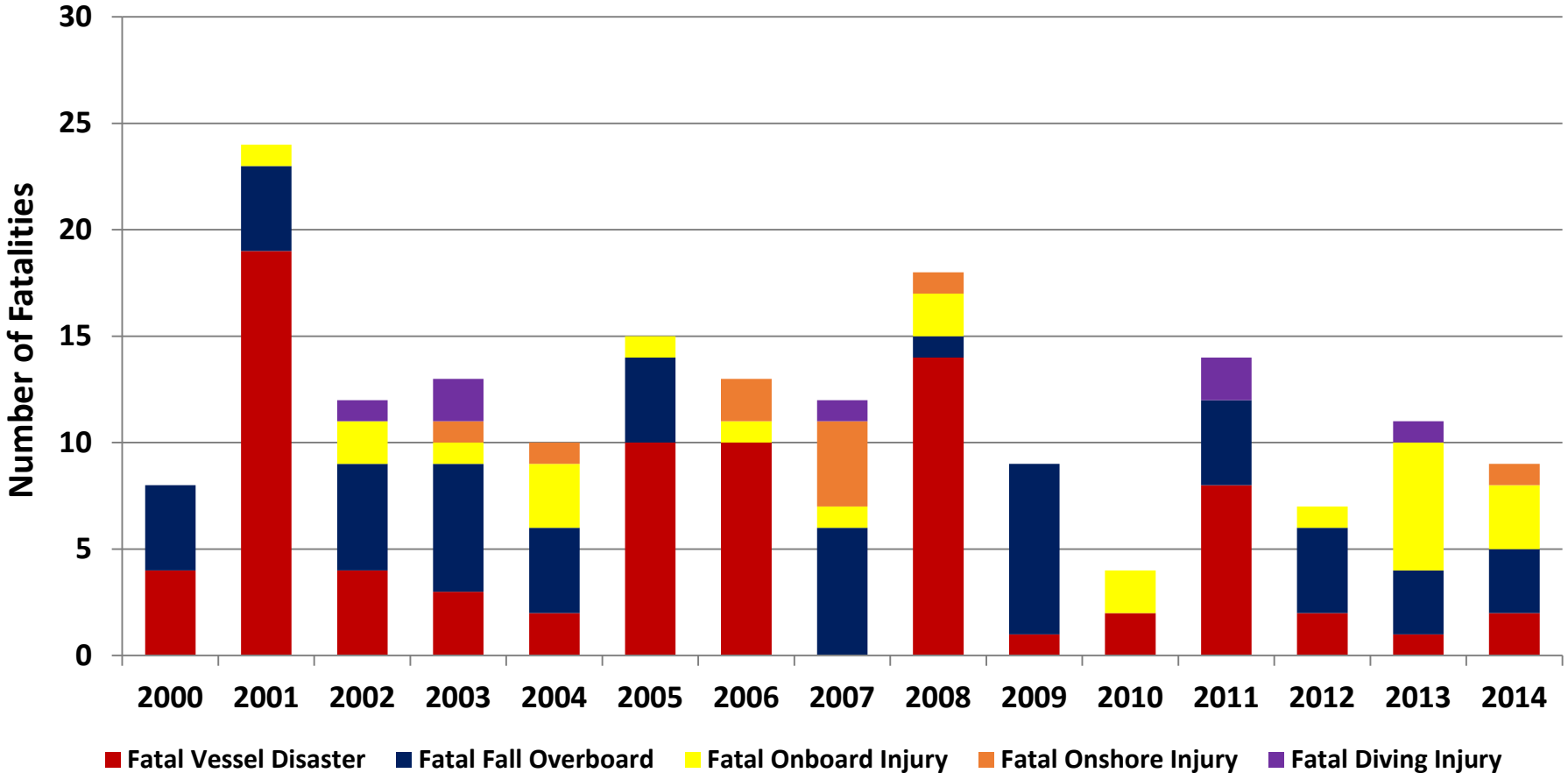
Alaska

Alaska Commercial Fishing Fatalities by Year and Incident Type (n=179)



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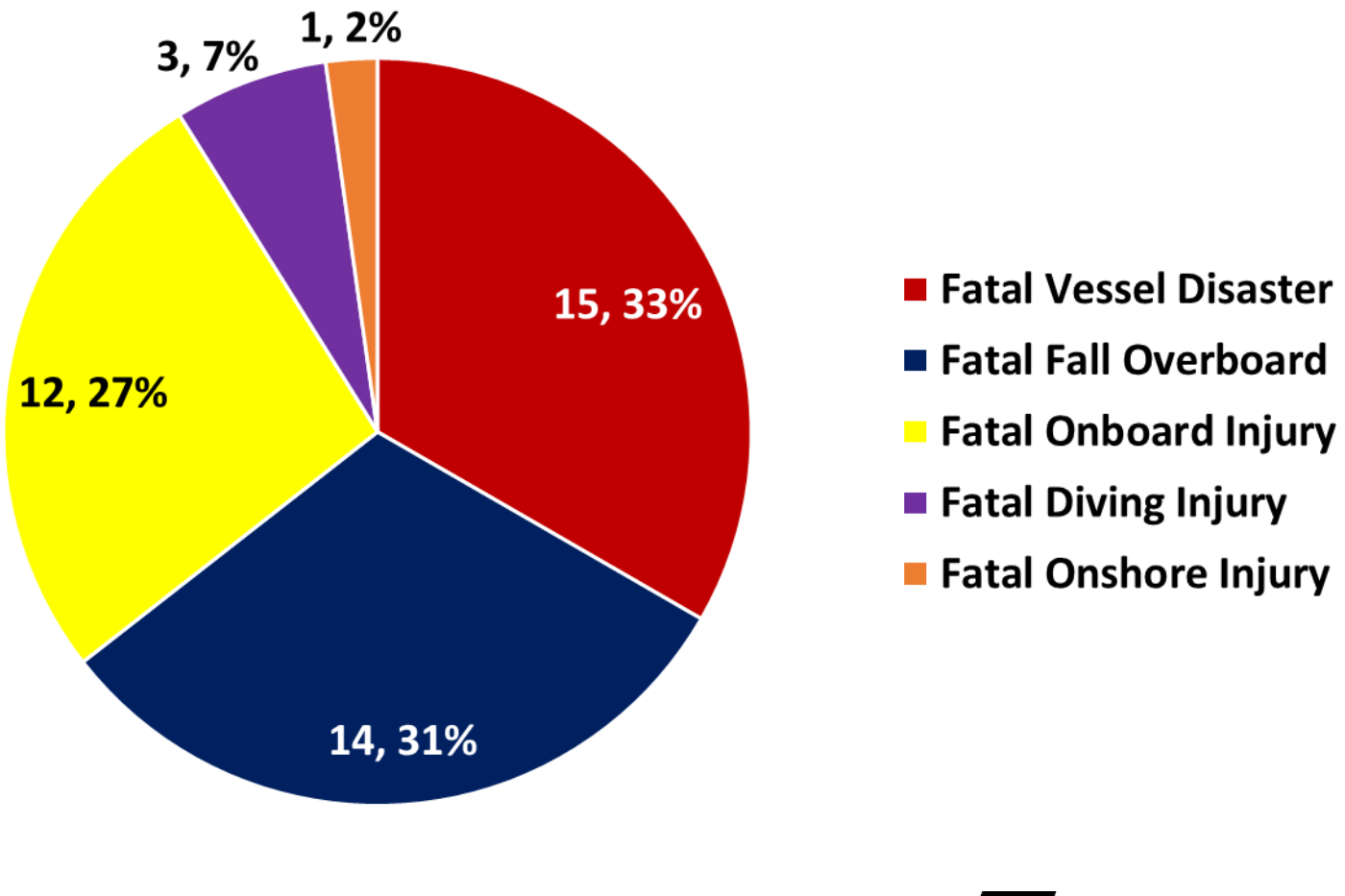
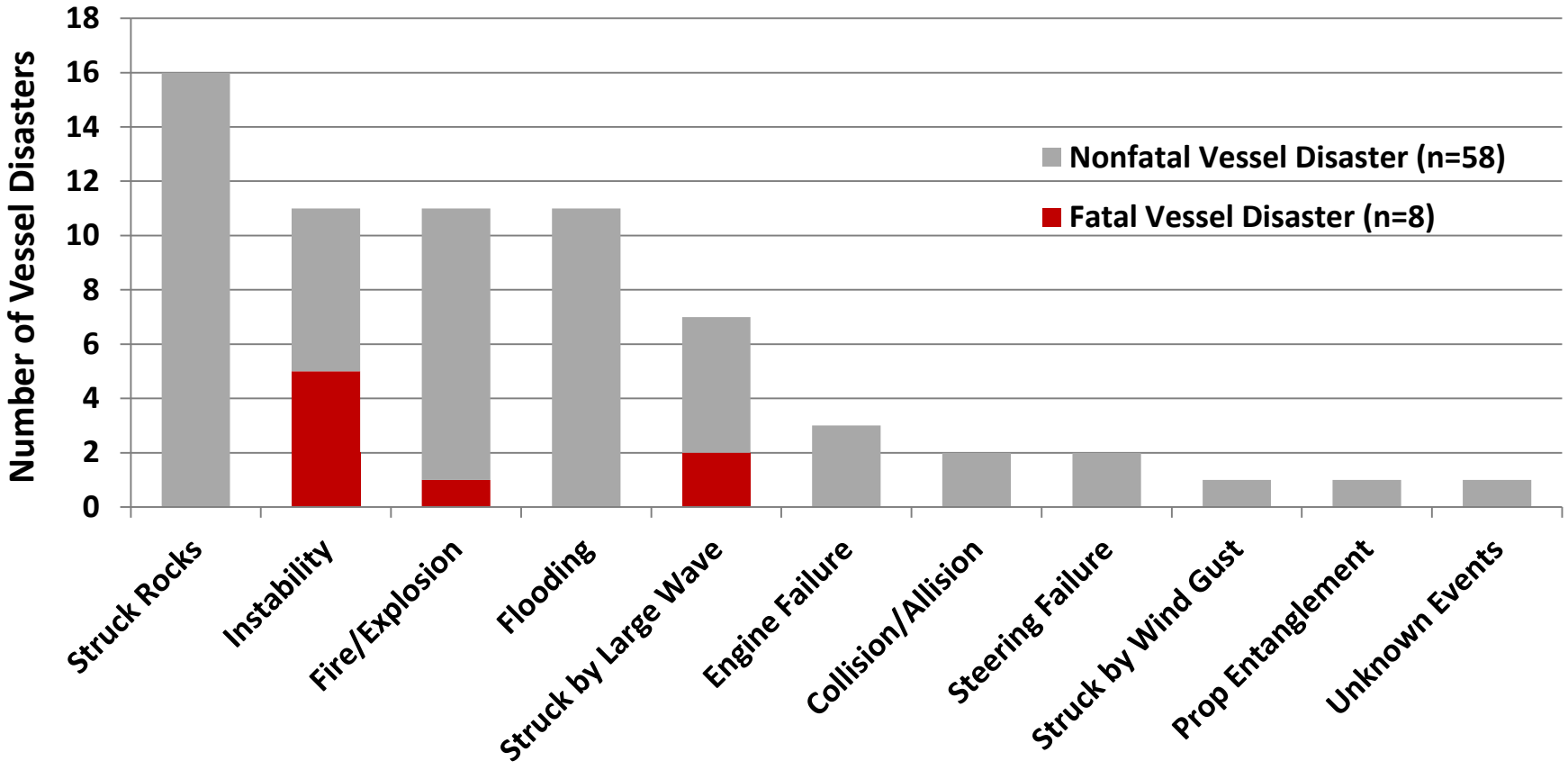
Alaska Commercial Fishing Fatalities by Incident Type, 2010-2014 (n=45)



Initiating Events of Vessel Disasters, Alaska, 2010-2014 (n=66)



217 crewmembers at risk; 15 deaths

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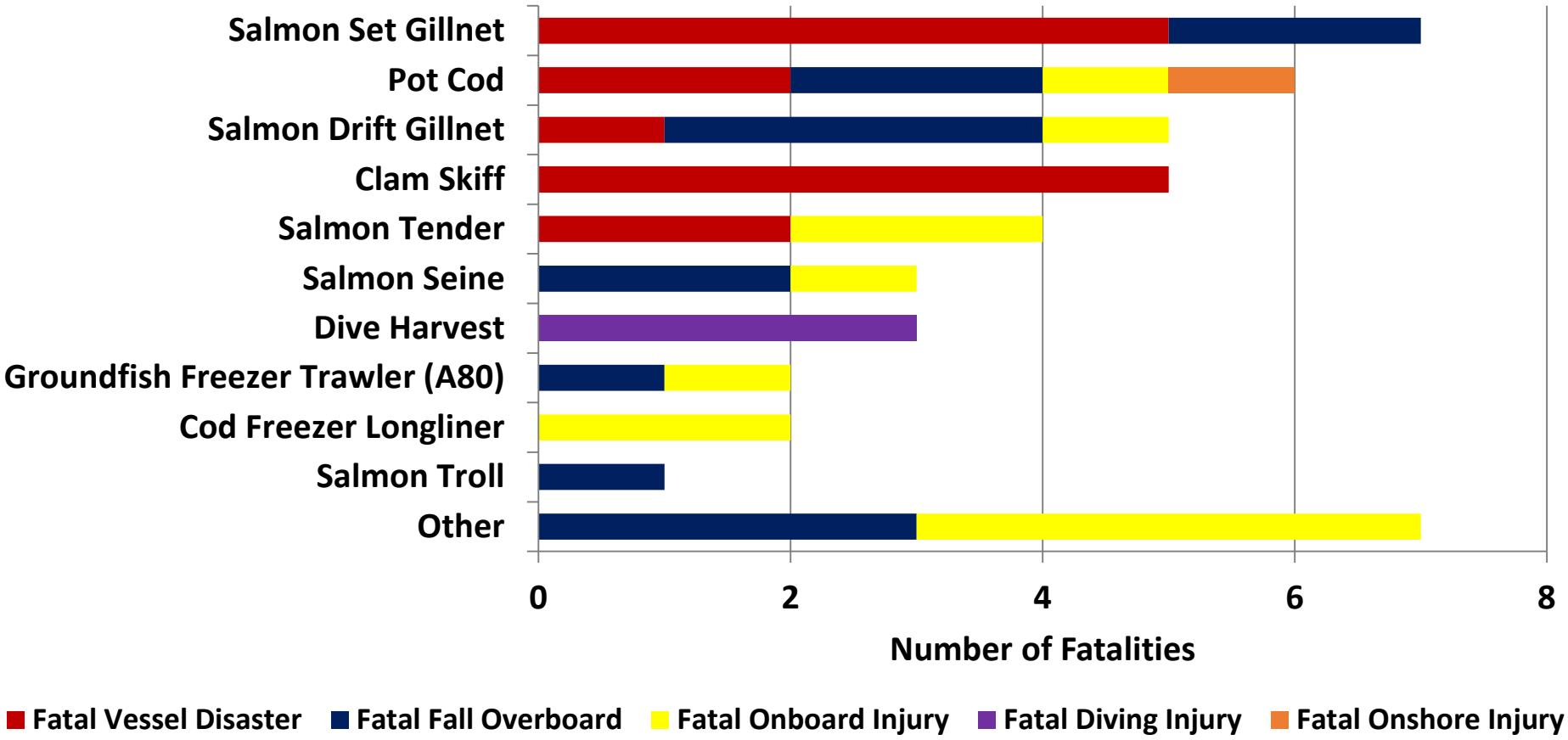
Commercial Fishing Fatalities by Fleet and Incident Type, Alaska, 2010-2014 (n=45)



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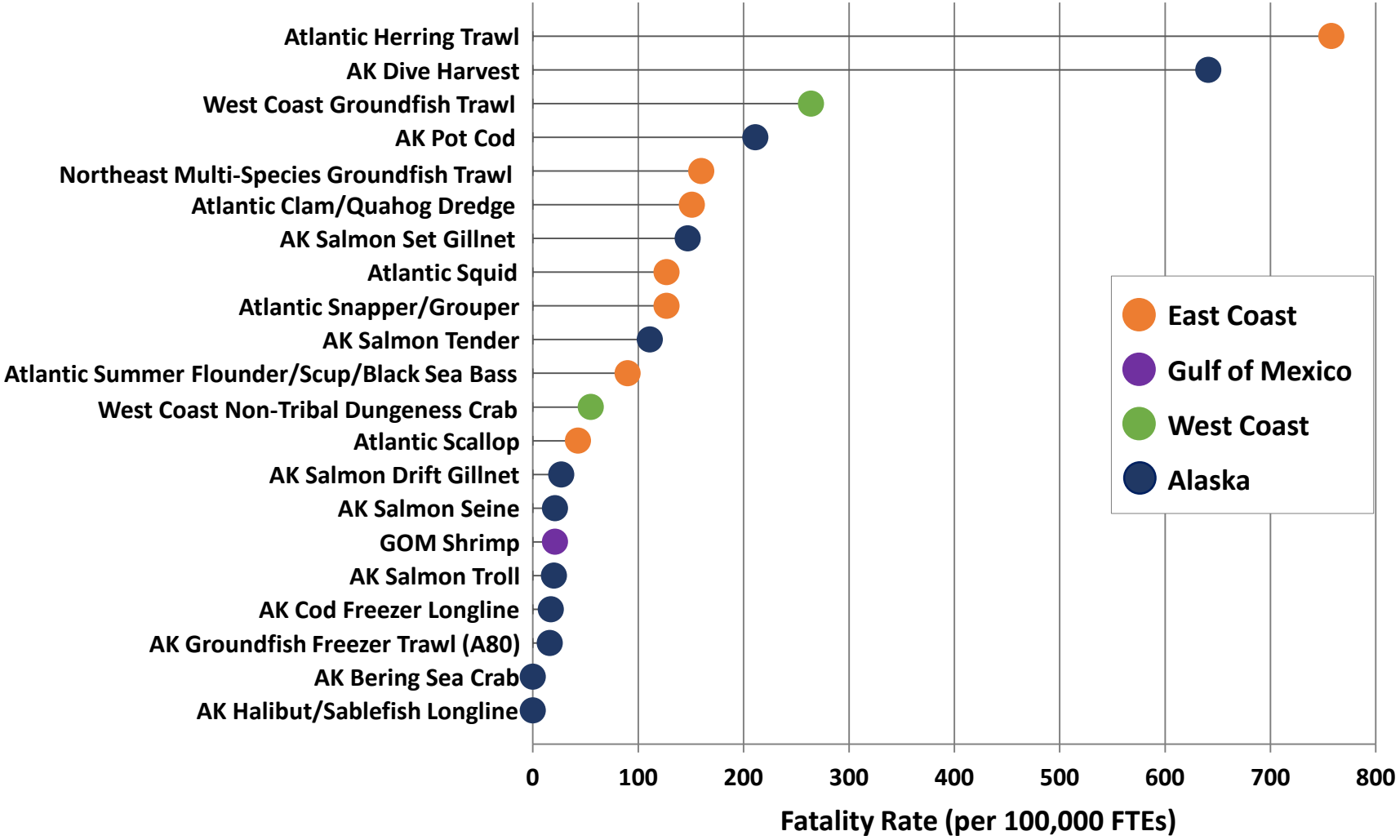
Comparing Risk Among Fleets

- # of Fatalities per 100,000 Full-Time Equivalent Workers (FTEs)
- Accounts for differences in:
  - Number of vessels
  - Number of fishermen
  - Days at sea
- New method
- Calculated for select fleets
  - >5 fatalities during 2000-2014
  - Where FTE estimates were available

Fatality Rates by Fleet, 2010-2014



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Recommendations

Vessel Disasters	Falls Overboard	Diving Fatalities
• Take a marine safety class • Conduct monthly drills (abandon ship, flooding, fire) • Ensure watertight integrity	• Wear a PFD on deck • Conduct monthly man-overboard drills • Use effective recovery devices	• Dive with experienced, alert tender • Prepare for a dive emergency

Recommendations

East Coast	Gulf of Mexico	West Coast	Alaska
• Use engineering controls to prevent gear entanglement • Use a knife to escape entanglement	• Perform maintenance to prevent fires and explosions • Safeguard machinery	• Maintain proper watch • Use fall protection practices • Safeguard machinery • Protect against electrical hazards	• Maintain proper watch • Skiffs adhere to federal fishing vessel safety regulations • Enforce a drug-free policy

What's Next?

- Regional summaries undergoing NIOSH clearance
  - Internal and external reviews

- Manuscript draft underway

THANK YOU

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www.cdc.gov/niosh/topics/fishing