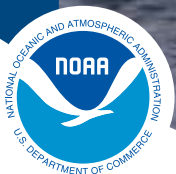


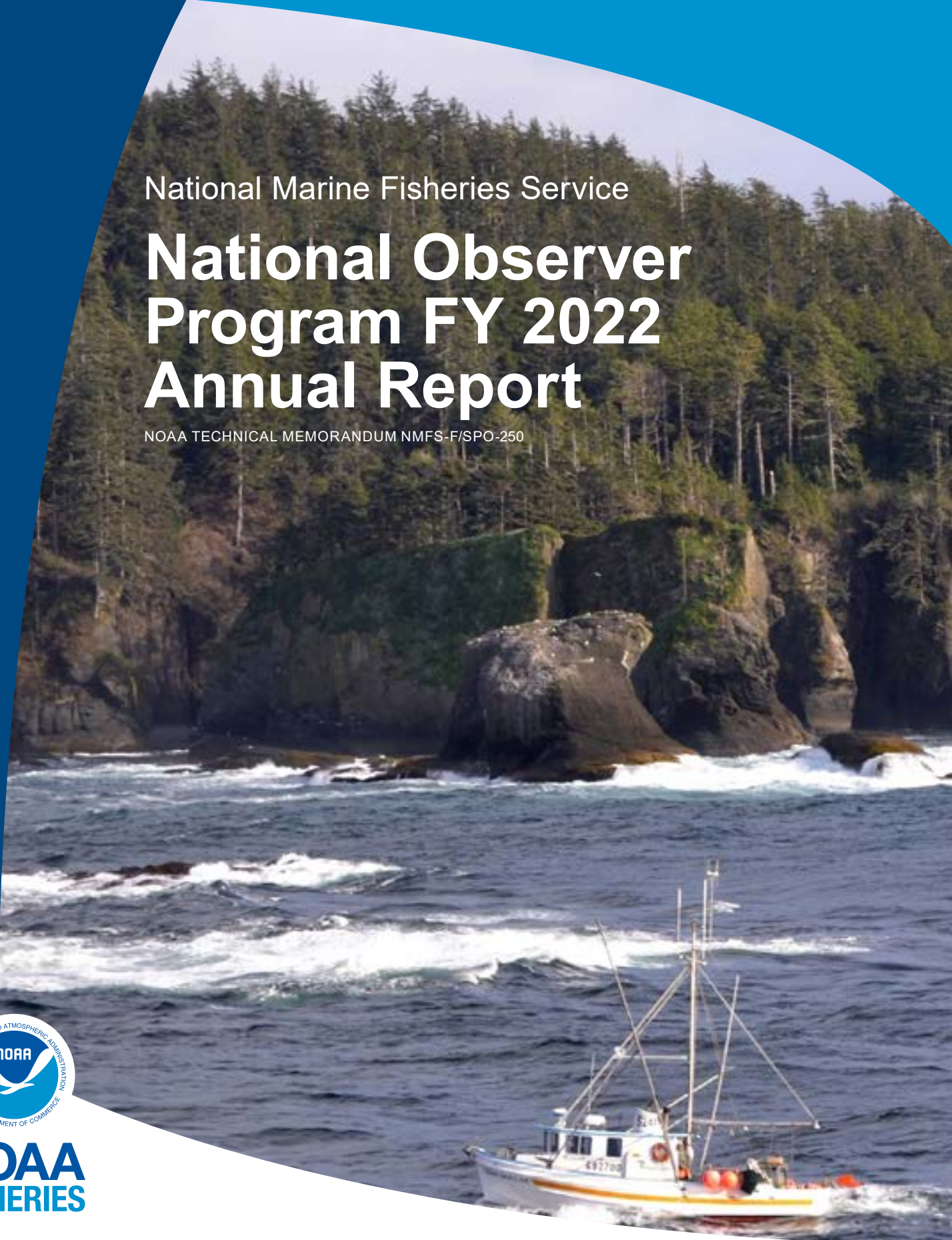
National Marine Fisheries Service

National Observer Program FY 2022 Annual Report

NOAA TECHNICAL MEMORANDUM NMFS-F/SPO-250



NOAA
FISHERIES



National Observer Program FY 2022 Annual Report

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National Marine Fisheries Service

NOAA Technical Memorandum NMFS-F/SPO-250

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Executive Summary

For FY 2022 (October 1, 2021–September 30, 2022), 933 observers provided 63,036 sea days of fishery observations, compared to 60,350 days of fishery observations in FY 2021. NOAA Fisheries, along with commercial fishing fleets in the Alaska, West Coast, and Greater Atlantic regions, invested a total of \$75.97 million to provide this coverage in 54 U.S. fisheries. Of this amount, congressionally appropriated funds provided \$55.10 million, and fishing industry expenditures related to monitoring totaled \$20.87 million.

Over the past few years, overall program funding has remained level or decreased, while numbers of observers and sea days have increased. The rising costs for at-sea monitoring programs, increasing monitoring demands, and level (at best) of funding have created challenges in monitoring previously unobserved fisheries or increasing current coverage levels to respond to fishery or protected resource management challenges.

The National Observer Program (NOP), in NOAA Fisheries' Office of Science and Technology, along with the National Observer Program Advisory Team, supported six regional observer programs in FY 2022. This support included coordination and guidance regarding program performance metrics, budgets, safety, recruitment and retention, and other important topics.

In addition to ensuring that skilled fishery observers are able to collect high-quality data, the regional observer programs also achieved the following during 2022:

- **Alaska**—Supported the development of Alaska pollock catcher vessel measures that would allow an EM system to supplement existing observer coverage with the goal of improving catch accounting for salmon, advancing cost-efficiency, and monitoring compliance with discard restrictions.
- **West Coast**—Continued to develop observer training videos focused on sampling techniques on different types of vessels, as well as test the Onboard Record Collection Application system.
- **Pacific Islands**—Almost doubled its coverage of the American Samoa pelagic longline deep-set fishery compared to that in 2021.
- **Greater Atlantic**— Developed a widely distributed website article describing how NOAA Fisheries is stepping up enforcement to ensure the safety of federal fisheries observers and at-sea monitors in the Northeast.
- **Southeast**—Enhanced observer coverage of the South Atlantic snapper-grouper fishery, with the goal of increasing the number of observed fishing days from 52 to 650 per year.

The preceding milestones represent only a fraction of observer activities in 2022. None of these achievements would be possible without the hard-working and talented fishery observers who work under challenging conditions to help NOAA Fisheries fulfill its mission to ensure sustainable fisheries.



1. Introduction

The National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries) deploys fishery observers to collect high-quality catch and bycatch data from U.S. commercial fishing and processing vessels, as well as from some shoreside processing plants. NOAA Fisheries has been using observers to collect fisheries data in the U.S. exclusive economic zone (EEZ) and high seas since 1972. Observers, trained biological technicians who collect data to support a wide range of conservation and management activities, have monitored fishing activities on all U.S. coasts, collecting data for a range of conservation and management issues.

NOAA Fisheries regional offices and science centers administer the various regional observer programs. Each observer program is authorized by one or more of the following federal authorities: the Magnuson-Stevens Fisheries Conservation and Management Act (MSA), the Marine Mammal Protection Act (MMPA), and the Endangered Species Act (ESA). (For more information on these federal mandates and U.S. observer program history in general, see Brooke 2014.)

1.1 Program Structure

Within the NOAA Fisheries Office of Science and Technology (ST), the National Observer Program (NOP) provides national support to six regional observer programs, each with at least a couple of sub-programs (Figure 1). In addition to national program administration, budget development, and planning, the NOP works with regional observer programs to develop national policy, standards for observer data quality, and training standards for observer and marine safety instructors. In 2022, the NOP had four permanent staff positions: program coordinator (Ken Keene), electronic technologies coordinator (Brett Alger), bycatch expert (Lee Benaka), and safety expert (Dennis Hansford).

Regional observer programs are responsible for day-to-day program operations, including providing administrative services, responding to data requests from a range of users, and working closely with third-party contracting companies that provide observers and address logistics and operational issues. Program scientists and managers determine the appropriate sampling protocols and necessary observer coverage

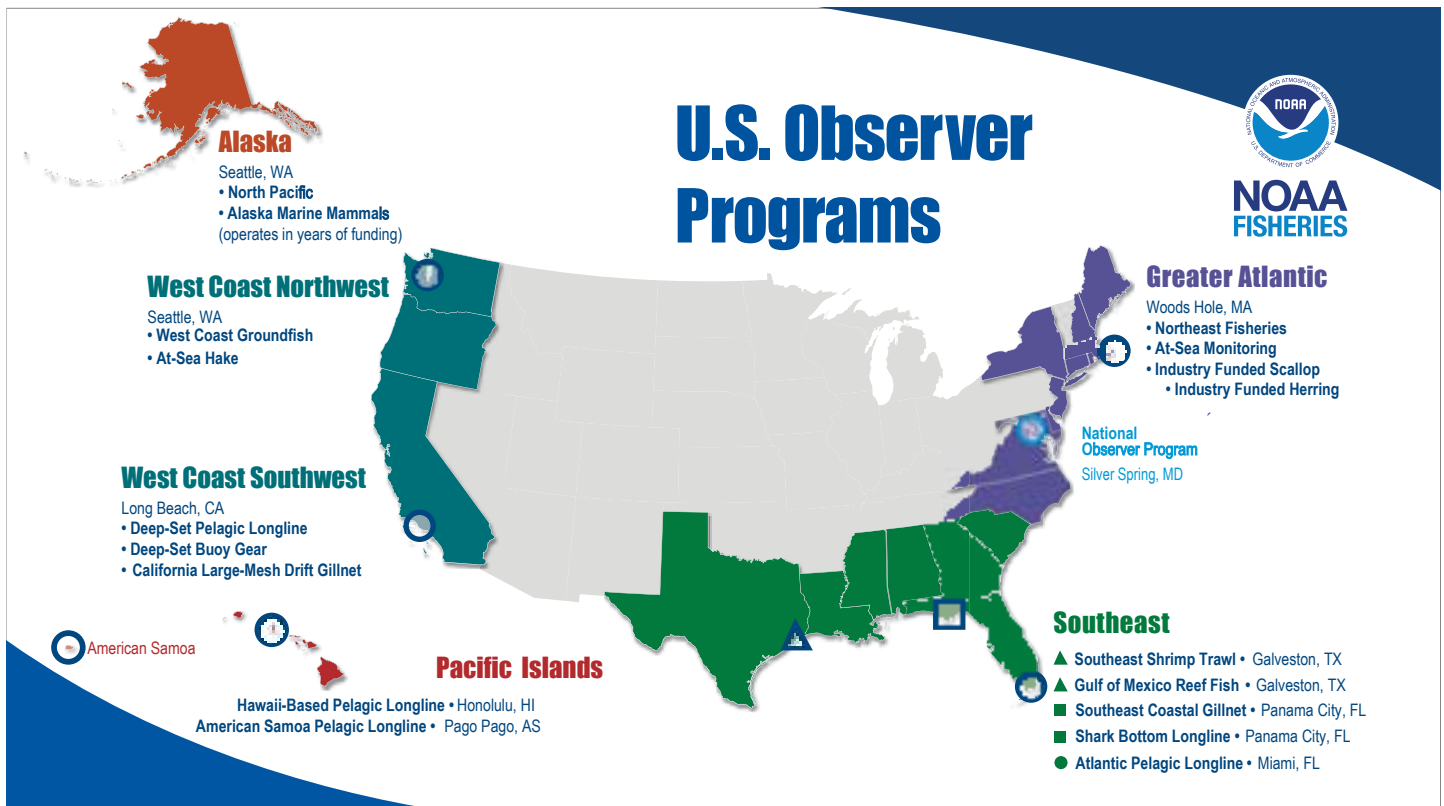


Figure 1: Map of regional observer programs.

levels for each fishery. In general, regional programs work with observer provider companies to recruit, train, and deploy observers.

The NOP provides regional observer programs with a forum to increase collaboration and communication during biannual meetings of the National Observer Program Advisory Team (NOPAT). Representatives from all regional fisheries science centers and regional offices, as well as many NOAA Fisheries Headquarters offices with observer expertise, participate on the NOPAT (Figure 2).

The FY 2022 budget included funds to pay for most regional observer program costs for the fisheries currently observed. NOAA Fisheries has authority to require the fishing industry to support observer coverage costs. Thus, in some cases, the fishing industry pays for the costs of observer coverage by contracting directly with private observer provider companies to obtain the required coverage. The full (100 percent) coverage fisheries managed by the Alaska Observer Program, for example, are funded primarily by the fishing industry, which pays observer salaries, travel costs, and insurance. NOAA Fisheries covers onshore infrastructure costs. Alternately, the partial coverage fleet in Alaska is paid by an ex-vessel fee established in federal regulations. NOAA Fisheries’ Alaska Fisheries Science Center administers this program, contracts

with an observer provider company, and receives the data for near real-time management of the groundfish fishery. These data are also made available to industry members. Industry funding also supports the West Coast Trawl Catch Share Program and the Atlantic Sea Scallop Fishery.

Regardless of an observer program’s funding, NOAA Fisheries provides all observers with training in sampling techniques and species identification, data collection, fishing and safety regulations, and at-sea survival skills. NOAA Fisheries is responsible for ensuring data quality through what is known as debriefing. This quality-control process involves data and sampling process review, as well as discussions with the observers themselves, before observer data are used to help fulfill agency science and management objectives.

1.2 Use of Observer Data in Fisheries Management

The information compiled by observer programs supports the management of fisheries and conservation of fish stocks, protected species, and ecosystems throughout the United States (Figure 3). Observer data are also increasingly relied on to monitor compliance with fisheries regulations. Information collected by

NOAA Fisheries Headquarters		Office of Science and Technology	Office of Sustainable Fisheries	Office of Protected Resources	Office of Law Enforcement	
Regional Offices	Alaska	Greater Atlantic	Pacific Islands	Southeast	West Coast	
Science Centers	Alaska	Northeast	Northwest	Pacific Islands	Southeast	Southwest
General Counsel for Fisheries	General Counsel for Enforcement and Litigation		Workplace Violence Prevention and Response Program	U.S. Coast Guard (liaison)		

Figure 2: Entitles with representation on the NOPAT.

fisheries observers supports a wide range of assessment and monitoring activities, including the following examples:

- For each managed fishery or stock, the MSA requires development of an annual catch limit (ACL) that is set below the overfishing level to ensure that overfishing will not occur. Setting an ACL for a stock requires scientific data on catch and bycatch, which has resulted in increased observer days at sea across the country.
- Catch share programs rely on observer data to monitor catch, landings, and discards. Specifically, managers and fishermen rely

on observer data to ensure that vessels and sectors do not exceed the authorized quota of target or discard species.

- Scientists and managers use estimates of the rates of fishing mortality or protected species interaction based on observer data for developing stock assessments. Biological samples collected by observers are also essential to stock assessments. For example, NOAA Fisheries scientists use genetic data for species or stock identification purposes.
- The MMPA requires that levels of fishery-related mortality and serious injury of marine mammals be monitored by observers and reported in annual marine mammal stock assessment reports. NOAA Fisheries scientists and managers also use these data to classify commercial fisheries according to their levels of incidental mortality and serious injury of marine mammals in the annual MMPA List of Fisheries (16 U.S.C. 1387).
- The fishing industry uses observer data for innovative bycatch avoidance programs, such as salmon bycatch monitoring in Alaska.
- Under ESA Section 7 biological opinions, observer programs may be required or recommended to ensure that anticipated take levels of threatened or endangered species (e.g., sea turtles and Atlantic sturgeon) are not exceeded in federal fisheries.

Multiple observer programs cover federal and state waters in every region of the country. These programs process and manage data and biological samples collected by observers during commercial fishing trips.

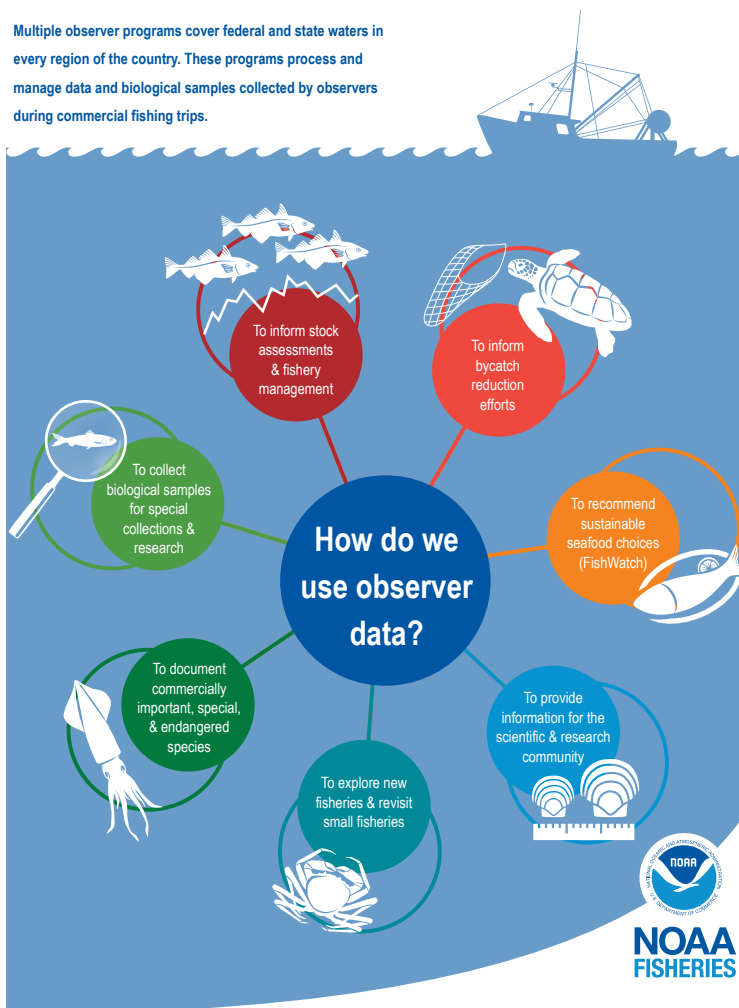


Figure 3: Uses of observer data.

1.3 Funding History for Observer Programs

NOAA Fisheries created the NOP in 1999 to improve regional and national coordination among the observer programs. Before 1999, the majority of funding for regional observer programs was provided through indirect sources such as congressional allocations supporting fisheries management and protected species conservation and recovery, or by industry. Industry funding has increased over time as mandatory coverage requirements have increased.

In 1999, the first congressional funds were directly appropriated to specific regional observer program budgets or Program, Project, and Activity (PPA) lines, and the NOP was established to coordinate observer program activities. The number of observers, sea days, and observed fisheries have gradually increased as available funding provided the means to develop observer programs for new or experimental fisheries while maintaining established monitoring programs (Figure 4). Although numbers of observers and sea days decreased due to waiver of observer coverage in some U.S. fisheries in 2020, those numbers rebounded as NOAA Fisheries discontinued waivers and observer programs reinstated or increased coverage. Expenditures remained steady due to the increased expenses of providing hybrid training to observers and paying for additional COVID-19 safety measures. Overall program funding has remained level or decreased in recent years, while numbers of observers

and sea days have increased. The rising costs for at-sea monitoring programs, increasing monitoring demands, and level (at best) funding have created challenges in monitoring previously unobserved fisheries or increasing current coverage levels to respond to fishery or protected resource management challenges.

For FY 2022 (October 1, 2021–September 30, 2022), 933 observers provided 63,036 sea days of fishery observations, compared to 60,350 days of fishery observations in FY 2021. NOAA Fisheries, along with commercial fishing fleets in the Alaska, West Coast, and Greater Atlantic regions, invested a total of \$75.97 million to provide this coverage in 54 U.S. fisheries. Of this amount, congressionally appropriated funds provided \$55.10 million, and fishing industry expenditures related to monitoring totaled \$20.87 million.

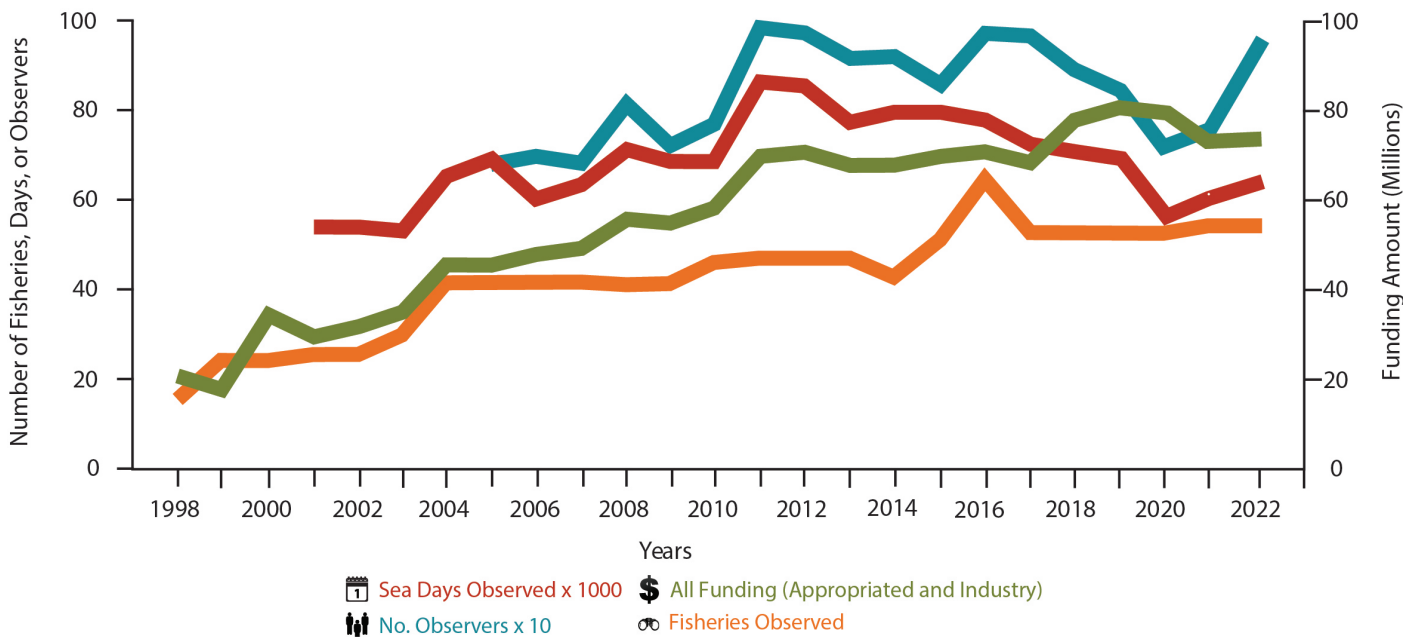


Figure 4: U.S. observer program sea days observed, appropriated and industry funding (not adjusted for inflation), and number of observed fisheries and observers from 1998 to 2022.

2. Budget Summary

The tables in Appendix A provide regional details on numbers of observers, sea days covered, observer coverage targets, and expenditures for observer coverage. Appendix B lists the 54 fisheries covered in FY 2022. Industry expenditures supported observer coverage of fishing vessels in North Pacific and West Coast groundfish fisheries as well as Greater Atlantic scallop fisheries. (For more information regarding industry expenditures related to monitoring of West Coast fisheries, see Steiner et al. 2021, as well as the NOAA Fisheries Northwest Fisheries Science Center’s FISHEyE economic data visualization tool.¹)

NOAA Fisheries Regional Offices and Science Centers manage the regional observer programs. NOAA Fisheries uses program funding to support program infrastructure (including observer training and debriefing), support data analysis, and conduct outreach to industry members and the public. Observer coverage levels are determined by the regional programs and are influenced by available funding, the number of active participants in the fishery, fishing conditions, fishery quotas, management needs, and program goals. Sections 4 through 8 of this report summarize the FY 2022 achievements of NOAA Fisheries regional observer programs.

Table 1: FY 2022 Observer Funding Summary (in millions).²

Region	Appropriated	Industry	Industry Fee and/or Cost Recovery	Total
Alaska	\$8.99	\$11.47	\$5.00	\$25.46
Greater Atlantic	\$21.16	\$1.41	\$0	\$22.57
Pacific Islands	\$9.56	\$0	\$0	\$9.56
Southeast	\$5.65	\$0	\$0	\$5.65
West Coast ³	\$8.88	\$2.99	\$0	\$11.87
NOAA Fisheries HQ	\$0.86	\$0	\$0	\$0.86
Totals	\$55.10	\$15.87	\$5.00	\$75.97

¹Available at: <https://noaa-fisheries-integrated-toolbox.github.io/fisheye>

²Appropriated amounts shown include funds allocated to regions from FY 2022 enacted funding.

³West Coast encompasses two separate observer programs administered by the NOAA Fisheries Northwest Fisheries Science Center and West Coast Regional Office.

3. National Office Program Activities

Several NOAA Fisheries headquarters offices play important roles in observer programs. These offices include the Office of Science and Technology, which is home to the NOP, as well as the Office of Protected Resources (OPR), the Office of Law Enforcement (OLE), and the Office of Sustainable Fisheries, which houses the Atlantic Highly Migratory Species Management Division (HMS). The following sections describe NOP, OPR, and OLE activities in 2022. Section 8 of this report describes HMS-related activities for 2022.

3.1 National Observer Program

In addition to coordinating policy and budget issues among the regional observer programs, the NOP facilitated and coordinated several activities that were national in scope in 2022. The following subsections describe these activities.

3.1.1 National Observer Program Advisory Team

The NOPAT met twice virtually in 2022, in May and October. At these meetings, the NOPAT discussed various topics including the observer program budget, policies and standards, safety and enforcement issues, performance metrics, and electronic technologies.

3.1.2 Safety Advisory Committee

The NOPAT has a Safety Advisory Committee (SAC) that comprises safety representatives from each regional observer program, the NOAA Fisheries Office of Law Enforcement, and the U.S. Coast Guard. The SAC provides recommendations to the NOPAT on safety and health issues. Committee members met virtually numerous times during FY 2022 (October 2021 and March, April, June, and July 2022) to discuss a variety of issues including:

- The ability of observer trainees and current observers to meet physical requirements
- Observer incident reporting procedures
- Training standards related to sexual assault and sexual harassment

- Possible updates to a 2004 memorandum of agreement on observer safety between NOAA Fisheries and the U.S. Coast Guard
- Planning for an August 2022 Marine Safety Instructor Training refresher course in Seattle

3.1.3 Observer Program and Provider Insurance Rulemaking

On September 7, 2022, NOAA Fisheries published a final rule (87 FR 54902) to establish a nationally consistent minimum insurance standard that would apply in regional regulatory programs that authorize an observer provider to deploy a person in any observer program and that specify the responsibilities of authorized providers. The rule was designed to clarify the types of insurance that are appropriate to address the financial risks that observer coverage presents in any federally managed fishery subject to observer coverage.

3.1.4 Electronic Technologies

NOAA Fisheries and its observer programs continued to promote and support electronic technologies (ET), including electronic monitoring (EM) and electronic reporting (ER), during FY 2022. Approximately 535 U.S. fishing vessels participated in electronic monitoring programs at the end of FY 2022. Figure 5 describes the status of U.S. EM programs by region.

In May 2022, NOAA Fisheries published a procedural directive providing guidance on applying information law to electronic monitoring data.⁴ In particular, the directive provided guidance on how to manage raw EM data in different types of EM programs in light of confidentiality provisions of the MSA, the Freedom of Information Act, and the Federal Records Act. The directive also included guidance on using web portals for conducting video reviews as well as clarity on what NOAA Fisheries can require EM service providers to collect (e.g., protected species bycatch) and how NOAA Fisheries may use raw EM data once they become federal records.

⁴ Policy on Electronic Technologies and Fishery-Dependent Data Collection. Available at https://media.fisheries.noaa.gov/2022-05/04-115-04_0.pdf

NOAA Fisheries supported seven internal EM projects in Alaska, the Southeast, the Pacific Islands, and the Northeast for a total of approximately \$2.4 million in FY 2022. These projects focused on, among other things:

- Incorporating EM and shoreside sampling into a North Pacific monitoring program
- Transmitting fisheries-dependent data in a pre-implementation EM program in Alaska
- Applying low-cost location loggers in the West Coast Dungeness crab fishery
- Assessing protected species interactions while developing a regulatory framework for EM implementation in the Pacific Islands region

- Applying machine learning and EM in Gulf of Mexico commercial fisheries

In addition, NOAA Fisheries supported eight internal ER projects in the Southeast, Northwest, Northeast, and Pacific Islands for a total of approximately \$1.5 million in FY 2022. These projects focused on, among other things, implementing:

- Electronic vessel trip reporting in the Federal American lobster fishery
- Electronic quota monitoring reporting in North Carolina
- Electronic reporting in U.S. Pacific Islands fisheries

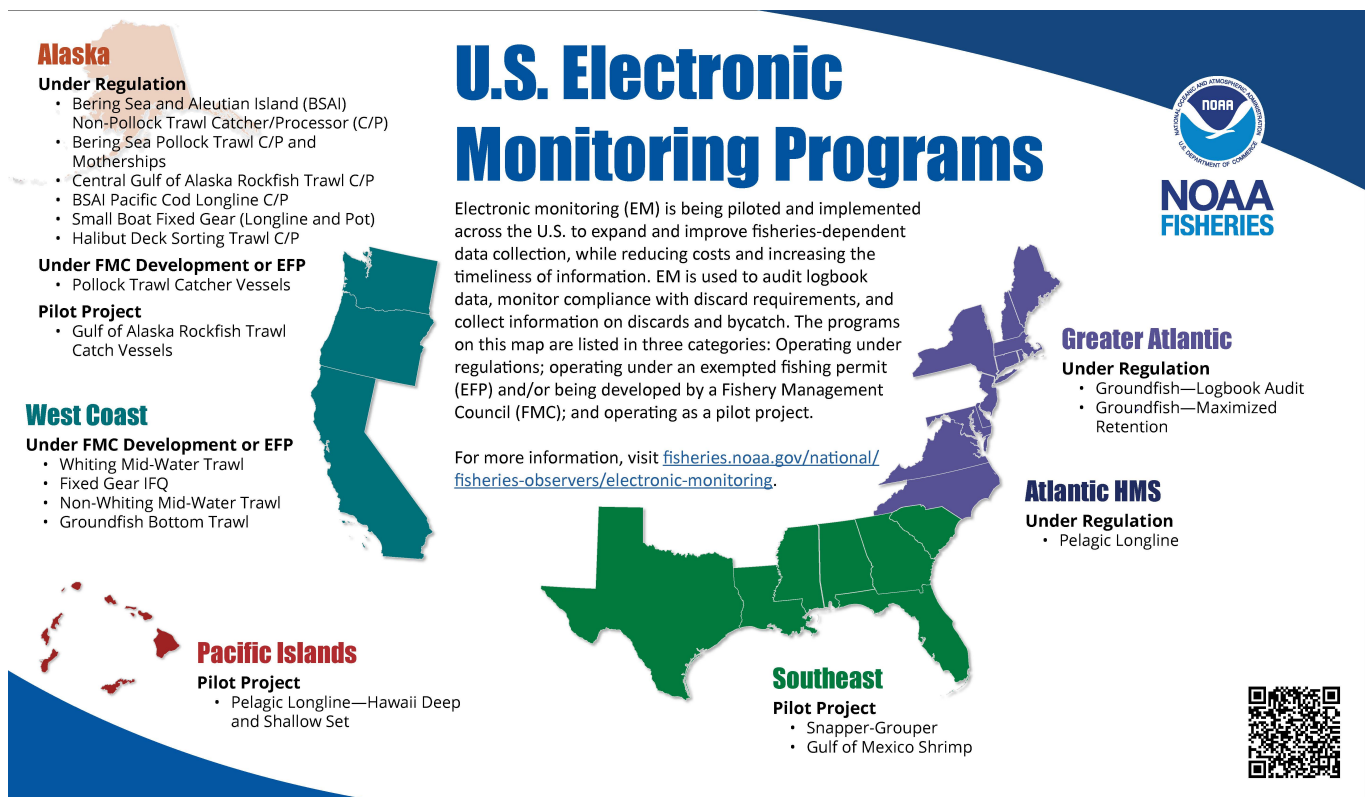


Figure 5: U.S. EM programs by region as of 2022.

NOAA Fisheries, the National Fish and Wildlife Foundation (NFWF), and the Shell Oil Company also funded 12 projects totaling \$3.7M through the Electronic Monitoring and Reporting Grant Program. The program focused on (1) testing and deploying ET in fishery data collection and (2) modernizing data management systems in numerous fisheries including:

- Alaska halibut and sablefish
- Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA) pelagic pollock trawl catch vessels
- GOA rockfish trawl
- Gulf of Mexico reef fish
- Gulf of Mexico recreational for-hire
- Atlantic and Gulf of Mexico highly migratory species (HMS)
- New England groundfish

The NFWF webpage features a fact sheet with additional information about these projects.⁵

3.2 National Seabird Program

The National Observer Program continued to support NOAA Fisheries' National Seabird Program (NSP) in FY 2022 through limited financial support to the NSP for observer-program-related seabird projects (Table 2). This support came from budget lines entitled Atlantic Coast Observers and Reducing Bycatch-Observers. Staff members from the NOP also worked with the NSP to begin to implement the NSP five-year strategic plan (Ballance et al. 2019).

3.3 Office of Protected Resources

The Office of Protected Resources (OPR) undertakes a variety of activities to support observer programs and fishery-dependent monitoring efforts. In March 2022, OPR finalized a procedural directive on post-interaction mortality of sea turtles in non-longline fisheries.⁶

Table 2: National Seabird Program internal award recipients, FY 2022.

NOAA Fisheries Center or Office	Project Name	Amount (\$)
Alaska Fisheries Science Center	Continuing Implementation of the Pacific Seabird Bycatch Necropsy Program	30,000
Southeast Fisheries Science Center	Examining U.S Atlantic pelagic longline fleet vessel characteristics in relation to seabird bycatch hotspots	15,515
Pacific Islands Regional Office	Tori line distribution for the Hawaii deep-set longline fishery	15,000
Alaska Fisheries Science Center	Translating beached seabird survey data to Ecosystem Status Report visualization products	15,000
Alaska Fisheries Science Center	Seabird training for Alaska groundfish observers	15,000
Northwest Fisheries Science Center	Common murre diet from the Yaquina Head Outstanding Natural Area, Oregon	4,720
Total		95,235

⁵ National Marine Fisheries Service Procedure 02-110-21. Available at https://media.fisheries.noaa.gov/2022-03/02-110-21_renewal_March%202022_kdr_0.pdf

⁶ National Marine Fisheries Service Procedure 02-110-21. Available at https://media.fisheries.noaa.gov/2022-03/02-110-21_renewal_March%202022_kdr_0.pdf

The directive established national consistency for incorporating post-interaction mortality into ESA Section 7 consultations for fisheries that incidentally capture sea turtles. The directive also defined the process by which post-interaction mortality is determined from information collected by observers and other sources.

In September 2022, OPR published the 2023 Annual Determination (AD) (87 FR 54948) proposed rule to implement sea turtle observer requirements under the ESA. Through the AD, NOAA Fisheries identifies U.S. fisheries operating in the Atlantic Ocean, Gulf of Mexico, and Pacific Ocean that will be required to take observers upon NOAA Fisheries' request. The purpose of observing identified fisheries is to learn more about sea turtle bycatch in a given fishery, evaluate measures to prevent or reduce sea turtle bycatch, and implement the prohibition against sea turtle takes. The rule proposed to add the Mid-Atlantic gillnet and Gulf of Mexico menhaden purse seine fisheries to the 2023 AD because these fisheries were scheduled to be removed from the AD at the end of 2022 (see Table 3).

In April 2022, OPR published the final List of Fisheries (LOF) for 2022 (87 FR 23122), as required by the MMPA. NOAA Fisheries annually must classify each commercial fishery on the LOF into one of three categories under the MMPA based on the level of mortality and serious injury that occurs incidental to each fishery, with Category I representing frequent mortality or serious injury, Category II occasional, and Category III none or remote likelihood. The classification of a

fishery on the LOF determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as observer coverage and take reduction plan requirements.

The final rule for 2022 reclassified the Category II Bering Sea, Aleutian Islands rockfish trawl fishery to a Category III fishery due to no observed mortalities or serious injuries of marine mammals. The final rule also added three new fisheries:

1. The California Tanner crab pot fishery as a Category III fishery
2. The California/Oregon/Washington non-albacore HMS hook and line fishery as a Category III fishery
3. The Massachusetts mixed species trap/pot fishery as a Category II fishery

The 2022 LOF also made a number of changes to the species and/or stocks incidentally killed or injured, updated the number of participants in many fisheries, and renamed several fisheries.

In September 2022, OPR published the proposed List of Fisheries (LOF) for 2023 (87 FR 55348), which proposed to reclassify the Category III Hawaii offshore pen culture fishery to Category II based on a documented monk seal mortality in 2017. The rule also proposed to make changes to the estimated number of vessels and participants in particular fisheries, as well as the species and/or stocks killed or injured in certain fisheries.

Table 3: Annual Determination fisheries listed in the 2022 AD.

Fishery	Years Eligible to Carry Observers
Trawl Fisheries	
Southeastern U.S. Atlantic, Gulf of Mexico shrimp trawl	2020–2025
Gulf of Mexico mixed species fish trawl	2020–2025
Gillnet Fisheries	
Mid-Atlantic gillnet	2018–2022
Chesapeake Bay inshore gillnet	2020–2025
Long Island inshore gillnet	2020–2025
Pound Net/Weir/Seine Fisheries	
Gulf of Mexico menhaden purse seine	2018–2022

4. Alaska Program Activities

In 2022, The North Pacific Observer Program (Observer Program) deployed 375 observers for a total of 29,169 full coverage sea days and 3,328 partial coverage sea days across 5,256 fishing trips. The following sections provide an overview of programmatic activities for the Observer Program in 2022. For more details on the Observer Program's 2022 activities, see the Observer Program's 2022 draft Annual Report (AFSC and ARO 2023). In addition, Appendix A includes additional information on Observer Program coverage levels.

The Observer Program has two components: full coverage and partial coverage. For the full-coverage component, which covers the majority of Alaska's groundfish harvest, one or two observers monitor every fishing trip. For the partial-coverage component, the Annual Deployment Plan (ADP) describes the scientific deployment design for observers and the portion of trips that are to be sampled by observers and EM. In December 2021, NOAA Fisheries released the ADP for 2022 (NMFS 2021).

More specifically, The Fisheries Monitoring and Analysis (FMA) Division of the Alaska Fisheries Science Center (AFSC) administers four monitoring programs in the federal groundfish and halibut fisheries off Alaska:

- Full-Coverage North Pacific Observer Program
- Partial-Coverage North Pacific Observer Program
- Fixed-Gear EM Program
- EM Innovation Project

4.1 Regulatory Updates

During 2022, the FMA collaborated with the fishing industry and the Alaska Regional Office (AKRO) to analyze management measures under consideration by the North Pacific Fishery Management Council (Council) that would apply exclusively to pollock CVs using pelagic trawl gear and tender vessels in the

Observer Program. The measures under consideration included alternatives that would allow an EM system to supplement existing observer coverage with the goal of improving catch accounting for salmon, advancing cost-efficiency, and monitoring compliance with discard restrictions. The Council considered a draft environmental assessment and regulatory impact review analyzing these measures beginning in May 2022. As these management measures were developed and considered in 2022, fishing continued under an exempted fishing permit (EFP) to evaluate the efficacy of EM and shoreside observers for the pollock CV vessels, again with a focus on compliance monitoring of maximized retention. Overall, 80 vessels participated in the EFP in 2022 from both the partial and full coverage categories.

The FMA also monitored Council progress in modifying observer requirements on catcher-processor pot vessels. These modifications would provide options for these vessels to carry scales and other tools to allow observers to collect better data on challenging sampling platforms.

4.2 Safety and Training

Deploying observers in Alaskan fisheries continued to be challenging in 2022 not only due to observer shortages (see next section), but also due to the lingering COVID-19 pandemic constraints within various fishing companies, vessels, and plants. During the 2022 fishing year, the FMA trained, briefed, and equipped individual observers for deployment to vessels and processing facilities operating in the BSAI and GOA groundfish and halibut fisheries. To limit the potential for COVID-19 transmissions, the FMA continued to hold all briefings and specialized trainings virtually and limited in-person interactions solely to the last week of the three-week trainings and the marine safety training for returning observers. In 2022, FMA reinstated the "in-water" safety refresher for experienced observers. The in-water exercises were supposed to resume

in 2021, but that was delayed until the FMA could conduct the exercises with COVID safety protocols.

4.3 Observer Recruitment and Retention

Observer provider companies indicated difficulty with recruiting observer trainees in 2022, which related in part to the general labor market (i.e., a high level of job openings) in the United States during 2022. Potential observer trainees experienced increasing challenges in using dichotomous keys, that is, a scientific tool used to identify and categorize different organisms or objects based on a series of choices that lead the user to the correct name or classification. Observer providers have asked the FMA to provide more leeway regarding requirements that trainees show proficiency with these tools, but the observer providers have not requested a regulatory change to eliminate this requirement. In general, the FMA meets with observer providers once or twice a year to discuss recruitment and retention of observers and other matters.

4.4 Electronic Monitoring

The timeliness of EM video review was impacted in 2022 due to staffing shortages and challenges in

backfilling multiple positions. There was also a 27% increase in fixed-gear datasets in 2022 compared to that in 2021, which made it more difficult to catch-up with review. In addition, other EM programs/EFPs also expanded and competed for the limited video review resources. Once video review data are available from fixed-gear EM vessels, NOAA Fisheries can incorporate the data into its Catch Accounting System.

4.5 Alaska Marine Mammal Observer Program

At the May 2022 NOPAT meeting, NOPAT representatives from OPR and the AFSC provided an overview of the status of the Alaska Marine Mammal Observer Program (AMMOP). The presentation discussed coverage, data, and bycatch estimation options. The presentation also described funding that had been secured for a project manager position and database development, as well as an overall lack of funding support for AMMOP sea days as of 2022.



5. West Coast Program Activities

On October 1, 2014 (beginning of FY2015) the NOAA Fisheries Southwest Regional Office and Northwest Regional Office merged to become the West Coast Regional Office. Section 5.1 describes the observer program based at the Northwest Fisheries Science Center (NWFSC), and Section 5.2 describes the observer program based at the West Coast Regional Office that covers fisheries occurring for the most part off the Southwestern United States. Appendix A includes additional information about the coverage levels for these fisheries.

5.1 Northwest

The NWFSC's Fisheries Observation Science Program (FOS Program) is composed of the At-Sea Hake Observer Program (A-SHOP) and the West Coast Groundfish Observer Program (WCGOP). The A-SHOP observes the hake fleets that process catch at sea, while the WCGOP observes a number of fleets that deliver catch shoreside for processing, including sectors that target and incidentally impact groundfish. The WCGOP specifically focuses on at-sea discard estimates, and the level of WCGOP observer coverage and sampling can vary greatly between fisheries, years, and spatial strata. For more information on FOS Program coverage rates during 2022, see Somers et al. 2023. The WCGOP and A-SHOP deployed 174 observers for a total of 5,796 days in 2021.

During FY 2022, the FOS Program conducted five WCGOP training classes, training 73 new observers. The FOS Program also conducted four A-SHOP training classes, training 55 new observers. The FOS Program conducted most of its trainings virtually due to NOAA Fisheries facility access and occupancy restrictions. Both programs transitioned to in-person trainings, with additional COVID-19 safety mitigation measures. Despite these measures, COVID-19 disrupted two training sessions in FY 2021, but the FOS Program minimized those disruptions by shifting training to a virtual environment for a few days. Observers

occasionally tested positive for COVID-19 and had to be isolated and kept from deployment. However, these positive tests did not disrupt observer programs as much as they did in previous years.

The FOS Program worked to finalize an observer training video focused on longline vessels in 2022. This video builds on other training videos focusing on trawl vessels,⁷ shrimp vessels,⁸ and observer life in general.⁹

Observer data collected through the FOS Program supported numerous published peer-reviewed papers, NOAA Fisheries Technical Memoranda, and NOAA Data Reports published in 2022. Papers covered topics including marine mammal bycatch (Jannot et al. 2022a), Pacific halibut bycatch (Jannot et al. 2022b), and salmon bycatch fisheries (Richerson et al. 2022) in U.S. West Coast fisheries.

5.2 Southwest

The West Coast Regional Observer Program (WCROP) deployed 10 observers for 377 sea days in 2022. NOAA Fisheries' Southwest Fisheries Science Center (SWFSC) uses observer data to estimate incidental take of marine mammals in preparation of the annual Stock Assessment Reports and to document bycatch of sea turtles, seabirds, and target and non-target fish species.

Several observers left the WCROP in 2022, necessitating the training of several new observers in June 2022. Observers in the WCROP provided coverage for several small fisheries including the California large-mesh drift gillnet fishery, California-based deep-set pelagic longline fishery, and the deep-set buoy gear exempted fishing permit fishery.

During 2022, deep-set buoy gear observers tested the Onboard Record Collection Application (ORCA) project. With the ORCA system, observers input data directly into a rugged, waterproof Android tablet at sea, replacing the previous paper-based system. ORCA provides drop-down options that enable observers to

⁷ Observing on a Trawl Vessel. Available at <https://bcove.video/3pyyhJw>

⁸ Observing on a Shrimp Trawler. Available at <https://bcove.video/3x9fzJP>

⁹ Observer Life. Available at <https://bcove.video/3fSe3F5>

move faster through the data-entering sequence and minimize questions to the crew. For example, once an observer selects a vessel or species name, ORCA automatically inserts the accompanying permit number or species code into the electronic form. In addition,

the tablet's built-in cameras save the observers from having to reach for another device to take a picture of incidental catch or bycatch species for later review and identification.



6. Pacific Islands Program Activities

The Pacific Islands Regional Observer Program (PIROP) supports observer coverage in three fisheries with the following observer coverage targets:

- Hawaii pelagic longline shallow-set fishery targeting swordfish (100% coverage target)
- Hawaii pelagic longline deep-set fishery targeting bigeye and yellowfin tuna (20% coverage target or at least 15% coverage quarterly)
- American Samoa pelagic longline deep-set fishery targeting albacore tuna (20% coverage recommendation)

In 2022, the PIROP deployed 67 observers for 8,583 sea days total, compared to 7,892 sea days in 2021.

The PIROP's high coverage targets require substantial resources to support observers who may stay at sea for extended periods (e.g., up to 85 days in duration for American Samoa trips) and travel long distances. The PIROP met its targets for the Hawaii pelagic longline fisheries in 2022. However, due to continuing COVID-19 travel restrictions to American Samoa, the American Samoa pelagic longline fishery fell short of its coverage target for 2022 with a 9% coverage rate, which was almost double its coverage rate in 2021. Over the last 10 years, fishing effort in the American Samoa longline fishery has declined. Appendix A includes additional information about coverage levels for these fisheries.

The PIROP conducted two training classes during FY 2022. Two days of the three-week training classes were in-person, with the remaining days conducted virtually. In addition, the PIROP conducted refresher safety classes twice during FY 2022, with the hands-on sections of the class conducted in person. Despite reduced COVID-19 levels in Hawaii, the PIROP is still conducting the majority of debriefings via video conference or over the phone. However, the PIROP requires new observers returning from their first trip

to debrief in-person at the PIROP offices. The PIROP continued to experience high observer retention rates in 2022, although recruitment of new observers was challenging in 2022.

In April 2022, NOAA Fisheries published a final rule (87 FR 25153) prohibiting the use of wire leaders¹⁰ in the Hawaii deep-set longline. The rule also required the removal of fishing gear from any oceanic whitetip shark caught in the region's domestic longline fisheries. NOAA Fisheries published the rule in order to increase post-hooking survival of threatened oceanic whitetip sharks. In conjunction with the rulemaking, the PIROP created a new form to collect additional hooking and handling methods for ESA-listed elasmobranchs. This form will also capture data that will aid in the analysis of the efficacy of switching from wire leaders to monofilament nylon leaders to increase shark survivability.

PIROP staff in American Samoa have provided support to observers placed on purse seine vessels regulated by the Western and Central Pacific Fisheries Commission (WCPFC). The WCPFC continued a suspension of its observer coverage requirements in 2022 due to COVID-19 but planned to resume coverage in 2023.

In 2022, the PIROP continued to collaborate with the WCROP, the Pacific States Marine Fisheries Commission, and the Pacific Fisheries Information Network to refine ORCA. In particular, the PIROP hired an ORCA business analyst using internal grant funds to help the PIROP transition from paper-based manuals to eReporting. Because the WCROP and PIROP overlap in jurisdiction and responsibility to monitor and report on highly migratory species fisheries in the Pacific Ocean, this project combined lessons learned from previous projects from the West Coast and Pacific Islands Regions to develop and implement electronic reporting into a single cross-regional reporting system that will benefit both programs.

¹⁰ In pelagic longline fishing, leaders are short lengths of fishing line that attach the rest of the fishing line to the baited hook; they help prevent fish from cutting through the line and make the fishing gear safer for fishermen.

7. Greater Atlantic Program Activities

The Fishery Monitoring and Research Division (FMRD) at NOAA Fisheries' Northeast Fisheries Science Center (NEFSC) oversees observer programs in the Greater Atlantic Region. The FMRD coordinates three different observer programs:

1. The Northeast Fisheries Observer Program (NEFOP) is the longest-standing program and provided coverage for 3,191 observer days in 2022.
2. The Industry-Funded Scallop (IFS) Observer Program provided coverage for 2,065 observer days in 2022.
3. The At-Sea Monitoring (ASM) Program for groundfish provides supplemental monitoring for groundfish sector catch accounting; its deployments totaled 5,886 observer days in 2022.

Appendix A includes additional information on coverage levels for these programs.

The FMRD also administered 215 sea days of observer coverage focusing on protected species interactions with fisheries. The 11,357 sea days covered in FY 2022 is a substantial increase over the 7,740 sea days covered in FY 2021.

Overall, these three programs deployed 228 unique observers in 2022. This was an increase over the 121 unique observers deployed in 2021, in part due to new flexibilities as COVID-19 restrictions decreased in 2022.

The FMRD observes more than 60 fleets in the Greater Atlantic (Maine through North Carolina), including fleets using trawl, gillnet, hook-and-line, dredge, and pot gear. Annually, the NEFSC determines the number of sea days required to assess the amount and type of bycatch in the Greater Atlantic region as required by the Standardized Bycatch Reporting Methodology (SBRM) Omnibus Amendment for all Council-developed regional FMPs (NEFMC et al. 2015). For

more information on the sea day process for 2022, see NEFSC 2022. Greater Atlantic fisheries experience less than 100% observer coverage, and individual fishing vessels may have coverage ranging from 5% to 50% in a given year. The FMRD tries to meet an assortment of observer coverage targets each year. The FMRD meets or exceeds some targets, but other targets can be challenging due to several factors including fishing vessel non-compliance, complex coverage exemptions, and observer retention challenges.

7.1 Regulatory Updates

In January 2022, NOAA Fisheries published a final rule to implement Amendment 21 to the Atlantic Sea Scallop Fishery Management Plan (FMP) (87 FR 1688). Amendment 21 expanded the IFS Observer Program to the Northern Gulf of Maine (NGOM) Management Area. The rule also specified that a portion of the NGOM quota allocation should help offset monitoring costs.

In February 2022, NOAA Fisheries published a proposed rule to implement Amendment 23 to the Northeast Multispecies FMP (87 FR 11014). Amendment 23 proposed to improve the reliability and accountability of catch reporting in the commercial groundfish fishery by establishing a high monitoring coverage target for groundfish trips. The FMRD continued during 2022 to adapt its procedures to prepare for a large influx of ASM data after the implementation of Amendment 23. NOAA Fisheries created a website that features additional information regarding Amendment 23.¹¹

7.2 Training and Retention, Data Quality, and Safety

During FY 2022, the FMRD lifted most COVID-19 restrictions for its training programs and resumed on-site instruction with full classes (a maximum of 20 students for new-observer trainings). The FMRD continued to offer some remote training options and required students to be tested for COVID-19 prior

¹¹ <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/northeast-groundfish-monitoring-program>

to on-site training. The FMRD's training schedule was extensive, with training activity taking place 19 of the 26 weeks between December 2021 and May 2022. Training of at-sea monitors, conducted by the Coonamessett Farm Foundation (CFF), based in East Falmouth, Massachusetts, consisted of approximately nine classes during FY 2022. Observer attrition continued to be a challenge in FY 2022, as the FMRD and CFF trained 59 new observers or monitors between November 2021 and May 2022 but lost 36 observers during the same timeframe. Similarly, the FMRD and CFF trained 66 new observers or monitors between June and October 2022, with 9 of those trainees not completing training or certification trips and 33 observers overall exiting the program during the same timeframe.

The FMRD was able to address a data backlog that had begun in 2021 due to a high number of debriefer attritions and new observers. The FMRD implemented an "optimized review process" designed to redistribute the data review effort and increase efficiency. By the end of FY 2022, the FMRD was only two months behind its typical data-review schedule, as opposed to being six months behind schedule in 2021.

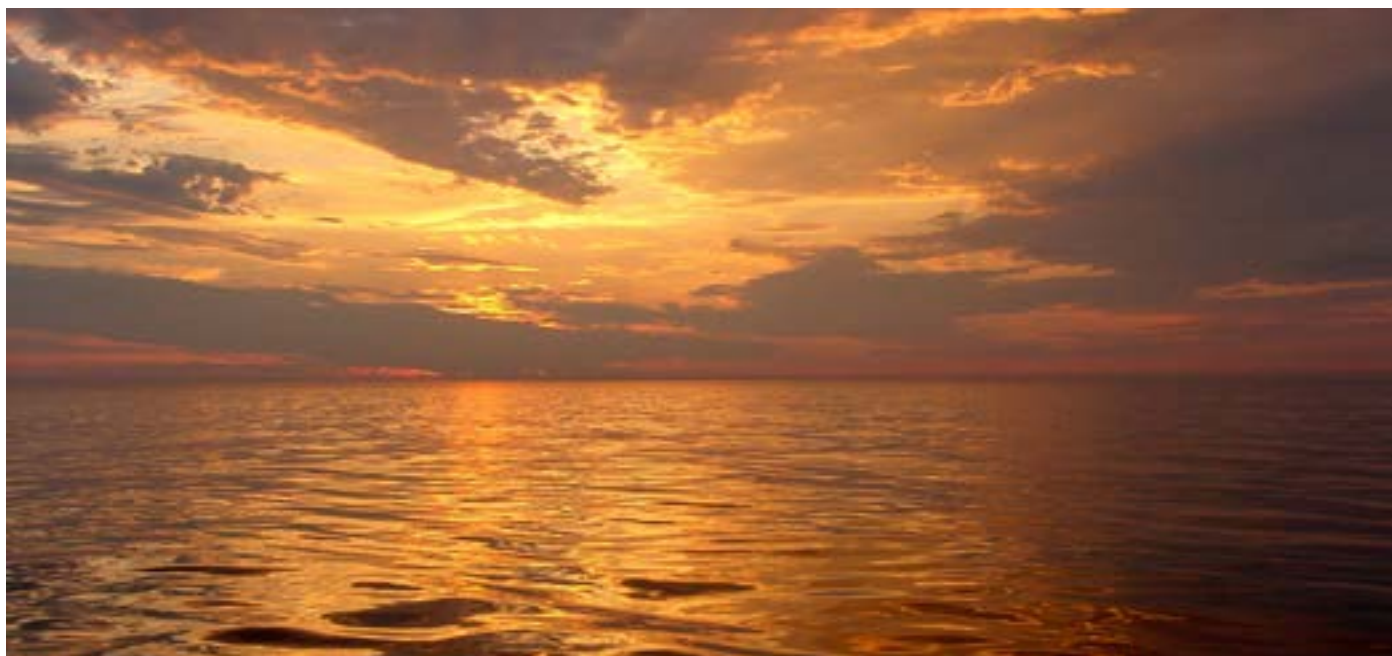
The FMRD was able to ensure that all observers were current with its safety recertification standards in 2022. In addition, the FMRD worked with U.S. Coast Guard (USCG) vessel examiners to ensure vessels carrying observers have current USCG safety decals. The

FMRD also conducted outreach efforts to fishermen in North Carolina in August 2022 and in the New York area in September 2022.

In order to reduce incidents of observer harassment, the FMRD implemented a post-deployment questionnaire to ask observers about their treatment during each trip. The FMRD supported the development of a widely distributed March 2022 NOAA Fisheries website article describing how NOAA Fisheries is stepping up enforcement to ensure the safety of federal fisheries observers and at-sea monitors in the Northeast. In addition, the FMRD incorporated sexual assault and sexual harassment training into the conflict resolution section of its observer curriculum.

7.3 Electronic Technologies

The FMRD's various programs continued to implement electronic reporting technologies, with the NEFOP collecting data equally on paper and electronically, the ASM Program utilizing near-paperless data collection, and portside samplers working in a fully paperless environment. By the end of FY 2022, 39 vessels in the multispecies groundfish fishery utilized EM in place of observers to monitor bycatch under either an audit or maximized retention model. Cameras run for 100% of the time on these vessels, and reviewers examine 50% (or less depending on a vessel's EM experience) of the video footage.



8. Southeast Program Activities

The Southeast Fisheries Observer Program (Observer Program) observed 4,426 sea days in 2022, as compared to 3,688 sea days in 2021, with 79 observers. The program observed six fisheries in 2021:

- Gulf of Mexico and South Atlantic shrimp trawl
- Highly migratory species (HMS) pelagic longline
- Gulf of Mexico reef fish
- South Atlantic reef fish
- Southeast gillnet
- Shark research fishery

Appendix A includes additional information about coverage levels for these fisheries.

The Observer Program resumed in-person observer training classes in April 2022, with training classes occurring in Galveston, Texas; Panama City, Florida; and Miami, Florida. Observer attrition was a challenge for the Observer Program, with roughly one observer leaving the program for every two observers trained. A competitive job market and a lack of in-person observer training in 2021 may have contributed to these retention issues.

In 2022, NOAA Fisheries announced that it was increasing observer coverage of the South Atlantic snapper-grouper fishery beginning in July. This expansion of observer coverage included all gear types rather than only vertical line gear, which was the only gear type with observer coverage previously. Specifically, the coverage increase aimed to increase the number of fishing days with an observer in the fishery from 52 to 650, an increase of observer coverage to 2.75% of overall fishing effort. NOAA Fisheries expected that the number of vessels selected for coverage would increase from an average of 92 vessels per year to 400 vessels per year. In addition, NOAA Fisheries expected that the increased observer coverage would lead to better decisions about populations and their abundance,

with the observer data used to verify coastal logbook catch rates, counts of discarded fish, measurements of discarded fish, and the catch per unit effort for the commercial sector.

The Observer Program addressed a problem related to vessel costs reimbursement for observer meals. The Observer Program had traditionally paid vessels taking observers \$25 per sea day to help with the cost of food for the observer. However, these payments ended in 2017. In 2022, the Observer Program restarted the payments and took steps to make back payments to vessels. This challenge created some difficulties in covering some shrimp trawl trips.

During 2022, the NOAA Fisheries Atlantic HMS Management Division developed a final rule to implement Amendment 13 to the 2006 Consolidated HMS Fishery Management Plan. The final rule, published in October 2022 (87 FR 59966), modified regulations regarding the EM program in the HMS pelagic longline fishery. In particular, these modifications pertained to, among other things:

- Timeframes for mailing EM system hard drives after trip completion
- Mounting and installation of video cameras to obtain optimal views
- Responsibility for costs of installation of booms that support better camera views of fishing activity
- Requirements for specific fish handling procedures and installation/placement of a measuring grid on deck, in view of one of the cameras

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APPENDIX A: NMFS Fisheries Observer Programs Funded in FY 2022 by Region

ALASKA FY 2022

Fisheries Observed	Fleet Size	Authority to Place Observers	Season of Operation	Funding Source	Program Duration	Target Coverage	Actual Coverage	Target Sea Days	Actual Sea Days*	Number of Observers
North Pacific Groundfish Observer Program, Alaska Fisheries Science Center, 7600 Sand Point Way NE, Seattle, WA 98115										
Program Manager: Jennifer Ferdinand, jennifer.ferdinand@noaa.gov, website: https://www.fisheries.noaa.gov/alaska/fisheries-observers/north-pacific-observer-program										
Bering Sea and Aleutian Islands (BSAI) Groundfish Trawl Catcher Vessel - Voluntary Full Coverage Category; BSAI and Gulf of Alaska (GOA) Catcher Processors 3Development Quota (CDQ) - Pollock MS and C/P; CDQ - Groundfish Catcher Vessels (See Note); Central GOA Rockfish Catcher Vessels; Bering Sea Pollock Inshore Processors	1,314 vessels (163 in 100% coverage)	MSFCMA (50 CFR 679.50)	Year-round.	Observers & Training-North Pacific Marine Resource Observers/ North Pacific Observer Program ¹	1973–present (Observer program); 1998–present (AFA); 2007–present (Amendment 80, CDQ); 2013–present (RP)	100%	99.8%	Defined by regulation	29,169 (2,561 sampled trips)	375
				National Observer Program ¹						
				Reducing Bycatch						
				Other Congressional Funding						
				Industry Funding						

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Fisheries Observed	Fleet Size	Authority to Place Observers	Season of Operation	Funding Source	Program Duration	Target Coverage	Actual Coverage	Target Sea Days	Actual Sea Days*	Number of Observers
North Pacific Groundfish Observer Program, Alaska Fisheries Science Center, 7600 Sand Point Way NE, Seattle, WA 98115										
Program Manager: Jennifer Ferdinand, jennifer.ferdinand@noaa.gov, website: https://www.fisheries.noaa.gov/alaska/fisheries-observers/north-pacific-observer-program										
BSAI and GOA Groundfish and Pacific Halibut Fishery Partial Coverage Category: 3 Gear Based Strata; Electronic Monitoring (EM) Stratum; Trawl EM Exempted Fishing Permit (EFP); and EM Innovation Stratum	1,314 vessels (163 in 100% coverage)	MSFCMA (50 CFR 679.50)	Year-round.	Observers & Training-North Pacific Marine ¹ Resource Observers/ North Pacific Observer Program ¹	2013–present	Trawl Gear Stratum: 29.7%	Trawl Gear Stratum: 29.0%	Defined by available funds and contracts with observer providers in Annual Deployment Plan	3,328 (2,695 sampled trips)	375
				National Observer Program ¹		Hook and Line Stratum: 19.0%	Hook and Line Stratum: 14.6%			
				Reducing Bycatch		Pot Gear Stratum: 17.5%	Pot Gear Stratum: 18.1%			
				Other Congressional Funding		Shoreside Sampling for EM-American Fisheries Act (AFS)	Shoreside Sampling for EM-AFA EFP: 100%			
				Industry Funding		Trawl Exempted Fishing Permit (EFP): 100%	Shoreside Sampling for EM Partial Coverage Trawl EFP: 30.4%			
						EM Hook and Line Gear: 32.5%	EM Hook and Line Gear: 35.8%			
						EM Pot Gear: 30%	EM AFA Trawl EFP: 100%			
						EM AFA Trawl EFP: 100%	EM Partial Coverage Trawl EFP: 100%			
						EM Partial Coverage Trawl EFP: 100%	EM Partial Coverage Trawl EFP: 100%			
TOTAL ALASKA REGION OBSERVER PROGRAM FUNDING (CONGRESSIONAL): \$8,994,916										
TOTAL ALASKA REGION INDUSTRY EXPENDITURES: \$16,474,092 (includes \$11,469,305 in industry expenditures for full coverage, \$4,313,661 in NOAA Fisheries expenditures of North Pacific Observer Fund fee for partial coverage observers and EM, and \$691,126 in cost recovery revenue)										
TOTAL ALASKA REGION OBSERVER PROGRAM FUNDING (ALL SOURCES): \$25,469,008										

¹Portion of budget line used to support management activities.

*The Alaska Region Observer Program does not deploy observers by sea day, but rather by trip. The number of sampled trips are included in parentheses after the rough sea day equivalent.

WEST COAST FY 2022

Fisheries Observed	Fleet Size	Authority to Place Observers	Season of Operation	Funding Source	Program Duration	Target Coverage	Actual Coverage	Target Sea Days	Actual Sea Days	Number of Observers
West Coast Region Observer Program, West Coast Regional Office, 501 West Ocean Blvd, Long Beach, CA 90802-4213										
Program Manager: Charles Villafana, charles.villafana@noaa.gov, website: http://www.westcoast.fisheries.noaa.gov/fisheries/wc_observer_programs/sw_observer_program_info/observer_program_sw_fish.html										
California Large-Mesh Drift Gillnet Fishery	7 vessels	MMPA (50 CFR 229), MSFCMA (50 CFR 660)	August–January, May	National Observer Program	1990–present	20%	19.1%	40	40	10
Deep Set Buoy Gear Exempted Fishing Permit (EFP)	30 vessels	MSFCMA (50 CFR 660)	June–December	National Observer Program	2017–present	10-100%	36.0%	200	161	
California Deep-Set Pelagic Longline Fishery	3 vessels	MSFCMA (50 CFR 660)	January–December	Reducing Bycatch	2001–present	20%	24.0%	175	176	
West Coast Groundfish Observer Program (WCGOP), Northwest Fisheries Science Center, 2725 Montlake Blvd East, Seattle, WA 98112-2097										
Program Manager: Jon McVeigh, jon.mcveigh@noaa.gov, website: https://www.fisheries.noaa.gov/west-coast/fisheries-observers/west-coast-groundfish-trawl-catch-share-observer-program										
West Coast Trawl Catch Shares (shoreside and at-sea fleets)	140 vessels*	MSFCMA (50 CFR 660)	Shoreside: year-round; at-sea May–December	National Catch Share Program	Jan 2011–present (Note: Includes historical fisheries Limited Entry Trawl 2001–2010 and At-Sea Hake 1975–2010)	100%	At-Sea: 100%	Defined by regulation (100% coverage, shoreside 1 observer; at-sea 2 observers or EM)	Shoreside :2,050	118
Catch Share using Electronic Monitoring (EM)		EM administered under an Exempted Fishing Permit in FY 2020		West Coast Observers			Industry Funding		National Observer Program	
				Cost Recovery			EM: 100%	Scientific observer coverage: 23%	EM: 3,921	

Fisheries Observed	Fleet Size	Authority to Place Observers	Season of Operation	Funding Source	Program Duration	Target Coverage	Actual Coverage	Target Sea Days	Actual Sea Days	Number of Observers
West Coast Groundfish Non-Catch Share Fisheries (Limited Entry Fixed Gear, Open Access fisheries including state-managed fisheries)	Limited Entry: 190 longline, 33 trap permits; Open Access: approx. 1,000	MSFCMA (50 CFR 660)	Year-round	Cost Recovery National Observer Program West Coast Observers Reducing Bycatch	2001–present	Limited Entry: 40%, Open Access: 1–10%	Limited Entry: 41%, Open Access: 1–10%	Target coverage rate based on % of landings observed, not sea days	LE: 378 OA: 1,141	56
TOTAL WEST COAST REGION OBSERVER PROGRAM FUNDING (CONGRESSIONAL): \$8,875,067 (\$1,343,829 of which funds the West Coast Region Observer Program (previous page))										
TOTAL WEST COAST REGION INDUSTRY EXPENDITURES: \$2,989,704**										
TOTAL WEST COAST REGION OBSERVER PROGRAM FUNDING (ALL SOURCES): \$11,864,771										

* This number reflects the number of vessel permits in this fishery; however, the number of vessels that actually fished in 2022 is likely smaller.

** This amount includes industry observer, shoreside catch monitor, and electronic monitoring costs. Catch monitor costs can be charged to the vessel or the processor and include coverage for electronic monitoring trips. For more information regarding industry expenditures related to monitoring of West Coast fisheries, see Steiner et al. 2021, as well as the NOAA Fisheries Northwest Fisheries Science Center’s FISHEyE economic data visualization tool (<https://noaa-fisheries-integrated-toolbox.github.io/fisheye>).

PACIFIC ISLANDS FY 2022

Fisheries Observed	Fleet Size	Authority to Place Observers	Season of Operation	Funding Source	Program Duration	Target Coverage	Actual Coverage	Target Sea Days	Actual Sea Days	Number of Observers
Pacific Islands Region Observer Program, Pacific Islands Regional Office, IRC, 1845 Wasp Blvd., Bldg. 176, Honolulu, HI 96818										
Program Managers: Lesley Hawn, lesley.hawn@noaa.gov, and Richard Kupfer, richard.kupfer@noaa.gov, website: https://www.fisheries.noaa.gov/pacific-islands/pacific-islands-region-observer-program										
Hawaii Pelagic Longline Fishery	150 vessels	MSFCMA (50 CFR 665), MMPA (50 CFR 229)	Year-round	Observers & Training-Hawaii Longline Observers, Reducing Bycatch, Hawaiian Sea Turtles, Fisheries Research Management, Fisheries Statistics	1994–present	20% Tuna	20% Tuna	N/A	6,911	67
						100% swordfish	100% swordfish	N/A	1,528	
American Samoa Pelagic Longline fishery	11 vessels	MSFCMA (50 CFR 665) in Jan 2005	Year-round	National Observer Program	2005–present	20%	9%	N/A	144	
Program support for the Western and Central Pacific Fisheries Commission	N/A	N/A	Year-round	Reducing Bycatch	2005–present	N/A	N/A	N/A	N/A	N/A
Support for PIRO Observer Data Dissemination/ Access Activities	N/A	N/A	Year-round	National Observer Program	2007–present	N/A	N/A	N/A	N/A	N/A
TOTAL PACIFIC ISLANDS REGION OBSERVER PROGRAM FUNDING (CONGRESSIONAL): \$9,560.667*										
TOTAL PACIFIC ISLANDS REGION INDUSTRY EXPENDITURES: \$0										
TOTAL PACIFIC ISLANDS REGION OBSERVER PROGRAM FUNDING (ALL SOURCES): \$9,560.667*										

*This number includes \$207,860 provided to the NOAA Fisheries Pacific Islands Fisheries Science Center for data analysis and bycatch estimation support.

GREATER ATLANTIC FY 2022

Fisheries Observed	Fleet Size	Authority to Place Observers	Season of Operation	Funding Source	Program Duration	Target Coverage	Actual Coverage	Target Sea Days	Actual Sea Days	Number of Observers
Northeast Fisheries Observer Program (NEFOP), Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543-1097										
Program Manager: Katherine McArdle, katherine.mcardle@noaa.gov, website: http://www.nefsc.noaa.gov/femad/fsb/										
New England (NE) Multispecies Groundfish Sectors At-Sea Monitoring (ASM)	115 NE Groundfish ASM vessels, 168 NE Groundfish SBRM vessels	MSFCMA (50 CFR 648); MMPA (50 CFR 229)	Year-round	National Observer Program	2010–present	80% NEFOP and ASM combined coverage May 1–April 30 (as set by the	63%	N/A (ASM) 751 (NEFOP)	5,886 (ASM) 585 (NEFOP)	155 (ASM)
				National Catch Share Program (ASM/Electronic Monitoring)						36 (NEFOP)
New England Multispecies Groundfish Sectors				Reducing Bycatch	1990–present					
SBRM prioritized fleets (non-groundfish)	2,377 vessels	MMPA (50 CFR 229); MSFCMA (50 CFR 648)	Year-round	Atlantic Coast Observers	2001–present	30% coefficient of variation on bycatch species (SBRM)	N/A	2,361	2,606	45
				Reducing Bycatch	2010–present		N/A			
Protected Species NEFOP Coverage	167 vessels	MMPA (50 CFR 229)	Year-round	Marine Mammal Observers	1994–present	30% coefficient of variation on critical marine mammal stocks	N/A	175	215	42
Atlantic Sea Scallop Fishery (Dredge and Trawl; General Category and Access Area Permits; Open and Access Areas)	505 vessels	MSFCMA (50 CFR 648)	Year-round	Industry Funding	1999–present	6.7%	5.3%	N/A	2,065	44
					1999–present					
TOTAL GREATER ATLANTIC REGION OBSERVER PROGRAM FUNDING (CONGRESSIONAL): \$20,138,874										
TOTAL GREATER ATLANTIC REGION INDUSTRY EXPENDITURES: \$1,412,071										
TOTAL GREATER ATLANTIC REGION OBSERVER PROGRAM FUNDING (ALL SOURCES): \$21,550,945										

SOUTHEAST and CARIBBEAN FY 2022

Fisheries Observed	Fleet Size	Authority to Place Observers	Season of Operation	Funding Source	Program Duration	Target Coverage	Actual Coverage	Target Sea Days	Actual Sea Days	Number of Observers
Southeast Shrimp Fishery Observer Program, Southeast Fisheries Science Center, Galveston Laboratory, 4700 Avenue U, Galveston, TX 77551										
Program Manager: Scott Leach, scott.leach@noaa.gov , website: https://www.fisheries.noaa.gov/southeast/fisheries-observers/gulf-mexico-reef-fish-and-shrimp-observer-program										
Southeastern Atlantic and Gulf of Mexico Shrimp Otter Trawl Fisheries (including rock shrimp), Skimmer Trawl	~1,700 vessels	Voluntary through July 2007; Mandatory– July 2007 MSFCMA (50 CFR 622)	Year-round	Observers & Training-South Atlantic and Gulf Shrimp Observers Observers & Training-Atlantic Coast Observers	1992–present	~2%	~2%	1,500 + Special Projects	2,104	49 (also deployed in reef fish fishery)
Atlantic Pelagic Longline Observer Program, Southeast Fisheries Science Center, 75 Virginia Beach Drive, Miami, FL 33149-1003										
Program Manager: Scott Leach, scott.leach@noaa.gov , website: https://www.fisheries.noaa.gov/southeast/fisheries-observers/southeast-pelagic-observer-program										
Atlantic, Gulf of Mexico, Caribbean Pelagic Longline Fishery	~70 vessels	MSFCMA (50 CFR 635); MMPA (50 CFR 229); ATCA	Year-round	Observers & Training-Atlantic Coast Observers Observers & Training-East Coast Observers Deepwater Horizon Sea Turtle Early Restoration	1992–present	8% by vessel sets	10.5%	NA	714*	15

SOUTHEAST and CARIBBEAN FY 2022

Fisheries Observed	Fleet Size	Authority to Place Observers	Season of Operation	Funding Source	Program Duration	Target Coverage	Actual Coverage	Target Sea Days	Actual Sea Days	Number of Observers
Southeast Gillnet and Shark Bottom Longline Observer Program, Southeast Fisheries Science Center, Panama City Laboratory, 3500 Delwood Beach Rd, Panama City, FL 32408										
Program Manager: Scott Leach, scott.leach@noaa.gov , websites: https://www.fisheries.noaa.gov/southeast/fisheries-observers/southeast-gillnet-observer-program https://www.fisheries.noaa.gov/southeast/fisheries-observers/southeast-shark-bottom-longline-observer-program										
Southeast Shark and Coastal Teleost Gillnet Fishery	55 vessels	MMPA (50 CFR 229); MSFCMA (50 CFR 635)	Year-round	Observers & Training-Atlantic Coast Observers	1998–present	5%	4.8%	112	77	12
South Atlantic Reef Fish Fishery	600 vessels	MSFCMA (50 CFR 635)	Year-round	ACCSP, MARFIN, National Observer Program	2014, 2017–2018, 2021–present	~1%	~3%	150	568	17
Shark Research Fishery	4 vessels	MSFCMA (50 CFR 635)	Year-round-open until quota is filled	National Observer Program	2007–present	100%	100%	N/A	37	7
Gulf of Mexico Reef Fish Fishery Observer Program, Southeast Fisheries Science Center, Galveston Laboratory, 4700 Avenue U, Galveston, TX 77551										
Program Manager: Scott Leach, scott.leach@noaa.gov , website: https://www.fisheries.noaa.gov/southeast/fisheries-observers/gulf-mexico-reef-fish-and-shrimp-observer-program										
Gulf of Mexico Reef Fish Fishery-all gear types	456 vessels	Mandatory	Year-round	Reducing Bycatch National Observer Program	2006–present	~1%	1.9%	NA	656	49 (also deployed in shrimp fishery)
TOTAL SOUTHEAST REGION OBSERVER PROGRAM FUNDING (CONGRESSIONAL): \$5,650,129										
TOTAL SOUTHEAST REGION INDUSTRY EXPENDITURES: \$0										
TOTAL SOUTHEAST REGION OBSERVER PROGRAM FUNDING (ALL SOURCES): \$5,650,129										

*This number of sea days does not include 270 additional sea days provided to monitor the Oceanic Fish Restoration Project, funded through the Deepwater Horizon Early Restoration Plan; for more information about this project, see <https://www.gulfspillrestoration.noaa.gov/project?id=58>

OFFICE of SCIENCE & TECHNOLOGY FY 2022

Fisheries Observed	Funding Source	Program Duration	Program Description
Science & Technology	Reducing Bycatch	1999–present	National Seabird Program support for observer program-related projects.
	Atlantic Coast Observers		National Seabird Program support for observer program-related projects.
	National Observer Program		Program staff salary and travel, and support for the Safety Advisory Committee, Knauss Marine Policy Fellow, International Fishery Observer and Monitoring Conference, and communications contract.
TOTAL SCIENCE AND TECHNOLOGY PROGRAM FUNDING (APPROPRIATED): \$750,000			
TOTAL SCIENCE AND TECHNOLOGY PROGRAM FUNDING (INDUSTRY): \$0			
TOTAL SCIENCE AND TECHNOLOGY PROGRAM FUNDING (ALL SOURCES): \$750,000			
TOTALS – ALL OBSERVER PROGRAMS			
OBSERVER PROGRAM FUNDING (APPROPRIATED)*: \$55,099,219			
OBSERVER PROGRAM FUNDING (INDUSTRY): \$20,875,867			
OBSERVER PROGRAM FUNDING (ALL SOURCES): \$75,975,086			
ACTUAL NUMBER OF SEA DAYS OBSERVED**: 63,036			
NUMBER OF OBSERVERS***: 933			

*Appropriated funds include \$50.0 from the Observers and Training PPA, and \$5.1M from other PPAs including National Catch Share Program, Fisheries Information System, Fisheries Statistics, Hawaiian Sea Turtles, and Fish Research Management Programs. A portion of these funds is used for management activities for observers.

**Includes days deployed for shoreside offloads but not electronic monitoring trips.

***Does not include deployments for electronic monitoring

APPENDIX B. Fisheries Observed in FY 2022

Region	Fisheries with Adequate or Near-Adequate Coverage	Fisheries with Pilot or Baseline Levels of Coverage
AK	Bering Sea/Aleutian Islands Groundfish Trawl	Salmon Gillnet, Setnet, and Driftnet: Southeast Alaska drift gillnet 6,7a, and 8; Yakutat salmon setnet; Kodiak salmon gillnet; Cook Inlet salmon driftnet and setnet
AK	Bering Sea/Aleutian Islands Groundfish Longline	
AK	Bering Sea/Aleutian Islands Groundfish Pot	
AK	Gulf of Alaska Groundfish Trawl	
AK	Gulf of Alaska Groundfish Longline	
AK	Gulf of Alaska Groundfish Pot	
AK	Limited Access Privilege Program Halibut Fixed Gear	
GA	New England Large Mesh Otter Trawl (includes Ruhle and Haddock Separator Trawl)	Gulf of Maine Shrimp Trawl
GA	New England Small Mesh Otter Trawl	New England Hydraulic Dredge (Surfclams, Ocean Quahogs)
GA	Mid-Atlantic Large Mesh Otter Trawl	Mid-Atlantic Hydraulic Dredge (Surfclams, Ocean Quahogs)
GA	Mid-Atlantic Small Mesh Otter Trawl	Mid-Atlantic Longline
GA	New England Twin Otter Trawl	Mid-Atlantic Purse Seine
GA	Mid-Atlantic Twin Otter Trawl	Mid-Atlantic Fish/Conch Pot/Trap
GA	Atlantic Sea Scallop Dredge	Mid-Atlantic Lobster/Crab Pot/Trap
GA	Mid-Atlantic Scallop Dredge	
GA	Mid-Atlantic Scallop Trawl	
GA	New England Gillnet (Small, Large, Extra Large; Sink/Drift)	
GA	Mid-Atlantic Gillnet (Small, Large, Extra Large; Sink/Drift)	
GA	New England Longline	
GA	Mid-Atlantic Handline	
GA	New England Handline	
GA	New England Purse Seine	
GA	New England Paired and Single Mid-Water Trawl	
GA	Mid-Atlantic Paired and Single Mid-Water Trawl	
GA	New England Fish/Conch Pot/Trap	
GA	New England Lobster/Crab Pot/Trap	
NW	West Coast Groundfish Bottom Trawl Catch Shares	West Coast Groundfish Nearshore Fisheries
NW	West Coast Groundfish Limited Entry Fixed Gear	California, Oregon, and Washington Pink Shrimp Fisheries
NW	West Coast Mid-Water Trawl for Whiting (Hake), At-Sea Processing	California Halibut Trawl Fishery
NW	West Coast Mid-Water Trawl for Whiting (Hake), Shoreside Processing	West Coast Open Access Fixed Gear Fisheries
PI	American Samoa Pelagic Longline Tuna	

APPENDIX B. Fisheries Observed in FY 2022

Region	Fisheries with Adequate or Near-Adequate Coverage	Fisheries with Pilot or Baseline Levels of Coverage
PI	Hawaii-based Pelagic Longline (swordfish, tuna)	
SE	South Atlantic and Gulf of Mexico Directed Coastal Gillnet Fishery	South Atlantic and Gulf of Mexico Shrimp Otter Trawl (including rock shrimp)
SE	Atlantic, Gulf of Mexico, and Caribbean Pelagic Longline (swordfish, tuna, sharks)	South Atlantic Reef Fish Fishery
SE	Atlantic and Gulf of Mexico Directed Large Coastal Shark Bottom Longline	Gulf of Mexico Reef Fish Fishery
		Shark Research Fishery
WC	California Large-Mesh Drift Gillnet	
WC	Deep-set Pelagic Longline	
WC	Deep-set Buoy Gear Exempted Fishing Permits	
Total	38	16
<p>Definition of adequate or near-adequate levels of observer coverage: Observer programs that have adequate or near-adequate levels of observer coverage have observer programs that are either “mature or developing” as defined in the 2004 NMFS report Evaluating Bycatch: A National Approach to Standardized Bycatch Monitoring Programs. The definition of a developing program is one in which an established stratification design has been implemented and alternative allocation schemes are being evaluated to optimize sample allocations by strata to achieve the recommended goals of precision of catch, bycatch and discard estimates for the major species of concern. The definition of a mature program is one in which an optimal sampling scheme has been implemented. A mature program is flexible enough to achieve the recommended goals of precision of catch, bycatch and discard estimates for the major species of concern considering changes in the fishery over time.</p>		



U.S. Secretary of Commerce
Gina M. Raimondo

Acting Under Secretary of
Commerce for Oceans and
Atmosphere
Dr. Richard W. Spinrad

Assistant Administrator for
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