Commercial Fishing Safety Research Updates from NIOSH

presented to the
National Commercial Fishing Safety Advisory Committee
Norfolk, VA | May 23, 2023

Samantha Case, PhD, MPH, CSP
Outline

- NIOSH Introduction
- Commercial Fishing Fatality Update
- USCG-NIOSH Commercial Fishing Safety Research & Training Grants
Center for Maritime Safety and Health Studies (CMSHS)

- Brings focus to safety and health needs for maritime workers in:
  - Commercial fishing
  - Seafood processing
  - Aquaculture
  - Marine terminals
  - Shipyards
  - Marine transportation

- Multidisciplinary researchers work to understand and reduce hazards
- Collaborates with industry and workers
Commercial Fishing Fatality Update
NIOSH/USCG Partnership

Memorandum of Agreement (MOA)

- Last renewed in 2019
- Encourages data sharing between agencies
- NIOSH scientist granted USCG credentials as federal affiliate
- Statistical analyses of data allow us to identify hazards leading to deaths and injuries
Collecting Fatality and Vessel Disaster Data

1. Marine casualty occurs
2. USCG or local law enforcement agency investigates
3. NIOSH reviews reports
4. Data entered into the NIOSH Commercial Fishing Incident Database (CFID)
## Who Counts What?

<table>
<thead>
<tr>
<th></th>
<th>USCG</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessel capsizes and sinks</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Deckhand falls overboard</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Captain becomes entangled in deck winch</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Processor dies by suicide while in bunk</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Deckhand falls off dock while trying to board vessel</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

- USCG: United States Coast Guard
- NIOSH: National Institute for Occupational Safety and Health
Work-Related Fatality Rates*, 2021
per 100,000 Full Time Equivalent (FTE) Workers

Average U.S. Worker: 3.6
Commercial Fishing: 75.2
~21x higher

*Bureau of Labor Statistics
Commercial Fishing Fatalities, United States, 2000-2022 (n=944)

52% decrease

IRR = 0.97, p < .001
Commercial Fishing Fatalities, United States, 2000-2022 (n=944)

40% decrease

IRR = 0.95, p = .004
Commercial Fishing Fatalities By Region, 2013-2022 (n=322)

- Alaska: 88, 27%
- Hawaii: 5, 2%
- West Coast: 43, 13%
- Gulf of Mexico: 70, 22%
- East Coast: 116, 36%
Commercial Fishing Fatalities by Incident Type, 2013-2022 (n=322)

- Vessel Disaster: 119 (37%)
- Fall Overboard: 105 (33%)
- Onboard Fatality: 65 (20%)
- Onshore Fatality: 18 (5%)
- Diving Fatality: 15 (5%)
Commercial Fishing Fatalities by Incident Type, 2013-2022 (n=322)

- **Vessel Disaster**: 119 (37%)
- **Fall Overboard**: 65 (20%)
- **Onboard Fatality**: 105 (33%)
- **Onshore Fatality**: 18 (5%)
- **Diving Fatality**: 15 (5%)
Initiating Events of Fatal Vessel Disasters by Vessel Length, 2013-2022 (n=70)

- Flooding
- Unknown Events
- Instability
- Struck by Large Wave
- Collision/Allision
- Crossing Hazardous Bar
- Other

Number of Fatal Vessel Disasters:
- <50' (n=49)
- 50-78' (n=13)
- ≥79' (n=6)
- Unknown (n=2)
Factors Associated with Fatal Vessel Disasters, 2013-2022 (n=70)

- Heavy Weather (36, 51%)
- Navigational Error (7, 10%)
- Alcohol/Drug Use (12, 17%)
- Fatigue (4, 6%)
- Unattended Helm (3, 4%)

Each icon = one case
Commercial Fishing Fatalities by Incident Type, 2013-2022 (n=322)

- Fall Overboard: 105 (33%)
- Vessel Disaster: 119 (37%)
- Onboard Fatality: 15 (5%)
- Onshore Fatality: 65 (20%)
- Diving Fatality: 18 (5%)
Immediate Causes of Fall Overboard Fatalities, 2013-2022 (n=105)

- Lost Balance
- Jumped
- Gear Entanglement
- Trip/Slip
- Knocked by Gear/Object
- Washed Over
- Unknown

Number of Fatalities
Factors Associated with Fatal Falls Overboard, 2013-2022 (n=105)

- MOB Not Witnessed (69, 66%)
  - Each icon = one case

- Alcohol/Drug Use (35, 33%)
  - Each icon = one case

- Fatigue (14, 13%)
  - Each icon = one case

- PFD Worn (2, 2%)
  - Each icon = one case
Commercial Fishing Fatalities by Incident Type, 2013-2022 (n=322)

- **Vessel Disaster**: 119, 37%
- **Fall Overboard**: 105, 33%
- **Onboard Fatality**: 65, 20%
- **Onshore Fatality**: 15, 5%
- **Diving Fatality**: 18, 5%
Causes of Onboard Fatalities, 2013-2022 (n=65)

- Drug Overdose: 30 fatalities
- Struck by Gear/Equipment: 10 fatalities
- Gear Entanglement: 10 fatalities
- Suicide: 6 fatalities
- Homicide: 5 fatalities
- Asphyxiation: 3 fatalities
- Fall From Height: 2 fatalities
- Heat Stroke: 2 fatalities
- Chemical Burns: 2 fatalities
- Electrocution: 2 fatalities
- Fire/Explosion: 2 fatalities

Number of Fatalities
Commercial Fishing Fatalities by Fishery (≥10) and Incident Type, 2013-2022 (n=168)

- Gulf of Mexico Shrimp
- Alaska Salmon
- East Coast Scallop
- Alaska Cod
- West Coast Dungeness Crab
- East Coast Crab
- East Coast Lobster
- East Coast Multi-Species
- Gulf of Mexico Snapper/Grouper

Number of Fatalities

- Vessel Disaster
- Fall Overboard
- Onboard Fatality
- Onshore Fatality
- Diving Fatality
Recommendations

Vessel Disasters

- Take a marine safety training class at least once every five years
- Participate in monthly drills
- Ensure watertight integrity
- Maintain proper watch
- Adhere to stability instructions

Photo: USCG
Recommendations

Falls Overboard

- Wear a PFD on deck
- Use a man-overboard alarm system
- Add effective recovery devices and re-boarding ladders
- Conduct man-overboard drills monthly
Recommendations

Onboard Fatalities

- Install safety devices on deck machinery
- Eliminate slip and trip hazards
- Develop safe work policies and practices
- Consider making naloxone available on fishing vessels

Photo: NIOSH
USCG-NIOSH Commercial Fishing Safety Research & Training Grants
Commercial Fishing Occupational Safety Research & Training Program

- Foster and enhance new research to improve commercial fishing safety
- Enhance the quality and availability of safety training for fishermen
- USCG and NIOSH signed Memorandum of Understanding in 2018 to administer the grants

[cdf.gov/niosh/oep/commercial-fishing-research-training/](http://cdc.gov/niosh/oep/commercial-fishing-research-training/)
Examples of Funded Research Projects

- Developing a near-miss sharing system (American Bureau of Shipping)
- Assessing sleep deprivation in fishermen (Northeast Center for Occupational Health and Safety)
- Improving fall overboard recovery in the Gulf of Mexico (University of Texas)
- Reducing ergonomic hazards associated with Dungeness crab fishing gear (Oregon State University)

Photo: Northeast Center for Occupational Health and Safety
Examples of Funded Training Projects

- National fishing safety training infrastructure *(AMSEA)*
- Community-based safety training in New England *(Fishing Partnership)*
- Fishermen first aid and safety training *(Oregon State University)*
- Comprehensive safety and wellness program in Maine *(Maine Center for Coastal Fisheries)*
Funding Information

- $6 million available in FY2023
- Individual grant awards are $150,000 - $975,000
  - Funding is for 3 years
  - Requires 25% cost match of amount awarded
- Last cycle – January 31, 2023
  - Nine applications under review
- Next application deadline – August 29, 2023
Eligible Organizations

- Higher education institutions
- Non-profits
- Businesses
- Governments (state, local, tribal)
- Tribal organizations
- Fishing associations
- Faith-based or community-based organizations

cdc.gov/niosh/oep/commercial-fishing-research-training/
Thank You!

Samantha Case, PhD, MPH, CSP
scase@cdc.gov

www.cdc.gov/niosh/topics/fishing/
www.cdc.gov/niosh/topics/maritime/