

Contents

Executive Summary	3
Accomplishments and Priorities	5
Fiscal Year 2022 Key Accomplishments	5
Goal 1—Meet Customer Needs	5
Goal 2—Provide Quality Products	6
Goal 3—Increase Understanding	7
Goal 4—Ensure Sound Science	7
Goal 5—Operate Collaboratively	8
Goal 6—Meet Program Resource and Funding Needs	9
Fiscal Year 2023 Priorities	9
Goal 1—Meet Customer Needs	9
Goal 2—Provide Quality Products	10
Goal 3—Increase Understanding	11
Goal 4—Ensure Sound Science	11
Goal 5—Operate Collaboratively	12
Goal 6—Meet Program Resource and Funding Needs	13

Executive Summary

The Marine Recreational Information Program is the state-regional-federal partnership that develops, improves, and implements a national network of surveys to estimate how many fish anglers catch and how many trips they take. Along with commercial catch and biological data, these estimates are critical for the assessment and sustainable management of U.S. fish stocks.

The work of our program could not be accomplished without the participation and support of our partners and stakeholders: recreational anglers, for-hire captains, state agencies, fisheries information networks, interstate marine fisheries commissions, regional fishery management councils, and NOAA Fisheries offices and science centers.

As we enter a new fiscal year, MRIP will maintain its focus on ensuring sound science, providing quality products, and increasing partner, customer, and public understanding of our work. As NOAA Fisheries leadership develops future direction stemming from findings of the 2022 National Saltwater Recreational Fisheries Summit, and as we continue to develop our new five-year strategic plan, key priorities for 2023 include:

- Assess and address non-sampling errors affecting recreational statistics. As part of our ongoing commitment to continuous improvement, we will work to address customer and partner concerns regarding potential sources of non-sampling errors in our surveys, which cause estimates to differ from "true" population values. In particular, priority will be given to completion and initial execution of a research plan to understand non-sampling error in the state and federal surveys in the Gulf of Mexico as described in the Transition Plan for State Surveys in the Gulf of Mexico, as well as addressing potential non-sampling error in the Fishing Effort Survey more broadly.
- Develop and implement transition plans for new and improved survey methods. Transition Plans, and their related calibration of estimates, are crucial steps for moving to new and improved survey methods to ensure continuity of the time series, which is necessary to support sound fisheries science and management. We are working with our state partners to implement a Transition Plan for Texas, Louisiana, Mississippi, Alabama, and Florida, including a communications plan to promote transparency and accountability. We are also developing a Transition Plan for moving to the Access Point Angler Intercept Survey and Fishing Effort Survey in Hawaii. Additionally, we expect to initiate a Transition Plan for the modified For Hire Survey once the new survey design is certified.
- Complete pending certifications. As the certification process for state, regional, and federal data
 collection programs continues, we will identify needs for survey modification and improvements,
 as well as provide support for making necessary changes. When warranted by the scope of these
 changes, we will work with our partners to develop Transition Plans to move from legacy surveys
 to updated surveys.

- Continue Large Pelagics Survey redesign. We will complete a final year of sampling for the new LPS design, testing various methods to optimize the productivity of the survey, or the number of intercepts conducted per assignment. In parallel during this final year of testing, we will be compiling documentation for certification and begin planning for the development of a Transition Plan. We will also begin to evaluate how a new LPS design could serve as a model for similar specialized fisheries whose species are encountered infrequently in the general MRIP surveys.
- Support regional implementation teams in achieving regional priorities. MRIP is a national network of data collection programs with many priorities driven by the unique regional recreational data needs identified by the Regional Implementation Teams. In the Atlantic, Pacific, and Gulf of Mexico, regional fishery information networks serve as Regional Implementation Teams. Ad hoc Regional Implementation Teams have been formed in the Caribbean, Pacific Islands, and Alaska, and for highly migratory species in the Atlantic. We will continue working with the teams to update and implement their regional implementation plans.

Accomplishments and Priorities

Fiscal Year 2022 Key Accomplishments

Goal 1—Meet Customer Needs

Provide recreational catch and effort statistics that meet defined, understood, and prioritized needs—including, for example, timeliness of delivery of estimates, spatial and temporal survey coverage, precision of estimates, and statistics for special needs fisheries—of identified regional and national customers.

- Held a Data User Seminar Series to provide stock assessors, fisheries analysts, and other recreational data users with best practices for accessing, analyzing, and using recreational fishing data. Upon completion of the series, adapted content for use as a new customer orientation. (Also supports Goal 3.)
- In accordance with the provisions of Section 201(b) of the Modern Fish Act and in collaboration with the Office of Sustainable Fisheries, completed and submitted to Congress a plan to address recommendations from the 2021 National Academies of Sciences, Engineering, and Medicine (NASEM) Data and Management Strategies for Recreational Fisheries with Annual Catch Limits.
- Published Fishing Effort Survey (FES) microdata and developed FES-specific queries and tools to support custom analyses. (Also supports Goal 2.)
- The Alaska Regional Implementation Team provided the International Pacific Halibut Commission (IPHC) with sex-apportioned age data for recreational halibut harvest in Southcentral Alaska (IPHC Regulatory Area 3A) for use in IPHC stock assessment models.
- In collaboration with the Alaska Regional Implementation Team, presented summaries of halibut recreational fishing mortality for 2020 and 2021 and results of analyses of potential recreational for-hire management measures in 2022 in IPHC Regulatory Areas 2C and 3A at North Pacific Fisheries Management Council (NPFMC) and IPHC annual meetings.
- In collaboration with the Alaska Regional Implementation Team, assisted NPFMC staff with
 recreational halibut fisheries issues. NPFMC staff are currently focused on mechanisms to
 generate revenue for the Recreational Quota Entity, a nonprofit organization designed to
 purchase commercial fishery halibut quota share for use in the recreational for-hire charter
 fishery. They are also reviewing and evaluating the Pacific halibut Catch Sharing Plan, including
 possible scenarios for reallocation among the charter and commercial fishing sectors.
- In collaboration with the Atlantic Regional Implementation Team, continued to present MRIP estimates via the Atlantic Coastal Cooperative Statistics Program (ACCSP) website to support distribution and use of MRIP data.
- In collaboration with the Gulf of Mexico Regional Implementation Team, developed an electronic survey to implement the Southeast For-Hire Integrated Electronic Reporting (SEFHIER) program dockside validation survey.
- In collaboration with the Pacific Islands Regional Implementation Team, the Western Pacific

Fishery Management Council (WPFMC) and the Pacific Island Fisheries Science Center (PIFSC), continued to develop the non-commercial fisheries reporting module as part of the Annual Stock Assessment and Fishery Evaluation Report for each of the Fishery Ecosystem Plans. Preliminary drafts were presented at the April 2022 meeting of the Archipelagic Plan Team. PIFSC continued to work on a refined version of the algorithm that extracts the non-commercial portion of the fisheries data from the creel surveys and commercial receipt books.

Goal 2—Provide Quality Products

Achieve consistency, quality, timeliness, accessibility, and transparency in data collection, production of estimates, and program operations.

- Hosted a series of six data user seminars including "Introduction to MRIP Data," "Statistical Methods and Procedures," "MRIP Query Tool," "Custom Domain Analyses" (two parts), and "FES Queries and Custom Domain Analyses." (Also supports Goal 3.)
- Continued the phased implementation of MRIP Survey and Data Standards. (Also supports Goals 2 and 4.)
- In collaboration with the Alaska Regional Implementation Team, enhanced sampling of marine groundfish in Southeast Alaska (e.g., sample harvested halibut and rockfish, with a focus on black and yelloweye rockfish, for age/sex data).
- In collaboration with the Alaska Regional Implementation Team, continued the interdivisional Statewide Rockfish Initiative, which included:
 - Drafting stock assessment models for yelloweye rockfish in the Prince William Sound inside subdistrict and black rockfish in the North Gulf Coast and Kodiak subdistricts.
 - Investigating harvest strategies for yelloweye rockfish in Prince William Sound.
 - Reconstructing historical harvest of rockfish in Alaskan waters.
- In collaboration with the Alaska Regional Implementation Team, launched an Alaska Department
 of Fish and Game mobile application to simplify purchase of fishing licenses, stamps, and other
 goods, and provide geo-referenced dynamic sport fishing regulations.
- In collaboration with the Atlantic Regional Implementation Team and the Gulf of Mexico Fishery
 Information Network (GulfFIN), coordinated changes to the Access Point Angler Intercept Survey
 (APAIS) tablet application and administered the Marine Recreational Fishing Expenditure Survey
 via tablet in the Atlantic and Gulf regions.
- The Atlantic Regional Implementation Team and the Gulf of Mexico Regional Implementation
 Team coordinated changes to the For-Hire Survey (FHS) data collection in the Gulf of Mexico.
 They implemented an electronic computer assisted telephone interviewing system developed by
 ACCSP that has been used to collect MRIP FHS data in the Atlantic since 2020.
- In collaboration with the Pacific Islands Regional Implementation Team, reviewed and evaluated the territorial creel surveys and will issue a report early in the fall of 2022. The report concludes that the survey design meets the requirements of the NOAA Fisheries Recreational Fishing Survey and Data Standards. However, the vulnerabilities in attaining representative fishery information depend on proper implementation of the creel survey protocols.

Goal 3—Increase Understanding

Strengthen two-way communications with partners and stakeholders to improve their knowledge of the properties and use limitations of catch statistics, and to build confidence in the data.

- Developed "From an Interview to an Estimate" presentation, video recording, and e-newsletter targeted at partners, customers, and stakeholders including recreational anglers. These materials explain how the agency estimates recreational catch per angler trip, number of angler trips, and total catch, including key concepts such as statistical weighting and precision.
- Formed the inter-organizational Gulf Transition Communications Working Group (consisting of NOAA Fisheries, state, council, and commission representatives) to support implementation of the Gulf State Surveys Transition Plan and to ensure partners and stakeholders are aware of progress toward key milestones.
- Created a statistical calibration overview webpage to explain the complex process of calibrating estimates from different surveys into a common currency.
- In conjunction with state and regional partners and NOAA Fisheries' recreational fishing coordinators, hosted six virtual for-hire listening sessions with captains in the Greater Atlantic.
- In collaboration with the Alaska Regional Implementation Team, continued for-hire electronic logbook outreach efforts, including eLogbook webinar demonstrations focused on improving understanding and use of eLogbooks. Specifically targeted Southeast Alaska, where use became mandatory in 2021. Integrated users' feedback to improve the eLogbook's utility, including an option to register vessels through the application, and improved data summaries.
- In collaboration with the Pacific Regional Implementation Team, held instructional webinars to provide demonstrations of the improved Pacific Fisheries Information Network (PacFIN)/Recreational Fisheries Information Network (RecFIN) QueryBuilder tool.
- In collaboration with the Pacific Islands Regional Implementation Team, convened a fishery management and stakeholder engagement event in Guam in August 2022. The purpose of the event was to gather fishing community representatives and local fisheries management agencies from Guam and the Commonwealth of Northern Mariana Islands to learn about the creel survey data collection process, implementation, and catch calculation. (Also supports Goal 4).

Goal 4—Ensure Sound Science

Maintain a strong science foundation for the program that includes robustness, integrity, transparency, and innovation, and that develops and incorporates new advancements in survey design and data collection and analysis.

- In accordance with the provisions of Section 201(b) of the Modern Fish Act, maintained information for the biennial report to Congress describing our progress toward recommendations from the 2017 NASEM review of MRIP.
- In collaboration with the Atlantic Regional Implementation Team, submitted the initial design of the Comprehensive For-hire Data Collection Program for certification.

- As part of the certification process, completed a peer review of FHS and Large Pelagics
 Telephone Survey (LPTS). (Also supports Goals 1 and 2.)
- Completed "Review of Nonprobability Sampling Using Mobile Apps for Fishing Effort and Catch Surveys," which was published in Transactions of the American Fisheries Society (AFS). Research and Evaluation Team (RET) members helped organize and participated in AFS symposium exploring challenges associated with angler apps and citizen science.
- The third year of the Large Pelagics Intercept Survey Redesign Pilot was conducted as planned in the states of New Hampshire, New Jersey, and New York during the June-October Large Pelagics Survey (LPS) sampling season.
- Completed an analysis of a 2021 pilot study that collected detailed information about recreational fishing from private boats (e.g., area fished, types of boats, and access sites used) and evaluated coverage bias in the APAIS.
- Finalized the design of a pilot study to evaluate the sensitivity of effort reporting when asked about possessing a fishing license.
- Evaluated the efficiency of alternative stratification designs for the FES to improve the precision of effort estimates.
- Completed an evaluation of measurement error resulting from question sequence in the FES.

Goal 5—Operate Collaboratively

Maintain effective collaborations with state, interstate, regional, and national partners for cost-effective and responsive recreational data collection and catch estimation.

- The Gulf of Mexico Subgroup of the MRIP Transition Team completed a Transition Plan for the use of catch estimates from Gulf of Mexico state surveys (LA Creel, Mississippi Tails n' Scales, Alabama Snapper Check, the Florida State Reef Fish Survey, and Texas Coastal Creel Survey) in science and management. Completed necessary analyses, collected required documentation and other background information to complete calibrations. Conducted a workshop to achieve consensus among the partners on the transition process and timeline. (Also supports Goals 1, 2, and 4.)
- In collaboration with the Alaska Regional Implementation Team, supported work on the draft MRIP Alaska Region Implementation Plan and finalized membership of the Alaska Regional Implementation Team.
- In collaboration with the Atlantic Regional Implementation Team, provided software base/programming for the APAIS assignment tracking application and APAIS tablet infrastructure to support Hawaii implementation.

Goal 6—Meet Program Resource and Funding Needs

Ensure that the program's value and funding needs are well documented and communicated; resources are utilized efficiently; opportunities to expand capability through leveraging partner resources are fully explored; and actions are taken as authorized to ensure sufficient funding to support the needs of the program (federal and state support).

- Continued to administer \$3 million in Modern Fish Act investment funds to ACCSP, GulfFIN, and Pacific RecFIN to support increased sampling along the Atlantic, Gulf of Mexico, and Pacific coasts.
- Developed metrics to evaluate use and impacts of funding increases on sample sizes and precision of catch and effort estimates.

Fiscal Year 2023 Priorities

Goal 1—Meet Customer Needs

- Complete a new Strategic Plan to define the goals, strategies, and tactics we will work toward over the next five years. (Also supports Goals 2, 3, 4, 5, and 6.)
- Fully implement NOAA Fisheries' Recreational Fishing Survey and Data Standards, including implementing the publication standard. Beginning in April 2023, we will begin publishing estimates cumulatively by two-month wave instead of wave-by-wave, and will no longer publish highly imprecise estimates, those with a percent standard error exceeding 50. Full implementation of the standards will ensure the scientific integrity of our data collection efforts, the quality of our recreational fisheries statistics, and the strength of science-based management decisions. (Also supports Goal 3.)
- Continue to assess the feasibility and cost of modifying the APAIS to be administered in Hawaii as a boat-based rather than angler-based interview and developing, certifying, and implementing a roving creel survey to monitor shore fishing. (Also supports Goals 2, 3, 4, and 5.)
- Continue to support the certification of existing survey designs and/or certification and transition to new and/or modified survey designs, including: new or modified non-commercial fishery monitoring programs in Hawaii; recreational fishing surveys in California, Oregon, Washington, and Puerto Rico; the FHS and LPTS; and the SEFHIER program. (Also supports Goals 2, 4, and 5.)
- In collaboration with the Alaska Regional Implementation Team, initiate the modernization of the Alaska Statewide Harvest Survey, developing a web-based survey with multiple waves to improve response rates and reduce recall bias. (Also supports Goals 2 and 5.)
- In collaboration with the Pacific Islands Regional Implementation Team, finalize the FY 2023-2027 MRIP Pacific Island Regional Implementation Plan, incorporating recommendations from the territorial creel survey review as well as the exploration of the use of the Hawaii bottomfish vessel registry to refine the sample frame of bottomfish fishermen for FES sampling.

Goal 2—Provide Quality Products

- Develop regionally specific estimate reports to facilitate timely and substantive review of preliminary estimates by the internal estimate review team.
- Document procedures for running the APAIS, state survey, and SEFHIER validation survey sample selection programs.
- Continue to work in collaboration with regional partners to implement and evaluate sample sizes, distribution, and sampling sites for the SEFHIER validation survey.
- Initiate development of a Transition Plan for APAIS and FES in Hawaii.
- Conduct a Transition Team workshop to develop guidance and procedures for conducting multiple transitions for ongoing and planned regional survey modifications.
- In collaboration with the Alaska Regional Implementation Team, enhance sampling of marine groundfish in Southeast Alaska (e.g., sample harvested halibut and rockfish, with a focus on black and yelloweye rockfish, for age/sex data) for a second year.
- In collaboration with the Alaska Regional Implementation Team, develop data storage policies and begin work on developing data storage structures.
- In collaboration with the Atlantic Regional Implementation Team, continue to support the development of a comprehensive for-hire data collection program for the Atlantic coast that will increase the use of electronic logbooks and reduce overall reporting burden.
- In collaboration with the Atlantic Highly Migratory Species Implementation Team, update the Greater Atlantic Regional Fisheries Office (GARFO)'s Fish Online to become a "one-stop" reporting application, reducing for-hire captains' reporting burden. Integrate highly migratory species (HMS) data elements into the app so trip reports submitted through Fish Online meet Atlantic HMS catch reporting requirements for bluefin tuna, swordfish, and billfish.
- In collaboration with the Gulf of Mexico Regional Implementation Team, transition to Oracle Cloud-based servers for all Oracle recreational and commercial databases.
- In collaboration with the Pacific Regional Implementation Team, evaluate the design of the RecFIN Data Management System, prioritize data for input into the system, and develop standard data transfer protocols.
- In collaboration with the Pacific Regional Implementation Team, launch a fish identification
 mobile app for West Coast groundfish species, moving from the current version that provides
 anglers with a key to help them identify their fish to a future version that will use machine
 learning to identify species from angler submitted images.
- In collaboration with the Pacific Islands Regional Implementation Team, support the transition from paper forms to tablet-based data entry for the Hawaii Marine Recreational Fisheries Survey (HMRFS).
- In collaboration with the Pacific Islands Regional Implementation Team, develop an application for the MRIP certification of the Pacific Island territories' Western Pacific Fisheries Information Network (WPacFIN) surveys, based on the evaluation completed in FY22.

Goal 3—Increase Understanding

- Conduct Customer Needs and Satisfaction Assessment and Partner Needs and Satisfaction
 Assessment to evaluate results against 2020 and 2021 benchmarks, respectively. Respond to
 new findings that will inform communications and outreach and ensure customers understand
 and have access to information about our statistical methods, the assumptions and limitations of
 our data, the appropriate uses of our data, and the trends in the data themselves.
- Continue to support FES communications.
- Working with the regional communications working groups, collaborate with Regional Implementation Teams to meet the communications and outreach needs identified in the Regional Implementation Plans.
- Working with state and regional partners, host MRIP 101 sessions with regional fishery
 management council and interstate marine fisheries commission members and staff;
 nongovernmental organizations; and fishing clubs and associations.
- Working with the Office of Legislative and Intergovernmental Affairs, support the engagement of congressional staff through all-interested and/or targeted briefings about recreational saltwater fisheries data collection, national and regional programmatic priorities, implementation plans, and other related actions or issues.
- Support the roll-out of NOAA Fisheries' Report to Congress in Response to the NASEM In-season Management Study. Produce web feature, MRIP Newscast, and FishNews blurb.
- Further building on the Social Network Analysis findings, expand work to include recreational fishing data-related content in state websites, state fishing guides, and other state fishing publications such as newsletters and magazines.

Goal 4—Ensure Sound Science

- Evaluate how additional permitting/licensing can most effectively provide usable MRIP sample frames.
- In collaboration with the Alaska Regional Implementation Team, initiate modernization of the Statewide Harvest Survey to develop a web-based survey with multiple survey waves annually to improve survey response rate and reduce recall bias.
- In collaboration with the Gulf of Mexico Regional Implementation Team, develop an electronic application for collection of Alabama Snapper Check dockside validation survey data.
- In collaboration with the Atlantic Highly Migratory Species Implementation Team, complete the third year of a pilot study to test a new Large Pelagics Intercept Survey.
- In collaboration with the Atlantic Highly Migratory Species Implementation Team, complete the Large Pelagics Pilot Study (LPPS), and prepare for a potential new LPS design in 2024. Complete additional year of pilot study field sampling. Finalize the LPPS data collections for 2022, and perform the comparative analyses of pilot survey data collected 2020-2022. Prepare for certification, developing a transition plan, and conducting calibration. Develop and implement a communications and outreach plan. (Also supports Goal 3.)

- Implement license sensitivity experiment to evaluate the potential for bias caused by misreporting when asked about possessing a fishing license.
- Develop and execute a plan for acting on the findings of completed studies examining the potential for measurement error in the FES. The plan will include consideration of transitioning to a revised FES questionnaire and/or one-month waves.

Goal 5—Operate Collaboratively

- Initiate and monitor execution of the Transition Plan for Gulf of Mexico State Surveys. (Also supports Goal 2.)
- As part of the Gulf of Mexico State Surveys Transition Plan, develop and begin to execute a
 research plan to examine the sources, magnitude, and prospective remediation of sources on
 non-sampling error in the surveys operating in the Gulf, including MRIP APAIS-FES and the state
 surveys. (Also supports Goal 4.)
- Begin updating existing Regional Implementation Plans and finalize the Alaska Regional Implementation Plan.
- In collaboration with the Regional Implementation Council, continue to collaborate with the MRIP Regional Implementation Teams to work with states, fishery management councils, FINs, and other regional partners to determine data collection priorities and preferred survey implementation methods and needs.
- In accordance with the provisions of Section 202 of the Modern Fish Act pertaining to state partnerships, maintain information to support the next biennial report to Congress describing our plans to build on existing state-federal data collection partnerships.
- In collaboration with the Alaska Regional Implementation Team, finalize the MRIP Alaska Regional Implementation Plan.
- In collaboration with the Caribbean Regional Implementation Team, continue to establish an overarching regional governance structure responsible for administering a recreational data collection program in Puerto Rico and the U.S. Virgin Islands.
- In collaboration with the Gulf of Mexico Regional Implementation Team, develop benchmarking and transition plan for use of SEFHIER estimates and develop a plan for for-hire reporting for non-federally permitted vessels.
- In collaboration with the Pacific Islands Regional Implementation Team and the WPFMC
 Non-Commercial Fishery Advisory Committee, identify evolving priorities of the non-commercial
 fisheries in Hawaii and the Pacific Island territories. The Pacific Island Regional Implementation
 Team will also work with the Hawaii Division of Aquatic Resources to pilot test specialized
 sampling of the bottomfish fishery using the FES survey design and Hawaii's bottomfish vessel
 registry.

Goal 6—Meet Program Resource and Funding Needs

- Assess new funding requirements to address partner and stakeholder needs. Develop detailed
 cost estimates for addressing expressed needs to establish opportunities and set priorities for
 data products that can support in-season management for some species in some regions,
 greater precision, and more timely production of catch and effort estimates, among other issues.
- Work with regional partners to optimize the allocation of program funds and develop metrics that will help evaluate their use and impacts on catch and effort estimates.
- In collaboration with the Pacific Islands Regional Implementation Team, support the pilot testing of the FES subsampling of the Hawaii bottomfish vessel registry. PIFSC will also explore the feasibility of using FIS and/or MRIP funding to develop the progressive web application for the tablet-based HMRFS data entry.
- As part of the Gulf States Survey Transition Plan research path, identify funding sources to support studies and analyses to investigate sources of error in all programs.



U.S. Secretary of Commerce Gina M. Raimondo

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

Assistant Administrator, NOAA Fisheries Acting Assistant Secretary for Oceans and Atmosphere, NOAA

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www.fisheries.noaa.gov

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