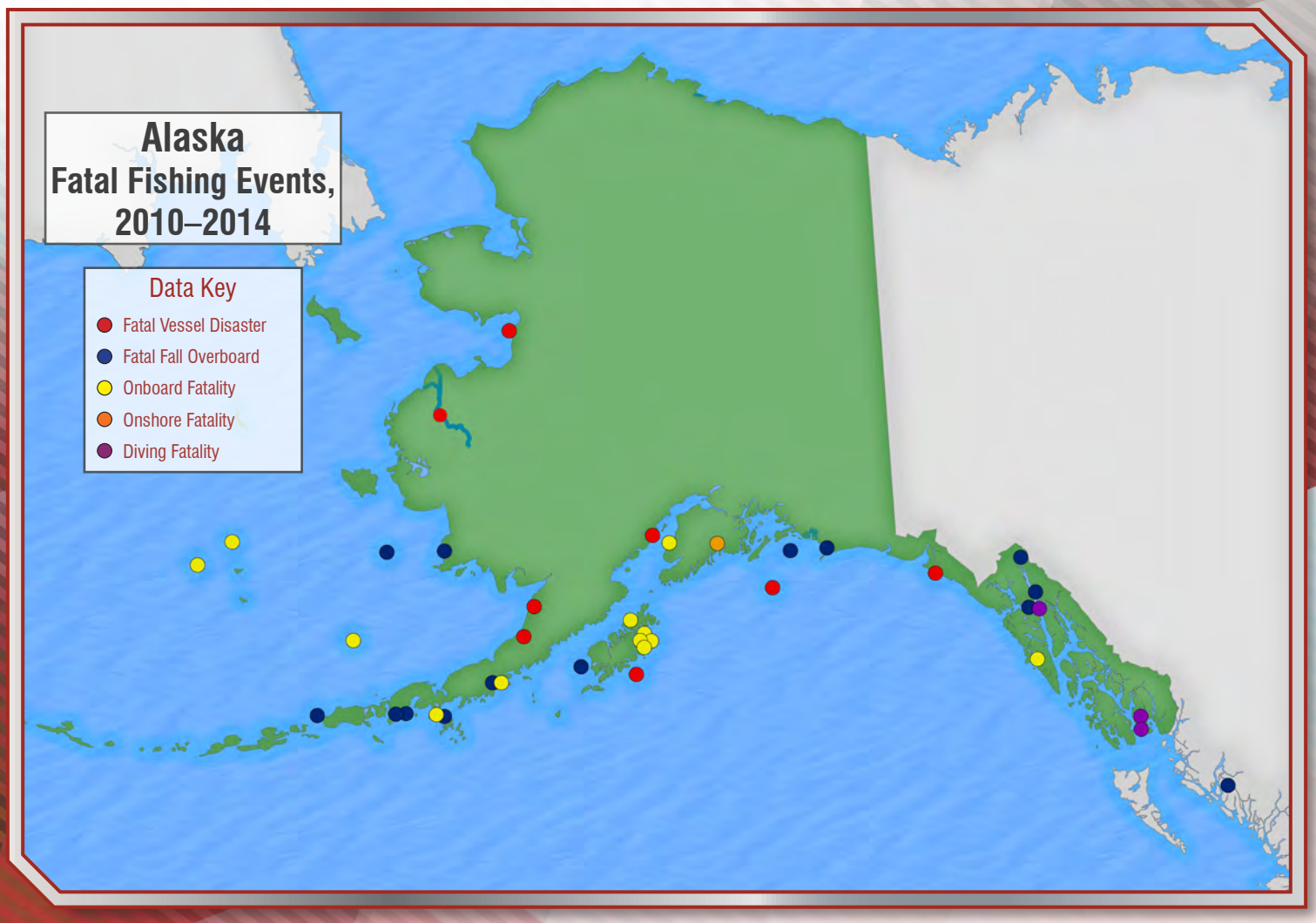
Commercial Fishing Fatality Summary

Alaska Region



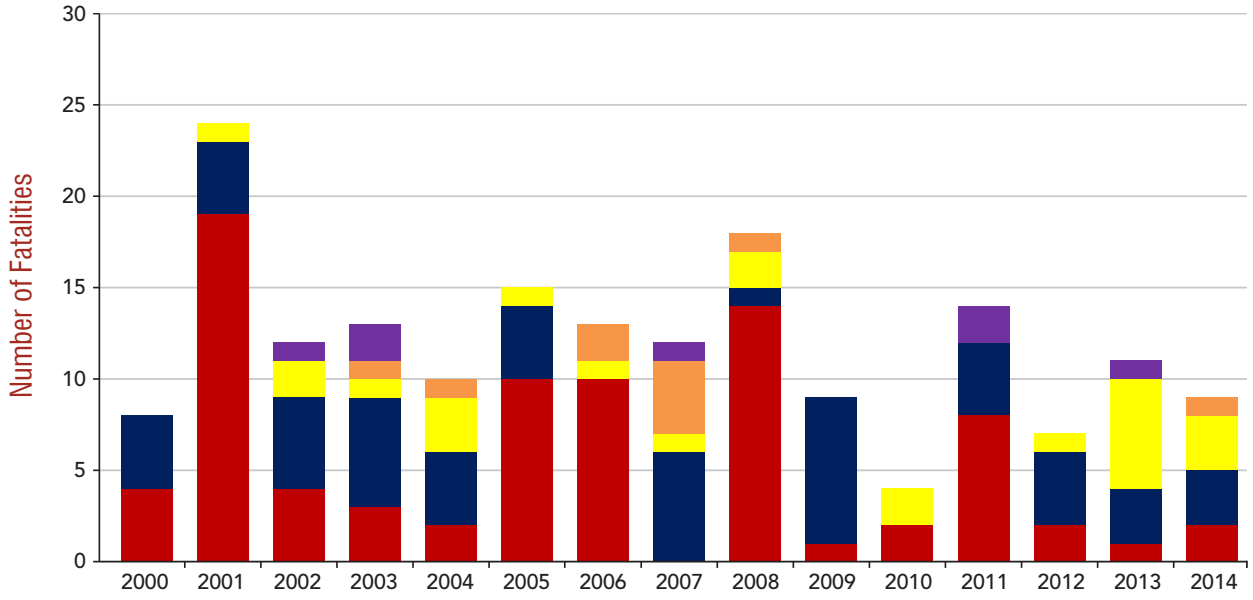
DEPARTMENT OF HEALTH AND HUMAN SERVICES · USA
CDC Workplace Safety and Health
National Institute for Occupational Safety and Health NIOSH®

About this Report

The National Institute for Occupational Safety and Health (NIOSH) is the federal government agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness. In 2010, NIOSH published an in-depth study of commercial fishing fatalities due to traumatic injury that occurred in the United States during 2000–2009. NIOSH recently completed a five-year update (2010–2014) to the previous study in order to identify current hazards among fisheries in different regions of the country: Alaska, West Coast, East Coast, and the Gulf of Mexico. This document is one in a set of four reports summarizing the most recent fatality and vessel disaster data for US fishing regions.

Data Key
- Fatal Vessel Disaster
- Fatal Fall Overboard
- Onboard Fatality
- Onshore Fatality
- Diving Fatality

Figure 1 Commercial Fishing Fatalities by Year and Incident Type, Alaska, 2000–2014 (179 Total)



During the 15-year period 2000–2014, 179 deaths occurred in Alaskan fisheries, averaging nearly 12 fatalities annually (Figure 1). During the first decade (2000–2009), 134 fatalities occurred, for an average of 13 deaths per year. For the most recent five-year period (2010–2014), 45 commercial fishing fatalities were recorded, averaging nine fatalities annually. Compared to the preceding 10-year period (2000–2009), this recent five-year period has shown a decrease in the frequency of deaths due to vessel disasters and an increase in the frequency of fatal onboard injuries. A slight decrease in the frequency of fatal falls overboard has also been observed; however, there was no change in the proportion of deaths due to falling overboard between the two periods.

Vessel disasters accounted for 33% of all deaths during 2010–2014, with most victims working in skiffs (Figure 2). Vessel disasters include sinkings, capsizings, fires, groundings, or other events that force crews to abandon ship. Drowning following a fall overboard was the second leading cause of death during this time period (14, 31%). Of the 12 crewmembers who died from injuries sustained onboard vessels, three were due to unintentional drug overdoses and two were suicides. The remaining onboard fatalities involved two crewmembers becoming entangled in equipment, two asphyxiations in a confined space, two being struck by gear, and one who suffered severe chemical burns. Less frequent were fatal diving injuries, accounting for three deaths. The single onshore fatality was due to a crewmember suicide.

Figure 2 Commercial Fishing Fatalities by Incident Type, Alaska, 2010–2014* (45 Total)

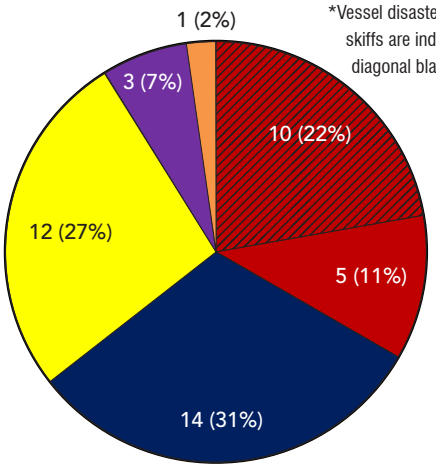
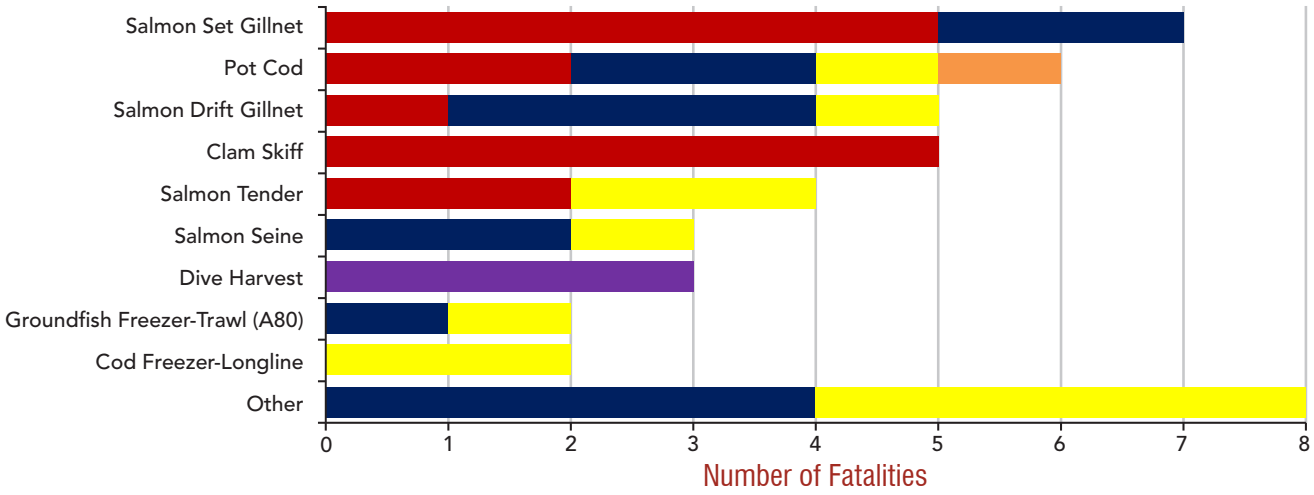


Figure 3

Commercial Fishing Fatalities by Fleet, Alaska, 2010–2014 (45 Total)

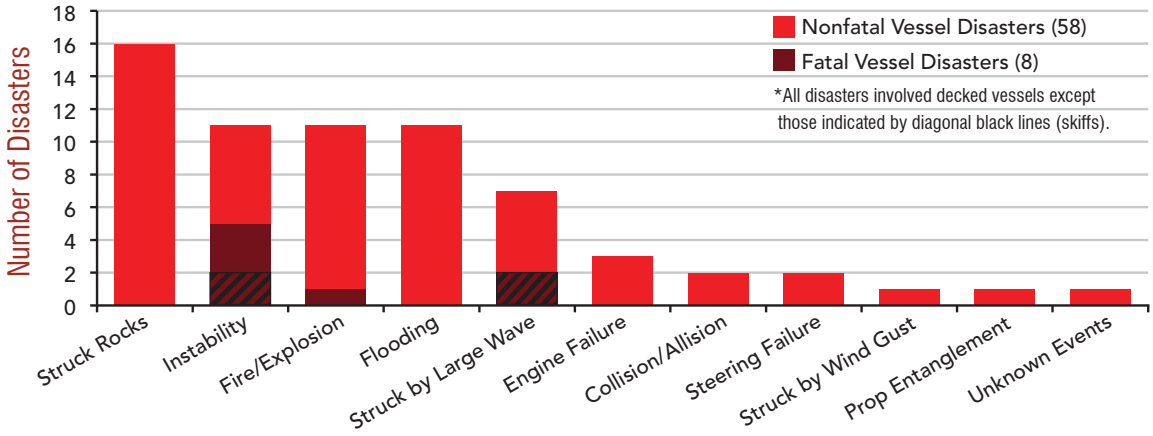


*Other fleets are those that experienced a single fatality during 2010–2014: salmon troll, cod (jig), cod (longline), pollock (processor), pollock (trawl), Bering Sea Aleutian Islands non-pollock (trawl), shrimp, and state crab.

The majority of fatalities (82%) occurred in nine Alaskan fleets (Figure 3). The salmon fishery experienced the highest number of fatalities with 20 deaths. Eight crewmembers died during vessel disasters, of which five were in the setnet fleet. An additional eight salmon fishermen died after falling overboard, distributed among drift gillnet, setnet, seine, and troll fleets. The pot cod fleet lost six crewmembers, mostly to vessel disasters and falls overboard. The clam fleet experienced five deaths from a single skiff capsizing. In the dive harvest fleet, three cucumber harvesters perished while diving.

Figure 4

Causes of Vessel Disasters, Alaska, 2010–2014* (66 Total)



Vessel disasters resulted in the most fatalities during 2010–2014. A total of 66 vessel disasters occurred in Alaskan waters during this time period (Figure 4), placing 217 crewmembers at risk of immersion and death. While 93% of crewmembers involved in vessel disasters survived, eight disasters resulted in 15 fatalities. Skiffs were involved in half of those fatal events, and poor weather was reported to have contributed to three fatal disasters. The leading causes of fatal disasters were instability and being struck by large waves. In comparison, the leading causes of nonfatal vessel disasters were striking rocks and flooding. Over half (56%) of vessels that ran aground involved either an unattended helm or a crewmember asleep at the helm.

Vessel disasters accounted for 33% of all deaths during 2010–2014, with most victims working in skiffs

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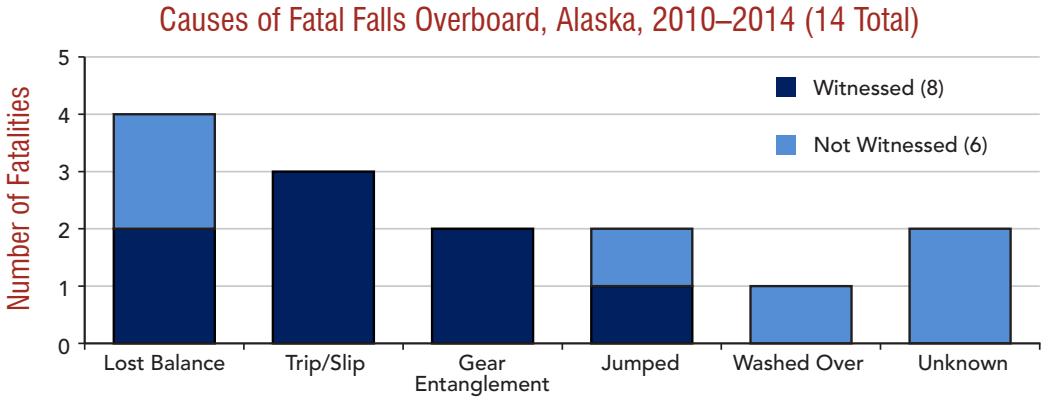
Figure 5



During 2010–2014, 14 crewmembers died from drowning after falling overboard, contributing to 31% of fatalities in the region (Figure 5). None of the fishermen were wearing a personal flotation device (PFD) when they drowned. Nearly half (43%) of the falls were not witnessed by other crewmembers, either because the fishermen were alone on the vessel (1) or alone on deck (5). Falls overboard were most frequently caused by loss of balance and tripping or slipping on deck.

Conclusions

During 2000–2009, the majority of commercial fishing deaths in Alaska occurred following vessel disasters (50%) or falls overboard (31%). However, during the most recent five-year period (2010–2014), most deaths were relatively evenly distributed between vessel disasters, falls overboard, and onboard injuries. Attention should be given to these priority issues.

Vessel disasters are extremely hazardous due to the risk of immersion and drowning, highlighting the need to address the leading causes of both fatal and nonfatal disasters. Skiff capsizings continue to be a deadly hazard. When working in a skiff, fishermen should heed weather forecasts, wear PFDs, and have a communication device, as well as adhere to commercial fishing vessel safety regulations and exemptions that apply to them. For all vessels, crewmembers should ensure the vessel is loaded properly, its watertight integrity is maintained, and an alert crewmember is on watch while underway. All crewmembers should take a marine safety class to learn the necessary skills to survive a vessel disaster.

Fatalities from falls overboard remain a persistent yet preventable problem in the industry. Regardless of work activity or weather conditions, all crewmembers should wear a PFD anytime while working on deck. A variety of PFD styles are available for fishermen that are comfortable and do not snag on gear. A high proportion of fatal falls overboard occurred when the victim was alone on deck. Man-overboard alarms and re-boarding ladders should be considered to improve chances of successful rescue if a fall overboard occurs.

Finally, during 2010–2014, deaths due to drug overdoses and suicides have increased in frequency compared to the previous 10-year period. While some vessel policies can be enacted to address this emerging issue, it does require more attention outside of a marine safety solution.

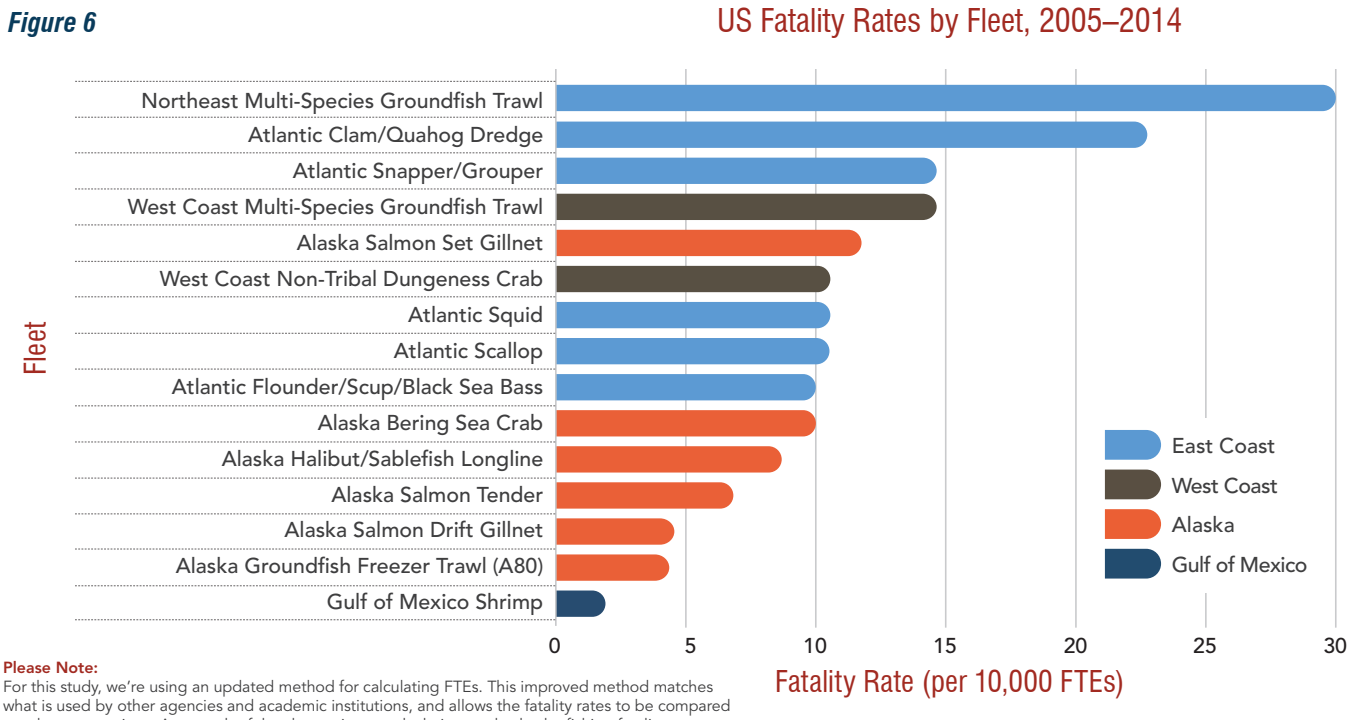
Safety training for fishermen is available, affordable, and saves lives

Photo Credit - NIOSH

Comparing risk between fleets

Commercial fishing fleets have different numbers of vessels, fishermen, and season lengths. Because of these operating differences, we cannot simply use the number of fatalities in each fleet to compare their risk for fatalities. Instead, we calculate fatality rates to measure risk. Risk is the probability of a fatality occurring.

Figure 6



Please Note:
For this study, we're using an updated method for calculating FTEs. This improved method matches what is used by other agencies and academic institutions, and allows the fatality rates to be compared to other occupations. As a result of the change in our calculation methods, the fishing fatality rates published in this report cannot be compared to rates published in previous NIOSH studies.

Fatality rates were calculated for fleets that experienced five or more fatalities during a 10-year period (2005–2014) and where workforce estimates were available (Figure 6). The salmon set gillnet fleet had the highest fatality rate in Alaska; however, the rate was lower than that of several other fleets around the country (among fleets where fatality rates were calculated). Over the 10-year period, there were no overall trends in fatality rates for most Alaskan fleets, except for the halibut/sablefish longline and Bering Sea crab fleets, which experienced significant decreases in their fatality rates.

Why use a fatality rate?

To determine the risk of fatalities in different fleets, we need to consider the number of vessels in the fleet, number of fishermen, and the length of time that they spend working and exposed to potential hazards. By calculating rates, we can take into account the total number of hours worked in each fleet. The results of these rate calculations answer the question: *"How many fatalities would have occurred in these fleets if they all had 10,000 fishermen working regular 40-hour weeks throughout the year?"* Fleets with higher fatality rates are more dangerous than fleets with lower fatality rates.

How do we calculate a fatality rate?

We know how many fatalities occurred in each fleet, based on our data collection from US Coast Guard investigation reports and documents from various agencies. For many of the fleets around the US, we also know how many vessels, crewmembers, and operating days are in the fleet each year. This information is used to estimate "full-time equivalent" fishermen (FTEs).

Here's how we calculate FTEs:

$$\frac{\text{\# Vessels} \times \text{\# Crew per Vessel} \times \text{\# Operating Days} \times 24 \text{ Hours}}{\text{2,000 Hours (standard 40-hour work week for the year)}} = \text{\# of FTEs}$$

Here's how we use FTEs to calculate a fatality rate:

$$\frac{\text{\# Fatalities}}{\text{\# of FTEs}} \times 10{,}000 = \text{\# of Fatalities per 10,000 FTEs}$$

Recommendations

Vessel Disasters

- **Take a marine safety class at least every five years.** Safety training for fishermen is available, affordable, and saves lives. All fishermen should learn and know how to use basic lifesaving equipment like immersion suits, life rafts, EPIRBs, and fire extinguishers to improve their chances of survival in an emergency.
- **Conduct monthly drills for abandon ship, fire, and flooding.** The practical knowledge learned in safety training should be applied each month during drills, allowing fishermen to reinforce the skills needed in an emergency.
- **Ensure watertight integrity of the vessel.** The hull and through-hull penetrations should be regularly inspected and maintained. Doors and hatches should remain closed while underway, especially in rough seas. Maintain and test high water alarms before each trip.
- **Maintain proper watch.** Vessel owners and operators should create fatigue management policies and use watch alarms to prevent groundings and collisions.
- **Adhere to federal commercial fishing vessel safety regulations.** All owners and operators should ensure they are in compliance with appropriate safety regulations. While decked vessels and skiffs differ both physically and operationally, both are commercial fishing vessels. Those working in skiffs should be aware of regulations and exemptions surrounding survival equipment carried on board.
- **Adhere to stability instructions (if applicable).** A naval architect should be consulted periodically to review safe loading limits of the vessel. Vessels should always be loaded in compliance with their stability instructions.

Falls Overboard

- **Wear a PFD on deck.** Nationwide, none of the fishermen who died from falling overboard were wearing a PFD when they drowned. PFDs can keep fishermen afloat, giving the crew time for rescue.
- **Use a man-overboard alarm system.** Many falls overboard are not witnessed, delaying recovery time and reducing chances of survival. A man-overboard system will alert the crew that a fall overboard occurred, and a device with GPS capabilities can signal the fisherman's location to assist in search and recovery efforts.
- **Add effective recovery devices and re-boarding ladders.** A rescue sling or similar device is more effective than a life ring for bringing a crewmember back on the vessel. If someone fishes alone, a plan should be in place for them to re-board their vessel unassisted after a fall.
- **Conduct man-overboard drills monthly.** Recovery procedures should be practiced regularly to ensure all crewmembers are prepared to respond to a fall overboard.

Onboard Fatalities

- **Install safety devices on deck machinery.** Emergency-stop buttons have been developed specifically for deck machinery on fishing vessels and can be adapted and retrofitted onto winches or other machinery. Stationary guarding and auxiliary-stops are also being tested. More information about engineering solutions for fishing vessels can be found at: cdc.gov/niosh/topics/fishing/engineering/

Diving Fatalities

- **Dive with an experienced, alert tender.** Be familiar with vessel operations, safety equipment, and procedures for both vessel and dive emergencies. Be alert and focused while the diver is in the water.
- **Be prepared for a dive emergency.** Be prepared to administer first aid, including the use of an oxygen delivery system.
- **Maintain diving equipment.** Ensure that compressors and other equipment used in diving operations are in good working condition.

National Institute for Occupational Safety and Health

Commercial Fishing Safety Research and Design Program

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