



**NOAA**  
**FISHERIES**

# Draft National Bycatch Reduction Strategy

## INTRODUCTION

NOAA Fisheries' core mission is to promote productive and sustainable fisheries and improve the recovery and conservation of protected resources—all backed by sound science and an ecosystem-based approach to management. One key aspect of fulfilling this mission is reducing bycatch. This National Bycatch Reduction Strategy is intended to guide and coordinate our efforts to reduce bycatch and bycatch mortality in the coming years.

### *What is bycatch?*

Bycatch occurs when fishing operations unintentionally catch and discard fish, cause unobserved injury and mortality, or interact with living marine resources such as marine mammals, sea turtles, seabirds, protected fish, corals, and sponges.

NOAA Fisheries has mandates under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), and other domestic laws and international agreements to reduce and minimize bycatch, but these mandates address bycatch in different ways. Under the MSA, bycatch is defined as fish<sup>1</sup> that are harvested in a fishery, but which are not sold or kept for personal use, and includes both economic and regulatory discards. An economic discard is a fish that is caught but is discarded because it has a low market value—for example, it may be too small, of poor quality, or discarded for other economic reasons. A regulatory discard is a fish that is discarded because regulations do not allow fishermen to retain the fish when it is caught.



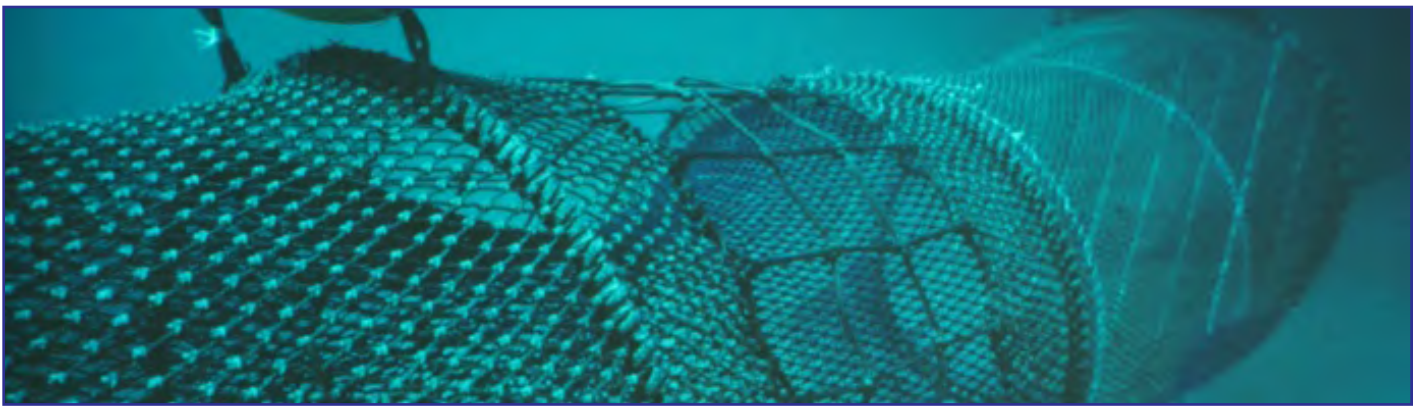
For protected species under the ESA and MMPA, bycatch is a type of “take.” The ESA and MMPA have different definitions of take; however, in general, take includes any of the following actions: capturing, collecting, harming, harassing, hunting, killing, pursuing, shooting, trapping, or wounding any species protected by the MMPA or the ESA, or attempting to engage in any such conduct. While “take” is generally prohibited for species protected under the MMPA and ESA, both laws include exemptions to prohibitions on incidental take in some circumstances.

For the purposes of this document, NOAA Fisheries defines “bycatch” broadly, as discarded fish or interactions between fishing operations and protected species. This definition is not specific to any one statute, but broadly encompasses the many statutes NOAA Fisheries implements.

Similarly, “reducing bycatch” refers to efforts that can minimize the amount of bycatch, as well as minimize the mortality, serious injury, and impact (e.g. biological, economic social) of bycatch that does occur. Reducing bycatch may also include efforts to encourage utilization of economic discards in commercial fisheries.

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<sup>1</sup>Fish, as defined in the MSA, “means finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds.” 16 U.S.C. § 1802(12). The MSA definition of fish includes sea turtles, corals, and sponges.



## ***Why can bycatch be a problem?***

Impacts from bycatch and bycatch mortality vary across fisheries, and can have significant biological, economic, and social consequences. Bycatch can affect protected species by harming individuals, contributing to population declines, and impeding population recovery. Bycatch can also contribute to overfishing and impede fishery rebuilding plans. There can be economic and social impacts to fishermen and their communities if bycatch levels trigger a regulatory action, such as closure of a fishery. When one stock in a multi-stock fishery has regulatory limits on bycatch, catch of other stocks within the fishery may be restricted when the limit is met. This can create economic costs and uncertainty for fishermen and fishing communities. Bycatch can also have ecological impacts on foraging, predation, or other processes that affect marine ecosystems and fishery productivity. Bycatch of habitat-forming benthic species, such as corals and sponges, can cause damage to habitats for fish and other species.

## ***What is NOAA Fisheries doing about bycatch?***

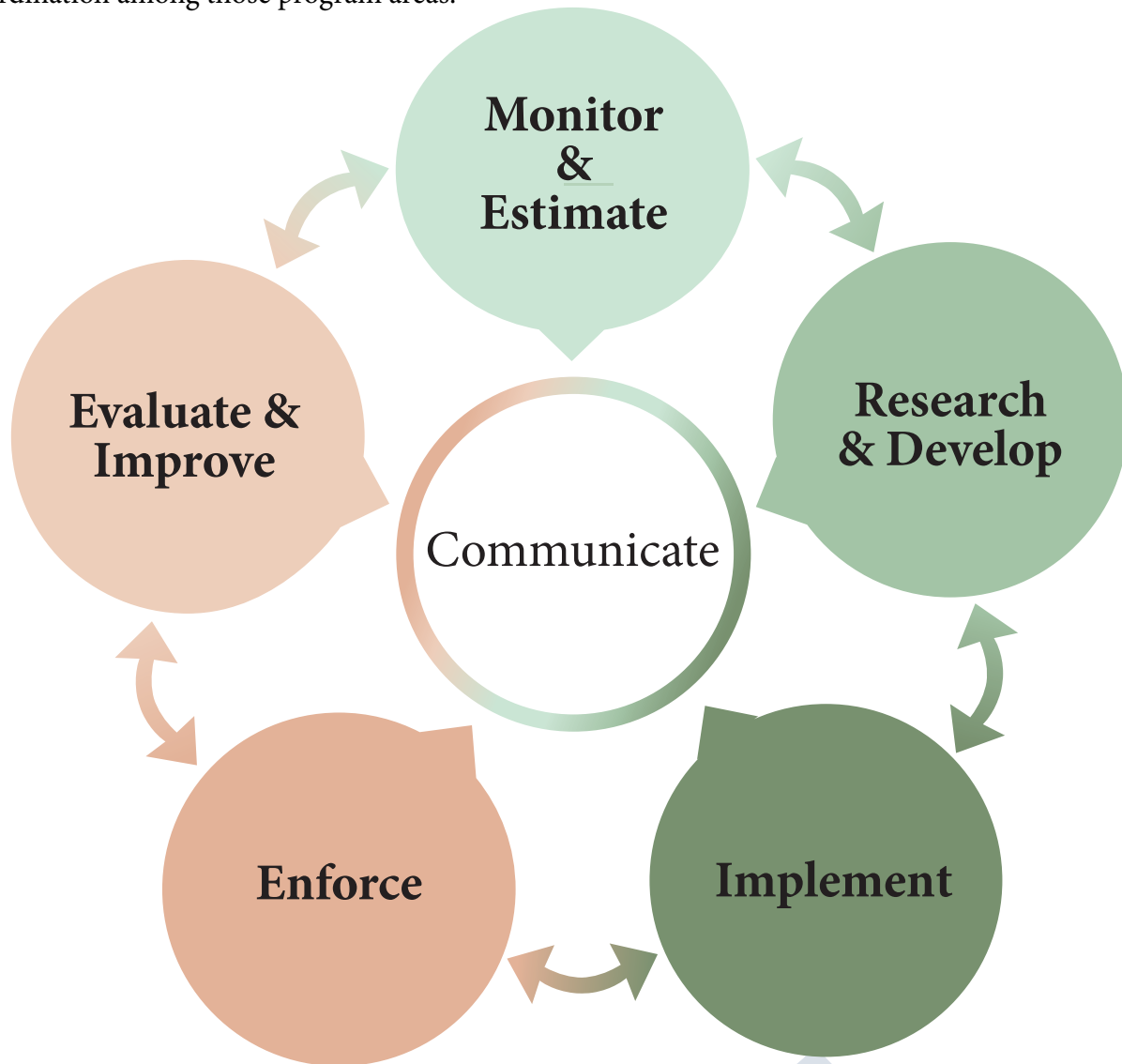
For many years, NOAA Fisheries and our partners have made significant investments in bycatch reduction programs. To ensure we continue to make advancements in addressing bycatch both domestically and internationally, we have reviewed our programs and identified new strategies to further this work. We conducted the first review of our bycatch work in 1997-1998, which resulted in the 1998 report, *Managing the Nation's Bycatch: Priorities, Programs and Actions for the National Marine Fisheries Service*. In 2003, NOAA Fisheries' National Bycatch Strategy built on that work and outlined concrete actions to enhance NOAA Fisheries' bycatch efforts.

Since publishing the 2003 strategy, we have worked closely with our partners to develop and implement bycatch reduction efforts across many program areas, including:

- Working with the regional fishery management councils to develop and implement robust management measures to minimize bycatch, including time and area closures
- Developing bycatch reduction technologies, such as turtle excluder devices (TEDs) and bycatch reduction devices, to be used in active fishing gear
- Convening multi-stakeholder Marine Mammal Take Reduction Teams
- Supporting national research programs, such as the Bycatch Reduction Engineering Program
- Implementing observer programs to record at-sea bycatch
- Promoting the adoption of bycatch reduction measures in international regional fishery management organizations

Although some of the activities outlined in the 2003 National Bycatch Strategy are still relevant, many have been completed. In addition, the 2007 MSA reauthorization created new requirements for bycatch minimization. This National Bycatch Reduction Strategy reflects current efforts and ensures that programs are aligned with both current and emerging priorities.

Efforts to address bycatch fall into six broad program areas (below). This strategy recognizes that we can be most effective in achieving our goal to reduce bycatch when there is coordination across these program areas, within the agency, and with partners, fishermen, and other stakeholders. The objectives and strategies in this document provide a framework to enhance the effectiveness of current programs and improve coordination among those program areas.

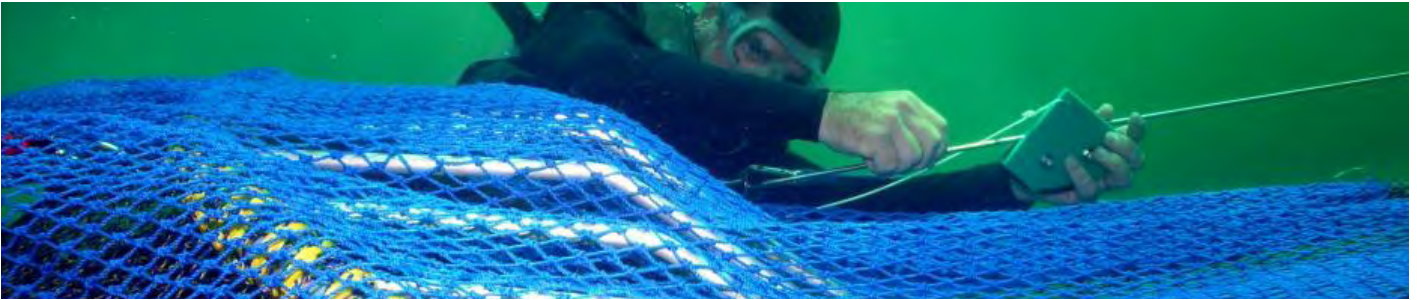


- **Monitor and Estimate:** We monitor and estimate the rates of bycatch and bycatch mortality in fisheries to understand the level of impact and the nature of the interaction.
- **Research and Development:** We conduct and support research to improve estimates of bycatch rates, better understand the impacts of bycatch on species interactions and community dynamics, modify fishing gear, and develop mitigation tools to minimize bycatch and its impacts.
- **Implement and Manage:** We work with partners to develop and implement domestic management measures and promote the adoption and implementation of international measures to address bycatch and its impacts.
- **Evaluate and Improve:** We evaluate the effectiveness of science and management programs to determine whether programs achieve stated goals and identify needed improvements.
- **Enforce:** We enforce fishery management measures and work with state, federal, and international partners to ensure compliance with all applicable laws.
- **Communicate:** We communicate within the Agency and to stakeholders to maximize the impact of bycatch reduction efforts.

# Goal of the Strategy

**The goal of this strategy is to guide and coordinate NOAA Fisheries' efforts under the MSA, MMPA, ESA, and other relevant mandates to reduce bycatch and bycatch mortality and to encourage utilization of discards to maintain sustainable fisheries while conserving and recovering protected species.**

The objectives and strategies presented here address multiple domestic and international program areas and are designed to align ongoing and future regional, national, and international bycatch related efforts with our overall goal to reduce bycatch and bycatch mortality and increase utilization of discards. National and regional action plans will be developed to identify specific actions that will advance this national strategy. Due to the varying nature of bycatch across regions, the objectives and strategies are meant to be adapted and customized in each action plan to address the unique needs of each region and program area. The development of action plans will engage partners and also involve stakeholders to identify creative solutions and help prioritize efforts to reduce bycatch.



## Bycatch Objectives and Strategies

***Objective:* Strengthen monitoring and data collection programs through cost-effective use of new and existing tools (e.g., observers, logbooks, and electronic technologies to collect bycatch data that inform agency bycatch priorities.**

Monitoring fisheries is crucial for assessing bycatch and bycatch mortality and measuring progress toward reducing bycatch and improving utilization of fish resources, and we seek to build on and improve our monitoring approaches. In addition to using existing tools (e.g., logbooks, observers, and electronic technologies), we are committed to developing and investing in new data collection techniques, as appropriate. The strategies outlined below will facilitate efforts to improve monitoring and data collection programs.

### ***Strategies***

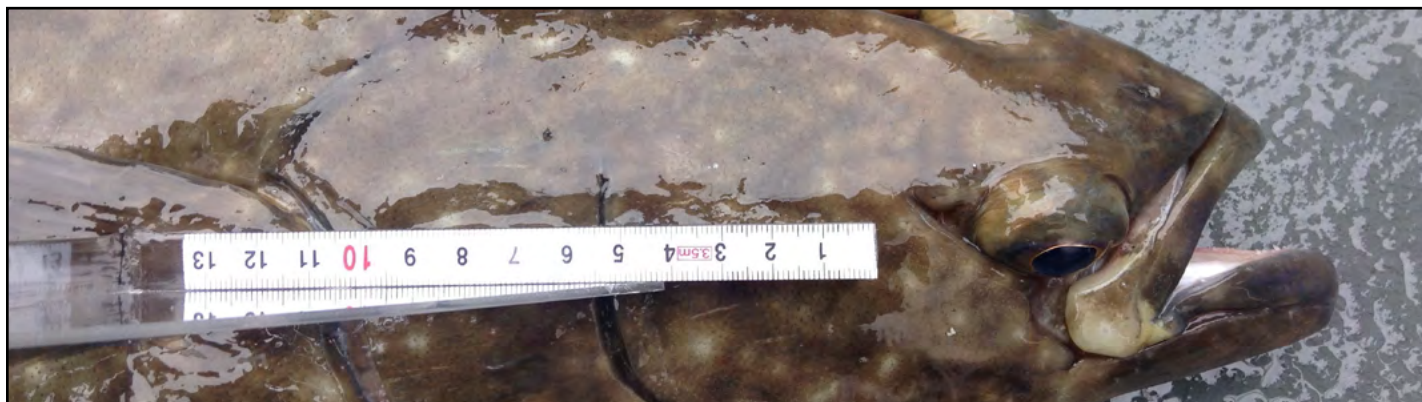
- a. Promote transparency and effectiveness of bycatch monitoring and data collection programs while maintaining confidentiality.
- b. Ensure that data collected are compiled, analyzed, and available for resource managers to characterize national and regional bycatch trends to better inform policy and management decisions.
- c. Improve the availability of information on monitoring program results and how those results are integrated into management decisions.
- d. Comprehensively evaluate bycatch data collection programs to identify data gaps, identify program improvements, and address new and existing priorities.
- e. Continue to foster and strengthen state, federal, and international partnerships to facilitate data sharing and collaboration.
- f. Provide guidance on collecting, recording, and reporting bycatch data.
- g. Support improved management of bycatch within regional fisheries management organizations and intergovernmental agreements, through improved data collection and compliance with data reporting requirements.

**Objective: Clarify bycatch research needs and support research programs to meet these needs.**

NOAA Fisheries has a long history of investing in bycatch research to address gaps in knowledge and data that can hinder finding innovative solutions. We will continue to work with the fishing industry, academic groups, environmental organizations, international partners, and others to better understand bycatch issues and to develop tools and technology to reduce bycatch. We are committed to supporting innovative research that addresses bycatch, whether it is through gear technology, bycatch avoidance programs, creative solutions to management challenges, or new evaluation techniques. The strategies outlined below will ensure that we prioritize research that addresses some of our most pressing bycatch research needs and challenges.

## **Strategies**

- a. Use existing program reviews and other means to identify regional research priorities that further bycatch reduction and research. Emphasis will be placed on balancing research investments in a) selective gear technology, b) economic research on the performance of regulatory and economic incentive-based bycatch reduction approaches, and c) long-term data collection and monitoring.
- b. Identify opportunities to strengthen regional conservation engineering programs and economic research through national-level coordination and collaboration.
- c. Provide guidance to external research partners about bycatch research priorities in grant solicitations, and identify mechanisms to communicate research results regarding NOAA Fisheries-funded programs.
- d. Align and coordinate available NOAA funding under the Bycatch Reduction Engineering Program, Saltonstall-Kennedy Grant Program, and the Cooperative Research Program to ensure bycatch research produces tools that are useful for management and enforcement purposes, and are likely to be successful when implemented.
- e. Track NOAA Fisheries-funded research as it transitions to management decisions to measure the success and applicability of science tools resulting from such research, and to modify those tools as needed.
- f. Encourage research that explores increased utilization of incidentally caught fish that would otherwise be discarded.
- g. Improve availability of information about NOAA Fisheries' research priorities for bycatch reduction to inform future research and management decisions.
- h. Develop and support relevant international partnerships to support NOAA Fisheries' research priorities.





**Objective: Improve discard and take estimates for use in commercial and recreational fishery management.**

Immediate and post-release mortality with fishing gear can impact rebuilding timelines of fisheries and the recovery of protected species, necessitating additional management measures to reduce bycatch, and limiting opportunities for fishermen to harvest target species. We are committed to finding new solutions to improve discard and take estimates, and related information to support effective fishery and protected species management. The strategies outlined below will improve the information available on the magnitude and impact of bycatch.

## **Strategies**

- a. Review and update as necessary existing guidance for estimating bycatch to ensure that it reflects the best scientific information available and encourages consideration of electronic technologies.
- b. Consider whether “best practices” can be developed and applied across managed fisheries and protected species to improve bycatch estimates as needed for fishery management. Promote best practices internationally, as appropriate.
- c. Improve methods to account for total catch (including discards) across all federal fisheries.
- d. Examine the use of bycatch estimates in stock assessments and document approaches for incorporating data that have high levels of uncertainty.
- e. Improve understanding of post-release mortality of fishery and protected species through the implementation of the Action Plan for Fish Release Mortality Science and current best practices for protected species, respectively.
- f. Improve availability of information on discard and take estimates to managers and the public.
- g. Strengthen approaches to assessing the impacts of bycatch on the ecosystem across multiple fisheries.



**Objective: Improve management measures designed to reduce bycatch, while strengthening understanding of the economic and social factors contributing to bycatch and the effectiveness of bycatch measures.**

Bycatch and bycatch mortality are threats to sustainable fisheries and the recovery and conservation of many protected species populations, can adversely affect marine ecosystems, and can have significant economic and social impacts on commercial and recreational fisheries. Managers should explore new management approaches to reduce bycatch in commercial and recreational fisheries, and consider benefits and costs of management alternatives to find the most effective solutions both domestically and internationally. Creating incentives for fishermen to more fully utilize their catch, when appropriate will require a strong understanding of the underlying economic drivers that shape fisheries. The strategies outlined below will guide these efforts.

## **Strategies**

- a. Work with partners, the fishing industry, and key stakeholders to develop, implement, understand, and promote effective and efficient bycatch reduction measures.
- b. Continue to support the development and implementation of species-specific bycatch reduction measures, conduct post-implementation analyses of the effectiveness of measures (e.g., circle hooks, TEDs, and “hot spot” area closures), and modify those measures as needed.
- c. Obtain a better understanding of the role of technological change and technology adoption in fisheries that can reduce bycatch.
- d. Support efforts to analyze the relative effectiveness of economic incentive-based approaches to bycatch reduction such as cap and trade programs, risk pools, and certification programs.
- e. Support efforts to encourage utilization of discards and support efforts to reduce regulatory discards.
- f. Improve availability of information for assessment of social and economic impacts of bycatch to better inform stakeholders and to support management decisions and post-regulation analyses.
- g. Develop best practices for working with states to identify management measures that will mitigate the bycatch of protected species.
- h. Ensure U.S. delegations advance bycatch reduction measures in international forums, such as the United Nations Fish Stock Agreement Review Conference, General Assembly, and Food and Agriculture Organization; regional fisheries management organizations; and multilateral environmental agreements.

**Objective: Strengthen the effectiveness of management measures through regular review and coordination with law enforcement.**

Enforceable management measures are critical to successfully reducing bycatch. We are committed to working with our enforcement partners and managers to ensure that enacted management measures are enforceable and trackable, including those that support the safety of observers. The strategies outlined below will help guide these efforts.

## **Strategies**

- a. Establish or strengthen feedback loops between councils, Marine Mammal Take Reduction Teams, and fisheries managers and enforcement personnel at regional, national, and international levels to identify trends, opportunities, and challenges regarding the “enforceability” of new and existing policies and regulations.
- b. Use joint enforcement agreements to ensure effective working relationships and data sharing between the NOAA Fisheries Office of Law Enforcement, states, and the U.S. Coast Guard, and where applicable, relevant foreign nations.
- c. Support observer safety through the robust enforcement of observer safety requirements and outreach to observers and the fishing industry. Ensure regulations consider and encompass strong compliance tools that limit impacts to observer safety, work environments, and work areas, and adopt stronger observer safety measures within regional fisheries management organizations.
- d. Support strong communications with observers at sea to promote timely enforcement response, observer program support, and data transmission.





**Objective: Improve communication within NOAA Fisheries and increase partner and stakeholder awareness, understanding, and engagement through open, two-way communication.**

Bycatch is a complex issue that crosses organizational, jurisdictional, and national lines. Effective communication and coordination will improve understanding of bycatch issues and opportunities to find creative solutions. We want to work collaboratively with partners and stakeholders to have a common understanding of bycatch, our efforts to address it, and lessons learned as well as identify opportunities for partnerships to further bycatch reduction. We will use the strategies outlined below to guide our efforts to ensure clear and effective communication about bycatch programs and efforts.

## **Strategies**

- a. Identify ways to more broadly and regularly disseminate observer data, while preserving confidential information, results from research and development projects, and share information on regulatory actions and other management actions across programs.
- b. Distinguish between protected species, fish, other types of bycatch and their respective conservation and management requirements.
- c. Improve the availability of information about regional and national bycatch trends in the context of fisheries and protected species conservation and management goals.
- d. Encourage an ecosystem-based approach to achieving species protection and recovery goals, and habitat protection.
- e. Work with partners to better align and balance our shared bycatch priorities and concerns.
- f. Develop communication strategies to promote awareness of bycatch and discard mortality issues among the recreational fishing community.
- g. Continue to foster relationships with international partners and stakeholders and actively engage within international forums to better understand and address bycatch concerns.

## **Next steps: National and Regional Action Plans**

This National Bycatch Reduction Strategy, consisting of six objectives and corresponding strategies, is a national framework for improving efforts to reduce bycatch. After finalizing this strategy, NOAA Fisheries will implement it through the development of national and regional action plans—in coordination with partners and stakeholders—to identify priority actions. The action plans will engage partners and stakeholders to identify creative solutions and help us prioritize efforts to reduce bycatch. While budgets and other operational factors will affect how each action plan is developed and implemented, these plans are expected to guide efforts across the agency to ensure a coordinated, transparent effort to achieve our goal of reducing bycatch.

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