

Commercial Fishing Safety Research Updates from NIOSH

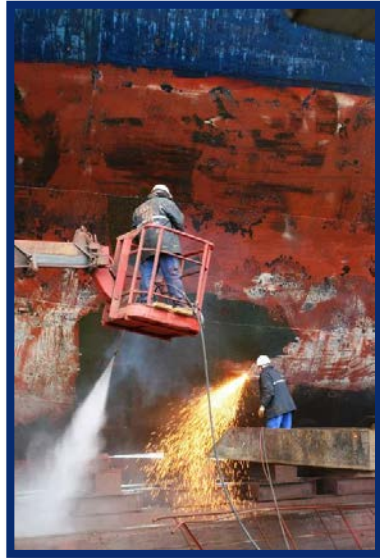
Samantha Case, MPH

North Pacific Fishery Management Council Meeting

April 3, 2019



Center for Maritime Safety and Health Studies



- Brings focus to safety and health needs for maritime workers in:
 - **Commercial fishing**
 - **Seafood processing**
 - Aquaculture
 - Marine terminals
 - Shipyards
 - Marine transportation
- Internal and external researchers work to understand problems and how to reduce them
- Collaborates with industry and workers

Commercial Fishing Safety Research and Design Program

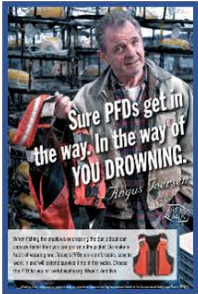
Epidemiology



Engineering



Health Communication

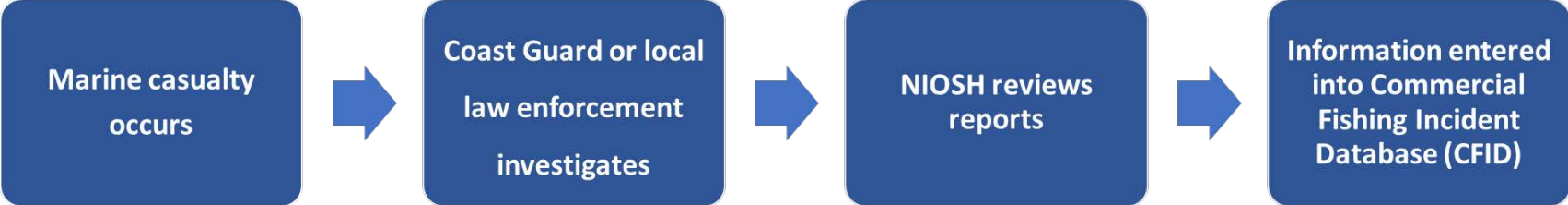


Outline

- Commercial Fishing Fatality Update
 - National
 - Alaska
- Recent Products and Activities
- Current and Future Projects

Commercial Fishing Fatality Update

Collecting Fatality and Vessel Disaster Data



DEPARTMENT OF HOMELAND SECURITY
U.S. Coast Guard
OMB No. 1625-0001
Reg. Date: 03/31/2019

REPORT OF MARINE CASUALTY, COMMERCIAL DIVING CASUALTY, or OCS-RELATED CASUALTY

Section I - Reporting Vessel/Facility Information

1. Vessel or Facility Name	2. Vessel Official Number or BNO Number	3. Vessel Flag
4. Vessel Length <input type="checkbox"/> Feet <input type="checkbox"/> Meters	5. Vessel Gross Tons	6. Vessel Propulsion Type
7. Vessel or Facility Type	8. Vessel or Facility Service or Occupation	

9. Arrangement FOR TOWING ONLY <input type="checkbox"/> Pushing Ahead <input type="checkbox"/> Towing Aft <input type="checkbox"/> Towing Alongside	10. Number of Vessels Towed: Empty: <input type="text"/> Loaded: <input type="text"/> Total: <input type="text"/>	11. Maximum Size of Tote/Tow-Boat(s): Length: <input type="text"/> feet Width: <input type="text"/> feet	12. Did one or more of the barges in the tow cause or sustain damage in the marine casualty? <input type="checkbox"/> Yes <input type="checkbox"/> No (If No complete and attach one or more CG-2602A forms to this report)
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Section II - Reason for Submitting this Report (Check all that apply)

1. Unintended grounding or an unintended strike of a barge or bridge

2. Intended grounding or intended strike of a barge that created a hazard to navigation, the environment or the safety of the vessel, or that meets any of the criteria in 3 through 5 below

3. Loss of main propulsion, primary steering, or any associated component or control system that reduces the maneuverability of the vessel

4. Occurrence materially and adversely affected the vessel's seaworthiness or fitness for service or route

5. Loss of life

6. Injury that requires professional medical treatment (treatment beyond first aid) and, if the person is engaged or employed on board a vessel in commercial service, that renders the individual unable to perform his or her routine duties

7. Occurrence causing property damage in excess of \$25,000

8. Occurrence involving significant harm to the environment

Victim and Survivor Data

Incident ID: 2618111 Last Name: First Name:

Demographic DOB: 02/12/1960 Gender: Male Race: White Residence: VA-22042/0120 Status: Married Time in Service: 10 Pension: Unchecked Vital Process: 0100 Self Confidence: Full Confidence Legal Design: 0	Incident Information Event: Unintentional - Accident State: Unchecked Type of Incident: Unchecked Time in Service: 10 Task Force: 0 Location: Unchecked Actual Level: Unchecked	Survivor Equipment PFD Size: <input type="text"/> PFD Type: <input type="text"/> Vest Pockets: <input type="text"/> Vest Size: <input type="text"/> Location: Unchecked Aluminum To: <input type="text"/> Ship Name: <input type="text"/> Other Equipment: <input type="text"/>
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Classification System Coding

RLS/MSR Codes Hazard of Injury: 14 Body Part: 102	MSR/JSR Codes ICD 10 External: W42.0 ICD 10 External: S0C	Industry/Occupation SOC: <input type="text"/>
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CFID Coding
CFID Section: 2112
CFID Event: E20

Injury Coding
Injury Agent: Mechanical Energy
Injury Severity: Severe
Injury Response: OCSG Sub-Medical
Injury Treatment 1:
Injury Treatment 2:
Injury Treatment 3:

Confidence:

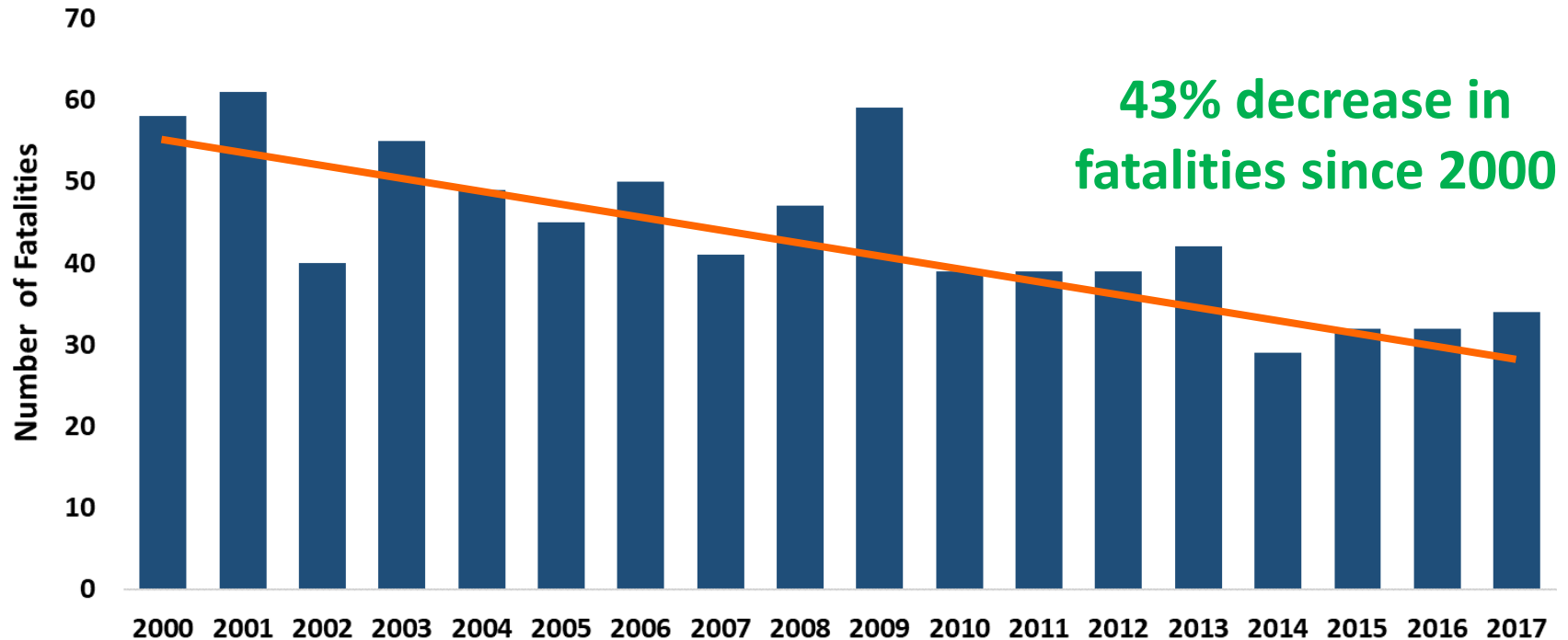
Main Safety Training:

Train Year:

AKA Fullname:

Save and Close

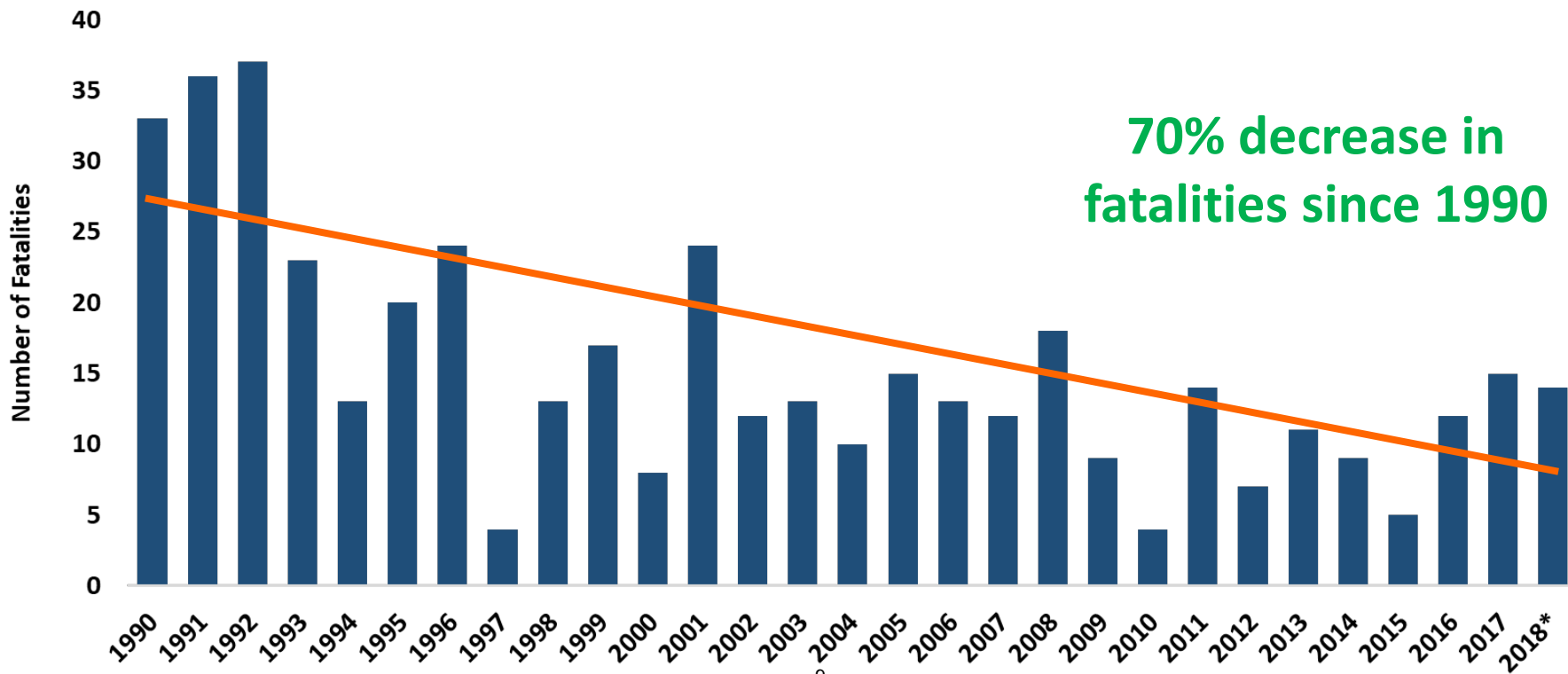
US Commercial Fishing Fatalities, 2000-2017 (n=791)



Alaska Commercial Fishing Fatalities, 1990–2018*

(n=445)

B8 NIOSH Update
April 2019

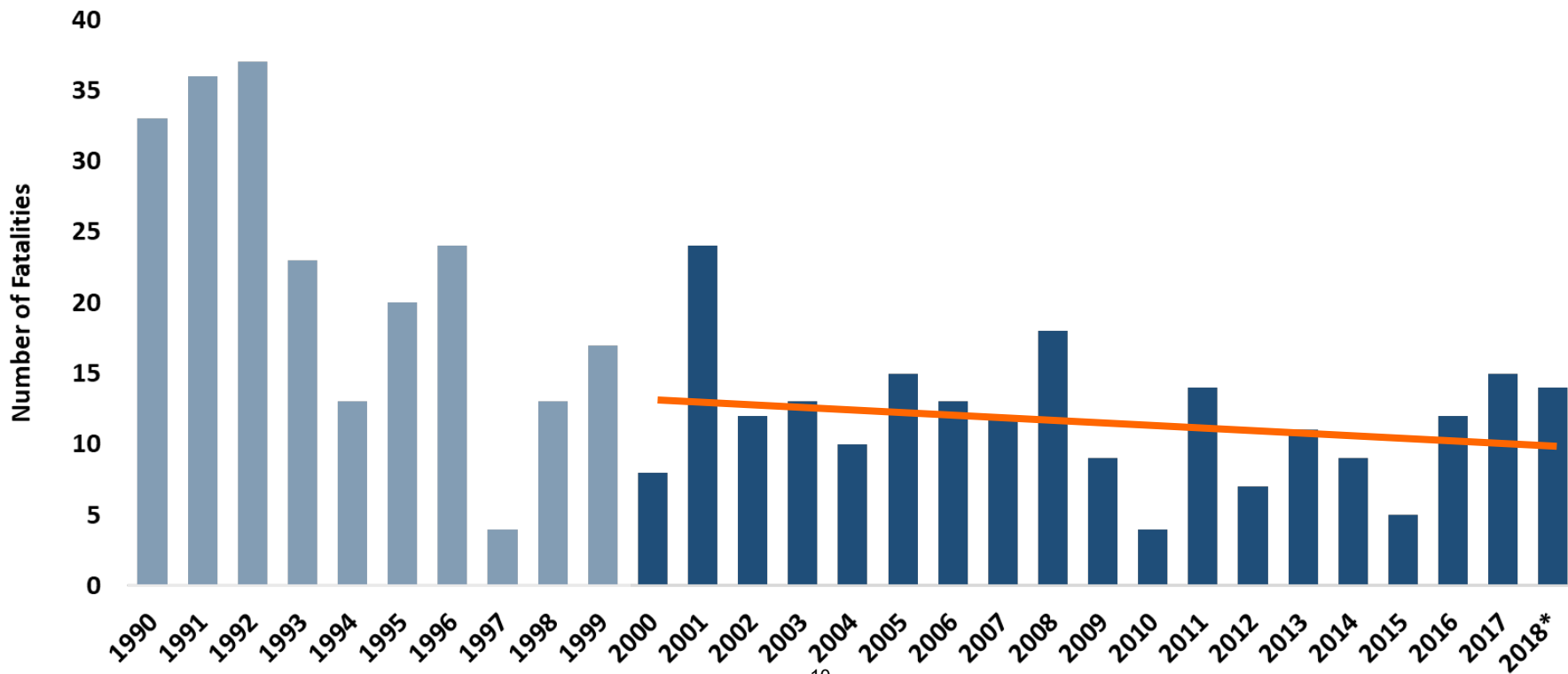


IRR = 0.958; $p < 0.001$

*2018 data are preliminary

Alaska Commercial Fishing Fatalities, 1990–2018* (n=445)

B8 NIOSH Update
April 2019

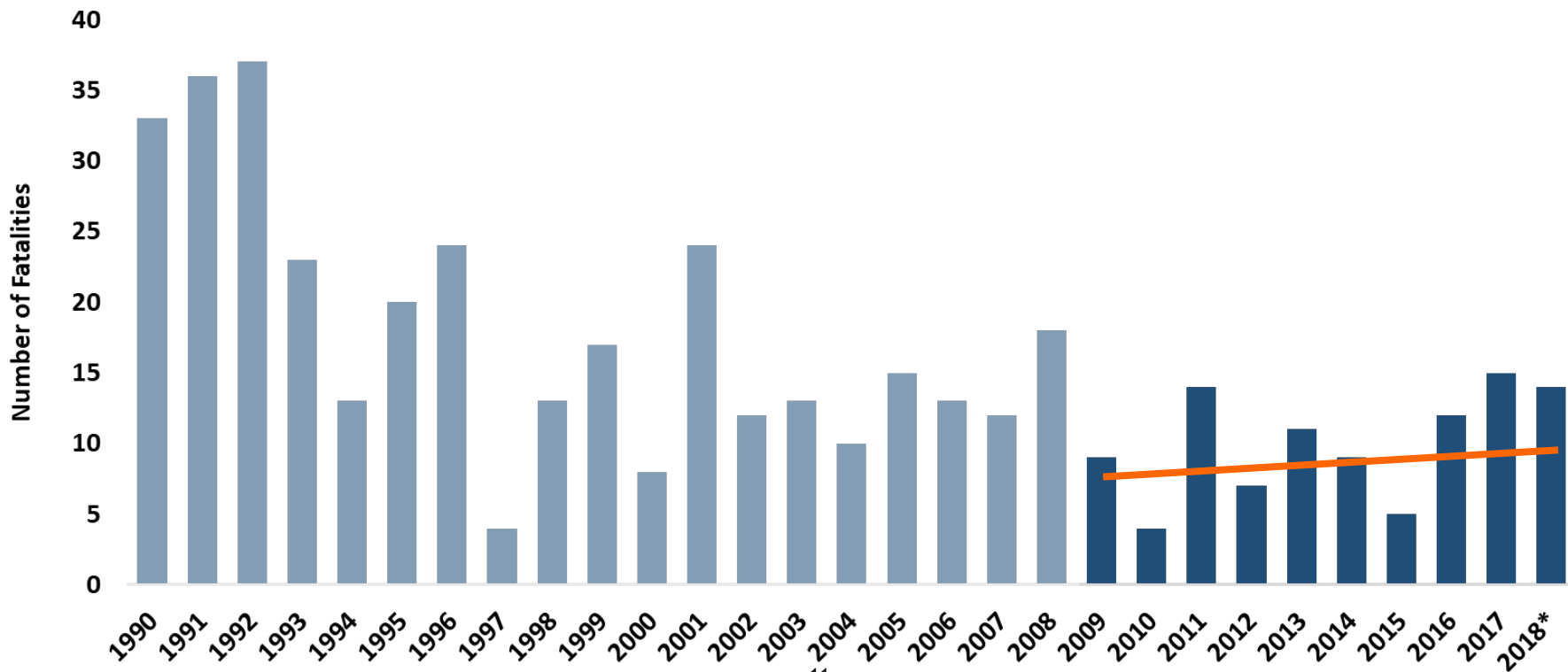


IRR = 0.983; p = 0.162

*2018 data are preliminary

Alaska Commercial Fishing Fatalities, 1990–2018* (n=445)

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April 2019



11

IRR = 1.065; p = 0.071

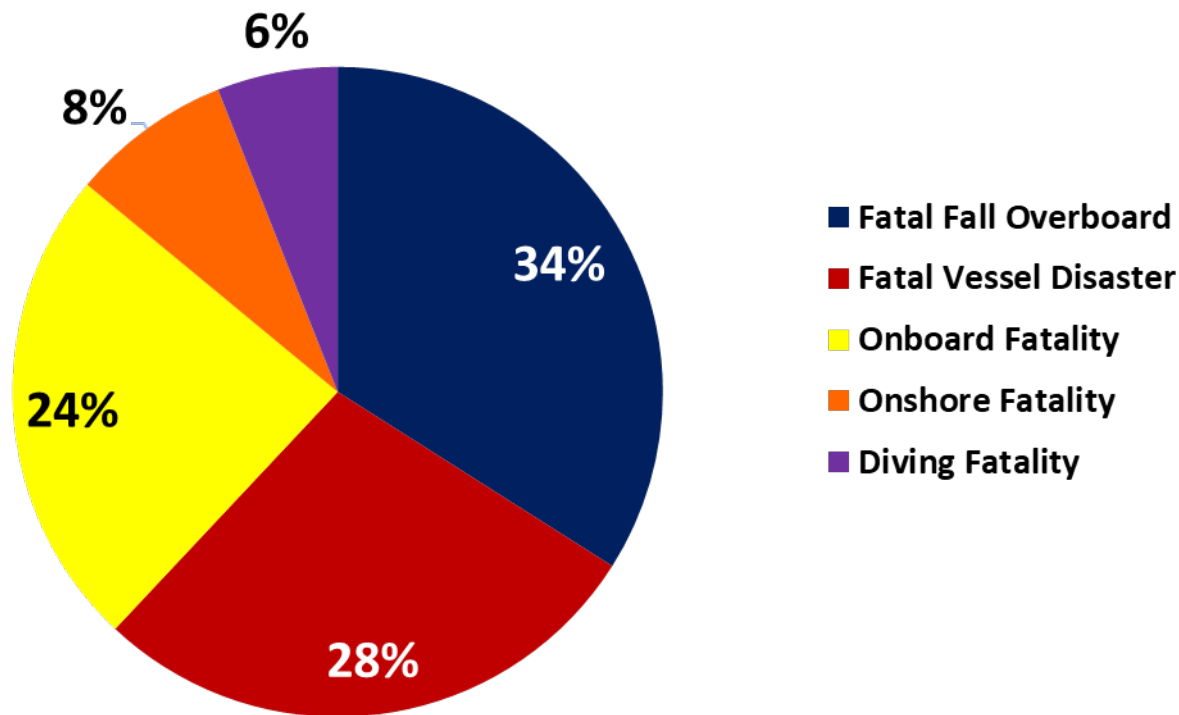
*2018 data are preliminary

Alaska Commercial Fishing Fatalities, 2009–2018*

(n=100)

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April 2019

Fatalities by Incident Type

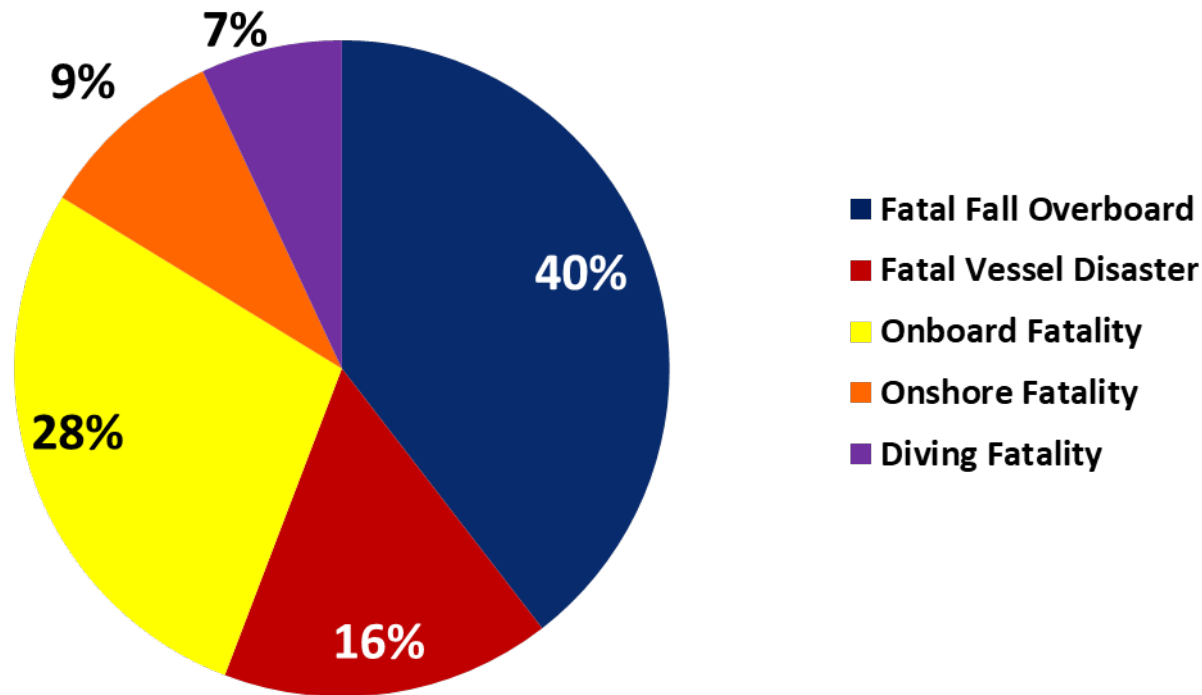


Alaska Commercial Fishing Fatalities, 2009–2018*

(n=100)

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April 2019

Events by Incident Type (n=86)

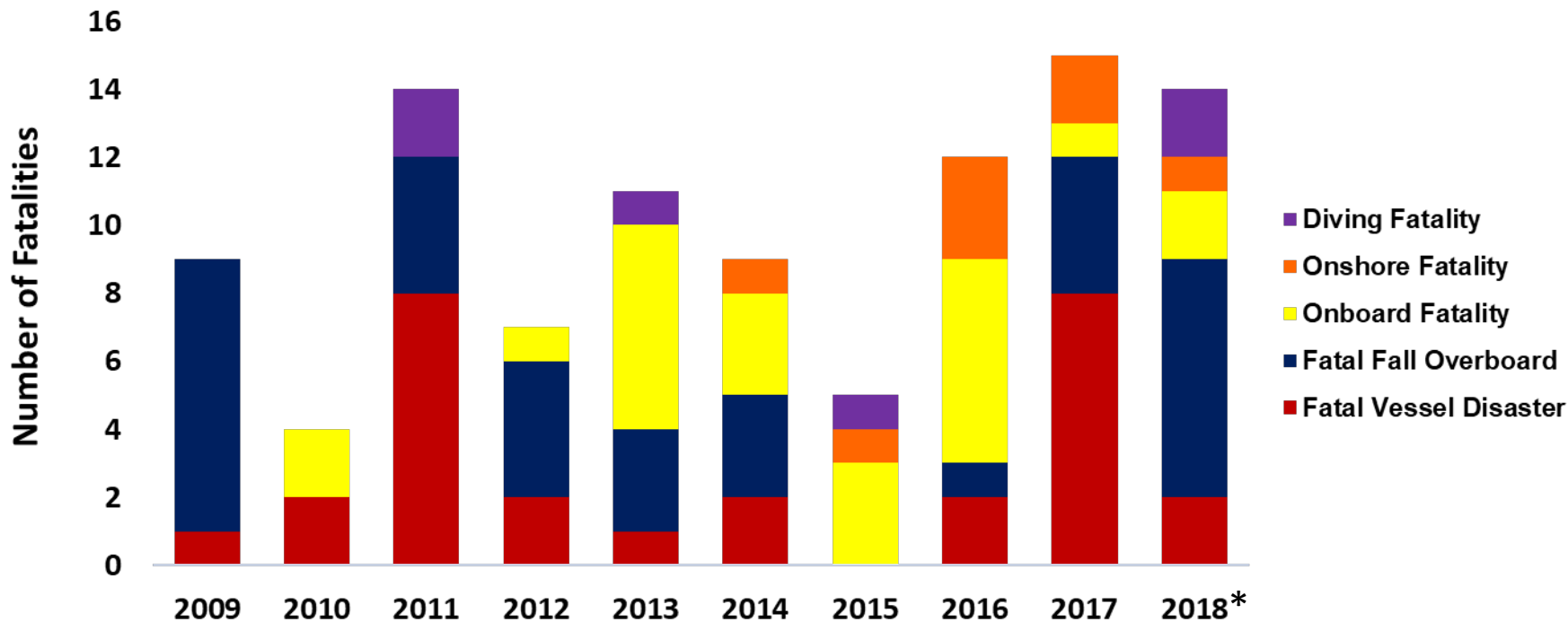


Alaska Commercial Fishing Fatalities, 2009–2018*

(n=100)

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April 2019

Fatalities by Year and Incident Type

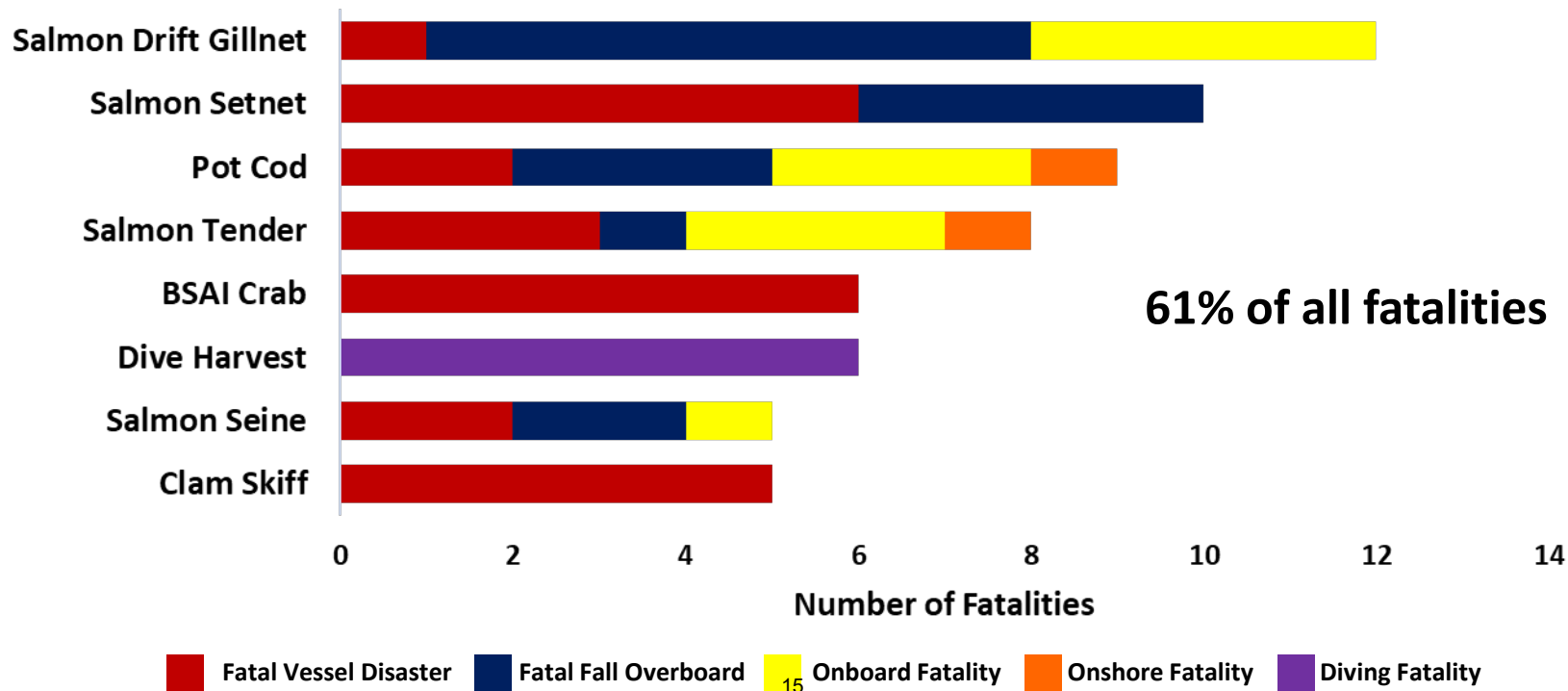


*2018 data are preliminary

Alaska Commercial Fishing Fatalities, 2009–2018* (n=100)

B8 NIOSH Update
April 2019

Fatalities by Fishery (≥5) and Incident Type



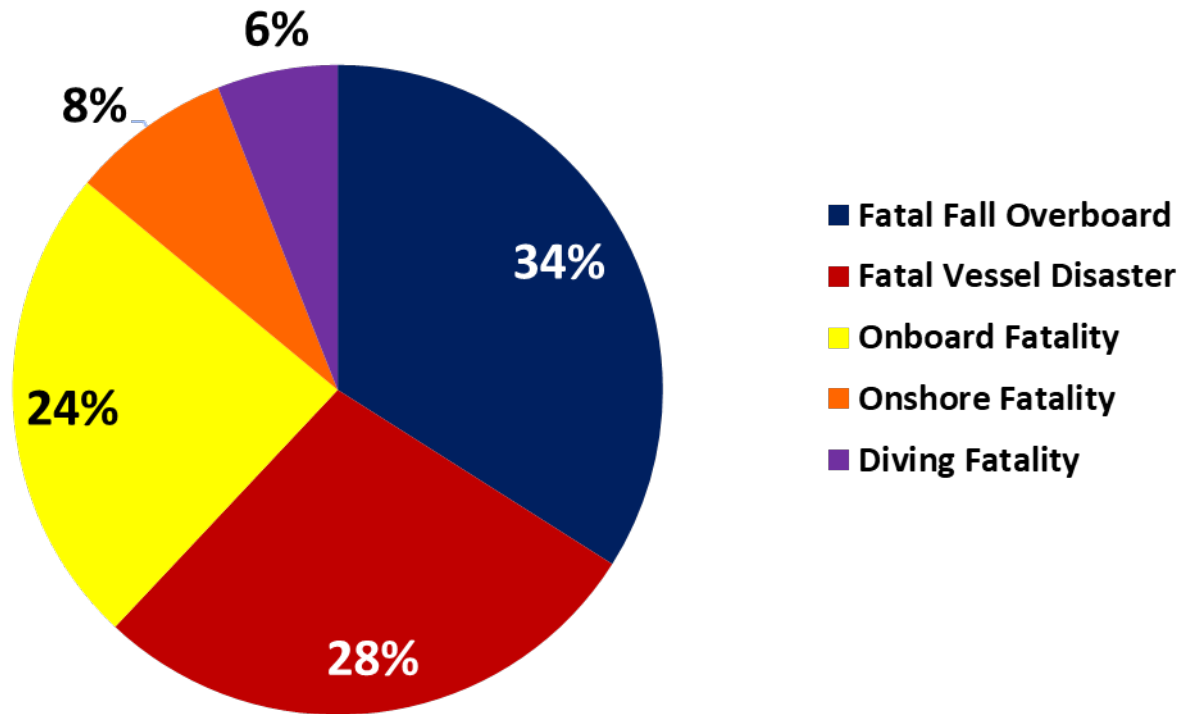
*2018 data are preliminary

Alaska Commercial Fishing Fatalities, 2009–2018*

(n=100)

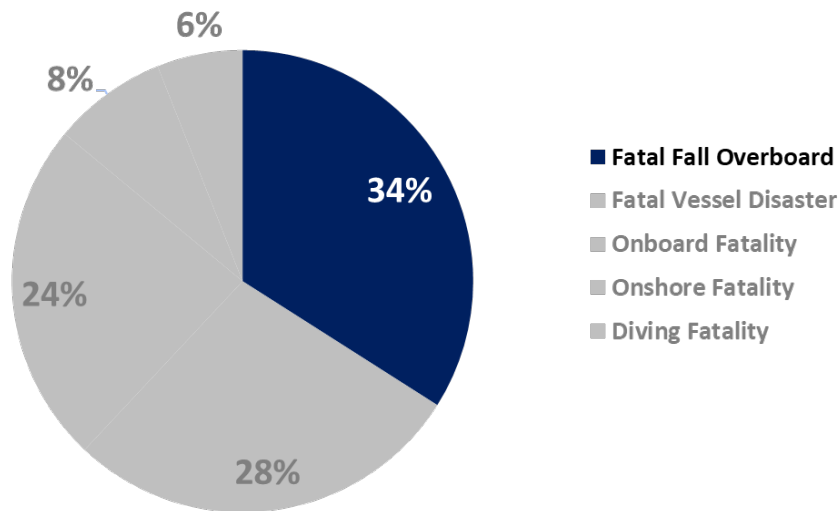
B8 NIOSH Update
April 2019

Fatalities by Incident Type



Alaska Commercial Fishing Fatalities, 2009–2018* (n=100)

B8 NIOSH Update
April 2019



- Not witnessed (52%)
- No PFDs (100%)
- Most common fisheries:
 - Salmon (drift gillnet, setnet)
 - Pot cod

Reducing Fall Overboard Deaths

■ Prevent

- Enclosed workspaces (rails, shelter decks)
- Tethers
- Eliminate trip/slip and entanglement hazards
- Drug and alcohol-free policies



Photo: Alaska Gold Seafood



Reducing Fall Overboard Deaths

■ Recover

- PFD
- Man-overboard alarm
- Engine kill switch devices
- Method to re-board:
 - Recovery devices
 - Re-boarding ladders
 - Integrated boarding steps



Reducing Fall Overboard Deaths

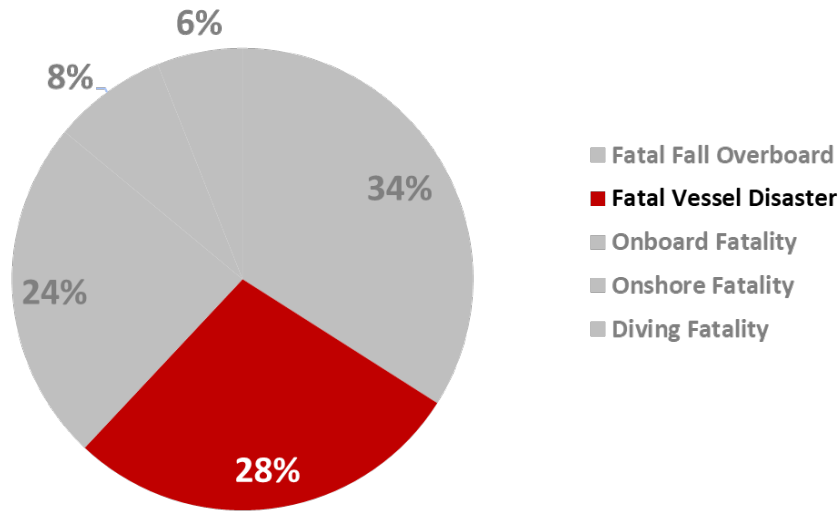
■ Treat

- CPR
- Cold water immersion treatment
- Professional medical assistance



Alaska Commercial Fishing Fatalities, 2009–2018* (n=100)

B8 NIOSH Update
April 2019



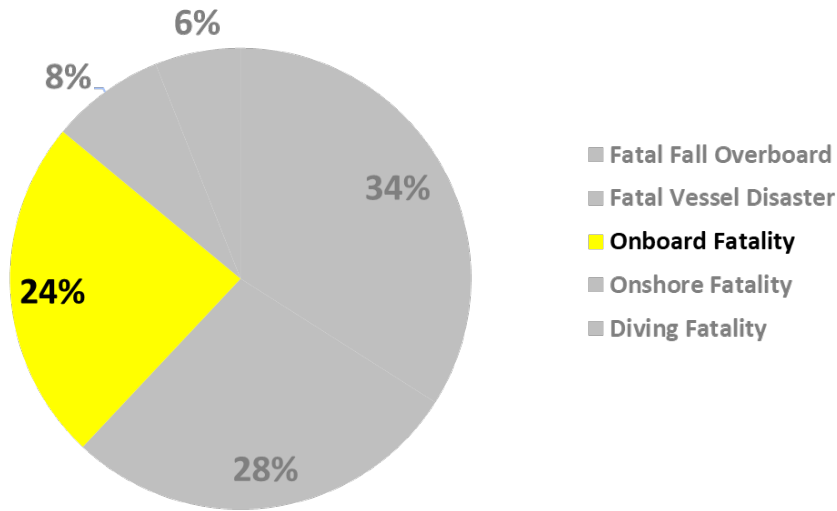
- 14 vessel disasters
 - Instability (7 disasters)
 - Overloading
 - Structural modifications
- Most common fisheries:
 - Salmon setnet
 - BSAI Crab, Clam – single incidents with high number of deaths

Preventing and Surviving Vessel Disasters

- **Ensure watertight integrity**
 - Inspect hull
 - Close doors, hatches while underway
 - Test high water alarms
- **Maintain proper watch**
 - Fatigue management
- **Adhere to federal safety regulations**
 - USCG Dockside Exam – mandatory outside 3nm
 - Skiffs – know regulations and exemptions
- **Adhere to stability instructions**
 - Consult naval architect
- **Train and drill regularly**

Alaska Commercial Fishing Fatalities, 2009–2018* (n=100)

B8 NIOSH Update
April 2019



- Non-operational (15 deaths)
 - Drug overdose
 - Suicide
 - Homicide
- Other causes:
 - Struck by gear/equipment
 - Gear entanglement
 - Asphyxiation

Recent Products and Activities

Fatal Falls Overboard in Commercial Fishing

Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
Weekly / Vol. 67 / No. 16
April 27, 2018

**Workers' Memorial Day —
April 28, 2018**

**Fatal Falls Overboard in Commercial
Fishing — United States, 2000–2016**

Samantha L. Case, MPH¹; Jennifer M. Lincoln, PhD¹; Devin L. Lucas, PhD¹

During 2000–2016 **204** commercial fishermen died from falling overboard in the US

NONE were wearing a life jacket when they died



59% of falls overboard were unwitnessed

You can help prevent future fatalities:

-  wear a life jacket
-  use a man overboard alarm
-  practice man overboard retrieval
-  take a marine safety class

read the report at cdc.gov/mmwr/
learn more at cdc.gov/niosh/topics/fishing/falls-overboard.html

Safety Success Story Videos



My Life Vest Saved Me

NIOSH Website <https://www.cdc.gov/niosh/docs/video/2018-107d/>

YouTube:
<https://www.youtube.com/watch?v=HuZPoUjj0vU&feature=youtu.be>



I Reached Over and Hit the E-Stop

NIOSH Website <https://www.cdc.gov/niosh/docs/video/2018-153/>

YouTube:
<https://www.youtube.com/watch?v=a3kfUQ3BCr0&feature=youtu.be>

Surfclam and Ocean Quahog Hazard Assessment

Assessment of Occupational Hazards in the Atlantic Surfclam and Ocean Quahog Fisheries

Prepared by: Samantha Case, MPH; Elizabeth Fitzgerald, MA; Laura Syron, PhD, MPH

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Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention.

- MAFMC – Surfclam and Ocean Quahog Catch Share Program Review
- Analysis of:
 - Fatalities
 - Nonfatal injuries
 - Vessel sinkings
- Identified hazards and appropriate recommendations

IFISH 5 – St. John's, NL – June 2018

- Sharing of research and best practices in commercial fishing, seafood processing, and aquaculture
- Topics on fishery management and safety:
 - Recent Global Conventions and Resolutions Targeting Improved Safety, Health, and Sustainability at Sea in the Fisheries Sector
 - Evaluating the Effects of Fishery Management Measures on Risk-taking and Safety in Commercial Fishing: Efforts by the National Marine Fisheries Service



Vessel Characterization Working Group

- Goal: Determine “reliable estimate of population of commercial fishing vessels actively fishing, landing, and selling their catch; the fishery in which a vessel operates; and key vessel characteristics”
- 8,252 domestic vessels actively fishing in federal waters in 2017
- Updated datasets provided annually
- Supplements NIOSH fishery data



USCG-NIOSH Research and Training Grants

- Established by:
 - Coast Guard Authorization Act of 2010
 - Howard Coble Coast Guard and Marine Transportation Act of 2014
- USCG and NIOSH partnered to administer \$6M over two years
- Encourages fishery- and region-specific research and safety training
- Applications were received
- Plan to award grants in August

Current and Future Projects

Updated In-Depth Fatality Analysis - 2020

Commercial Fishing Fatality Summary

■ Alaska Region ■



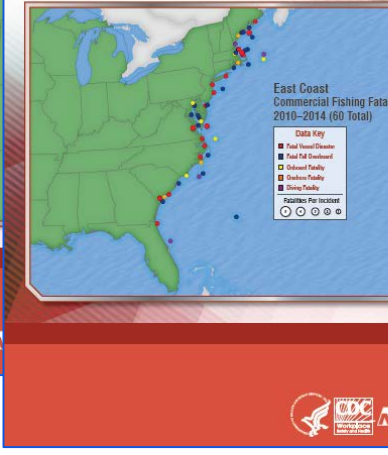
Commercial Fishing Fatality Summary

■ West Coast Region ■



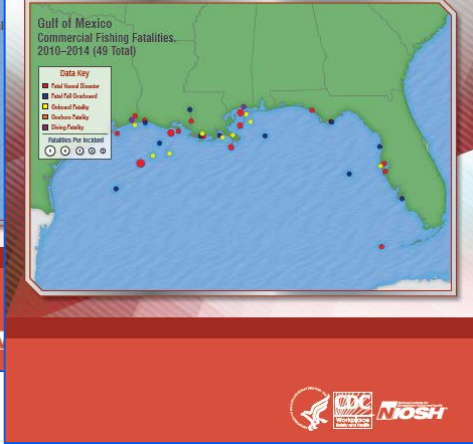
Commercial Fishing Fatality Summary

■ East Coast Region ■



Commercial Fishing Fatality Summary

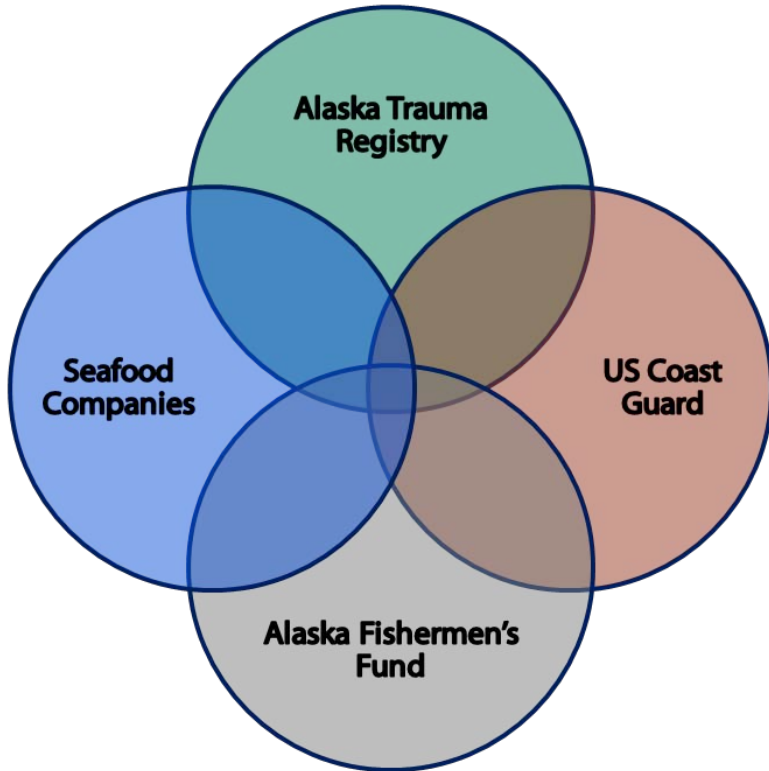
■ Gulf of Mexico Region ■



Are Vessel Casualties Predictors of Future Disasters?

- If vessel casualties lead to eventual disaster, then preventing lesser casualties could result in more lives saved
- Comparing vessels based on:
 - Casualty history
 - Age
 - Length
 - Hull material
 - Fishing vessel safety decal status

Nonfatal Injuries and Illnesses in Commercial Fishing



- Determine injury and illness patterns
- Identify safety and health problems
- First in Alaska, then nationally using multiple data sources

Understanding Barriers to Adoption of Fishing Safety Technologies

- Maximize the impact of NIOSH engineering solutions
 - Will these interventions be adopted?
 - What might stand in the way?
- Interviews with fishermen underway



Working Hours, Sleep, and Fatigue in Fishing

- Literature review of fatigue in Agriculture, Forestry, and Fishing
- Events:
 - 24th International Symposium on Shiftwork & Working Time – Sep. 9-13
 - Working Hours, Sleep & Fatigue Forum – Sep. 13-14
- Anticipated journal article in 2020
- Promote fatigue research and interventions



**Working Hours,
Sleep & Fatigue**

Meeting the Needs
of American Workers
& Employers

Seafood Processing Ergonomic Research

- Seafood processors at risk for injuries due to:
 - Overexertion from lifting, lowering, pushing, pulling
 - Repetitive motion
- Ergonomic research a priority
 - Job analyses
 - Contract ergonomist to help assist in this line of research



Summary

- Much progress has been made in saving lives, but challenges remain
- Fatalities preventable through:
 - Good marine practices
 - Use of available safety technologies
 - Marine safety training and drills
- Exploring new research areas to improve safety and health
- What issues would you like to hear about?

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

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

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