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# Introduction to Common Bycatch and Bycatch Mortality Reduction Tools Used for Managing Fisheries

Shrimp Working Group Meeting  
June 30, 2026

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# Bycatch and Bycatch Mortality Reduction

## Magnuson-Stevens Act National Standard 9 Requirement

- Conservation and management measures shall, to the extent practicable, minimize bycatch, and to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

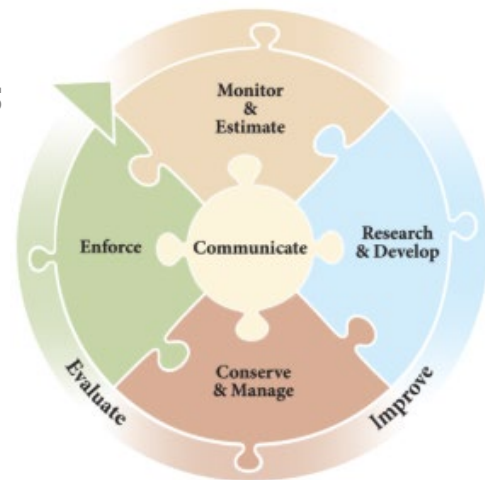
## ESA Incidental Take Exemption and Monitoring Requirements in Addition to Ensuring No Jeopardy

- Action agency is required to document incidental take and to minimize the impact of that take.
- Action agency requirements must be implemented for the incidental take exemption to be valid.

NOAA [2016 Fisheries National Bycatch Reduction Strategy](#)

[Integration of ESA Section 7 with MSA Processes Policy Directive](#)

2016 National Bycatch Reduction Strategy Objectives:



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# Common Tools Used in Federal Fisheries to Reduce Incidental Catch and Mortality

- **Gear Modifications:** Physical changes made directly to the fishing gear.
- **Changes in Operational or Fishing Behavioral Practices:** Direct changes to crew behavior and fishing actions on the water.
- **Data Collection Tools:** Systems (often technological/digital) providing the data necessary to make informed management decisions.



# Examples of Gear Modifications

- **Escape Openings:** Integrating Turtle Excluder Devices (TEDs) and Bycatch Reduction Devices (BRDs) into trawl nets.
- **Net Configuration & Ground Gear Adjustments:** Raised footropes, separator panels, semi-pelagic trawl doors, Modifying or completely prohibiting the use of traditional tickler chains.
- **Sensory Devices:** Deploying active or passive gear attachments, including:
  - LED lights
  - Acoustic deterrents

# Examples of Operational or Fishing Behavior Changes/Practices

- **Spatial Risk Management:** Actively identifying high-risk interaction areas to deploy targeted management or increased monitoring.
- **Time and Area Closures:** Implementing static or dynamic closures to keep fleets out of high-bycatch zones.
- **Effort Restrictions:** Tow-time limits reduce likelihood of animal mortality in the net.
- **Best management practices and education.**

# Best Management Practices and Education

- **Bycatch Prevention:** Instituting industry-wide best management practices (BMPs) for minimizing initial incidental catch like captain communication programs.
- **Mortality Mitigation:** BMPs designed specifically to maximize survival rates after an animal is caught (i.e., safe handling and release requirements or guidelines).
- **Outreach and/or Training:** Mandatory or voluntary outreach, safe release, and animal handling practices training for crews.

# Data Collection Tools to Reduce Risks Associated with Unreported or Unknown Impacts

- **Observer Coverage:** Increased coverage for high risk areas
- **Electronic Monitoring (EM):** Mandating electronic data capture devices for high-risk areas, specifically:
  - Onboard camera systems
  - Vessel Monitoring Systems
- **Real-Time Data Sharing:** Utilizing real-time mapping applications and fleet-wide communication platforms.

# Putting the Data Together: Where Do We Go/How From Here?

- So far we have focused on building our collective knowledge of each species, fishery, and interaction data
- What additional data or analyses do we, the Working Group, need to be prepared for the next meeting?