



Mid-Atlantic Fishery Management Council

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M E M O R A N D U M

Date: May 25, 2021
To: Council
From: Jason Didden, Staff
Subject: 2020 Marine Recreational Information Program (MRIP) Estimates

NOAA Fisheries staff will make a presentation and answer questions regarding the recently-released 2020 MRIP catch estimates and the methodology they used to bridge the data gaps in 2020 caused by COVID-19.

The following is included for Council consideration on this subject:

- 1) Frequently Asked Questions on NOAA Fisheries' 2020 Marine Recreational Catch Estimates (provided by MRIP staff)
- 2) 2021 MRIP Implementation Plan Update

FAQs on NOAA Fisheries' 2020 Marine Recreational Catch Estimates

Where can I access the agency's recreational catch estimates?

The Marine Recreational Information Program maintains a searchable database of recreational catch and effort estimates known as the [MRIP Query Tool](#). Estimates can also be found on the program's [Recreational Fishing Data Downloads](#) webpage.

What information is available as part of the agency's 2020 catch estimates?

These estimates include catch (catch per trip), effort (trip), and total catch estimates for all fishing modes (shore, private boat, and for-hire, which includes charter and headboat) for the Atlantic Coast (Maine through Florida), Gulf Coast (Florida through Mississippi), and Hawaii. The estimates were produced using the agency's standard estimation methods and published at the standard levels of aggregation (annual, two-month sampling wave, geographic region, fishing mode, and area fished).

What is imputation?

In statistics, imputation is the process of filling data gaps with proxy, or replacement, values. These replacement values are known as imputed data.

Why did NOAA Fisheries select imputation as its method of addressing gaps in recreational catch data?

Imputation is a well-established, standard statistical practice for addressing missing survey data. The U.S. Census Bureau, for example, applies [imputation procedures](#) to data from its Survey of Income and Program Participation. Upon evaluation, both staff and statistical consultants agreed imputation would be a reasonable method of filling our catch data's gaps.

How was imputation applied?

Because NOAA Fisheries actively tracked sampling suspensions with our state data collection partners—monitoring when and where the angler intercept survey was interrupted—we were able to fill gaps in our catch data with corresponding catch records from prior years. This simple imputation approach involved using 2018 and 2019 catch data as proxy values to fill 2020's data gaps. These 2018 and 2019 data were not arbitrarily selected. Instead, imputed data are representative of the data gaps, matching the time, place, and fishing mode combinations that would have been sampled had the survey continued uninterrupted. To ensure imputed data weren't over-represented against observed data, the original sample weights for the 2018 and 2019 catch records were down-weighted. Imputation only affected catch data; because our effort surveys continued largely uninterrupted, imputation was not required for effort data.

How will data users know where imputation was applied?

The [MRIP Query Tool](#)'s Catch Time Series Query indicates the percent of each estimate that was produced using imputed catch records.

How did imputation affect catch estimates in my region?

When estimates that were produced with both imputed and observed data are compared with estimates that were produced using only observed data, we can see that the overall impacts of imputation on the agency's 2020 catch estimates were modest, with some regional variability. For example, impacts on landings estimates in New England and the Mid-Atlantic were larger than in the South Atlantic and Gulf of Mexico. These differences reflect differences in states' decisions to suspend

sampling: New England and the Mid-Atlantic saw longer sampling suspensions and larger data gaps than the South Atlantic and Gulf of Mexico.

Does NOAA Fisheries expect to revise 2020 estimates once 2021 data have been collected?

When data from 2021 are available in 2022, the agency will evaluate the effects of including 2021 data (for example, alongside 2019 data and instead of 2018 data) in the imputation. Because these effects are unknown, the agency cannot predict whether it will seek to revise its 2020 catch estimates.



NOAA
FISHERIES

FY 2021 Implementation Plan Update







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Executive Summary

The Marine Recreational Information Program (MRIP) is the state-regional-federal partnership that develops, implements, and continually improves a national network of recreational fishing surveys. The program uses data from these surveys to produce estimates of total recreational catch, which are vital to the assessment and management of U.S. fish stocks. These estimates could not be produced without the active participation of state agencies, interstate marine fisheries commissions, and regional fishery management councils. While NOAA Fisheries maintains a central role in establishing survey standards and developing and certifying survey designs, implementation occurs at the regional level. This accounts for differences in fisheries, fishing communities, and preferred methods of collecting information from anglers.

Our partners have shaped our goals, contributed to our accomplishments, and informed the priorities described in this report. As we enter a new fiscal year, we will maintain our focus on ensuring sound science, providing quality products that meet science and management needs, and increasing partner, customer, and public understanding of our work. In FY 2021, we will continue to:

- **Respond to the challenges of COVID-19.** Begin to address the data gaps caused by the widespread suspension of in-person and at-sea sampling, and monitor the pandemic's continued impact on recreational fishing data collection.



Photo: GA Department of Natural Resources, Coastal Resources Division

- **Transition to new survey and data standards.** Ensure changes to our statistical processes are communicated effectively and implemented smoothly, with input from the agencies and organizations that rely on them to assess and manage fish stocks.

- **Improve and expand our network of state, regional, and coastwide data collection programs.** Work with

regional partners to develop and implement a logbook-based for-hire data collection program, with intercept survey-based validation sampling, for the South Atlantic and Gulf coasts. Reestablish a data collection program in Puerto Rico, transition to a new or modified data collection design in Hawaii, and begin to develop a new data collection design for the U.S. Virgin Islands. Increase sampling in the Atlantic, Gulf, and Pacific, develop improvements to our Large Pelagics Survey, and support research to improve the data quality of

our general catch and effort survey designs.

- **Engage in continued dialogue with the recreational fishing community.** Research the needs of this key audience and deliver information to build understanding of recreational fishing data, its uses, and its limitations.

Better Data, Better Fishing

Learn more about our work to implement these tactics and to support NOAA Fisheries in its mission to maintain healthy and productive fisheries at countmyfish.noaa.gov.

Fiscal Year 2020 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.

- Continued to work with the Hawaii Division of Aquatic Resources to evaluate new survey designs that will better monitor target species. Began work to modify Hawaii's Access Point Angler Intercept Survey (APAIS) site sampling and interview schedule to better suit local monitoring needs. (Also supports Goals 2 and 5.)
- Continued to work with the NOAA Fisheries Southeast Regional Office, Gulf States Marine Fisheries Commission, Puerto Rico Department of Natural and Environmental Resources, and U.S. Virgin Islands Department of Planning and Natural Resources to produce a plan to:
 - Re-evaluate the condition of all public fishing access sites in Puerto Rico following substantial hurricane and earthquake damage.
 - Review data needs and collection methods to prepare for resumption of data collection in Puerto Rico and establish a data collection program in the U.S. Virgin Islands.
 - Identify a regional governance structure to oversee these developments and future survey administration. (Also supports Goal 5.)

Goal 2—Provide Quality Products

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

- Transitioned the For-Hire Survey (FHS) from contractor to state conduct.
- Improved the Public Fishing Access Site Register and added Atlantic Highly Migratory Species (HMS) permit-holders to the For-Hire Vessel Directory, among other changes, to facilitate vessel information entry, coding, and linking with permit information.



Photo: NOAA Fisheries

- Continued to work with state, regional, and federal partners in the Atlantic and Gulf of Mexico to develop a comprehensive for-hire data collection program that will:
 - Improve the validation of logbook-collected data, as well as the integration of such data across state and federal programs.
 - Ensure vessels that do not report via logbooks are covered through a certified survey or other methods.
 - Reduce reporting burden through improved data sharing. (Also supports Goal 5.)
- Developed a dockside validation survey to support the Southeast For-Hire Electronic Reporting Program. (Also supports Goal 5.)
- Completed a Customer Satisfaction Assessment and identified recommendations to improve customer satisfaction with our data products, confidence in the quality of the information we provide, and understanding of the uses and limitations of our estimates. (Also supports Goal 5.)
- Adopted MRIP Survey and Data Standards to promote consistency, comparability, and interoperability across our national network of recreational fishing data collection programs. (Also supports Goal 4.)

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.

- Worked with state and regional partners to facilitate recreational fishing listening tours in Virginia and North Carolina, which included two listening sessions with more than 30 private anglers and for-hire captains and crew; six meetings with bait and tackle shops; five meetings with fishing clubs and associations; one boat show; and a half-day shadowing an APAIS field interviewer. (Also supports Goal 5.)
- Completed the first phase of the recreational angler social network analysis, examining the information-sharing habits of saltwater recreational anglers, as well as their opinions about recreational fishing data collection and management.
- Worked with the Atlantic Coastal Cooperative Statistics Program (ACCSP), the Gulf Fisheries Information Network (GulFIN), and state agency staff to test new outreach materials, discuss state communications needs, and identify opportunities for collaboration. (Also supports Goal 5.)
- Developed a series of outreach materials including an infographic, rack cards, and fact sheets to communicate programmatic activities and priorities.
- Delivered educational briefings to Marine Resource Education Program science workshops, the Rutgers Cooperative Extension Introductory Fisheries Science for Stakeholders course, and Sea Grant outreach staff.
- Developed and tested a Partner Needs and Satisfaction Assessment, which will assess the strength of our relationship with partners, their understanding of our program, and satisfaction with our communications channels and the products we develop.

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.

- Completed a pilot study to evaluate a web-push design for estimating recreational fishing effort, comparing

the data quality, response rates, and reported demographic characteristics and fishing activity of the standard Fishing Effort Survey (FES) with those of a design that first encouraged households to respond via online questionnaire.

- Completed data collection and preliminary analysis for a study to evaluate the impact of question order on coastal household reports of shore and private boat fishing activity.
- Designed and initiated a study to determine whether FES estimates are impacted by nonresponse bias.
- Developed and initiated testing of an innovative survey design that combines probability and nonprobability sampling to overcome the rare-encounter nature of large pelagic species in the dockside Large Pelagics Intercept Survey.
- Monitored the impacts of COVID-19 on recreational fishing data collection and evaluated alternative estimation methods to compensate for interrupted survey activities.
- Reviewed, approved, and released several pilot study reports, including:
 - Developing an Electronic Logbook to Census For-Hire Angler-Trip Effort, Catch, and Harvest in Alaska.
 - [Electronic Data Collection for the Atlantic Coast Access Point Angler Intercept Survey](#).
 - Analysis of Marine Recreational Angler Information Gathering and Sharing Habits and Opinions Regarding Fisheries Management and Data Collection (social network analysis).

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.

- Worked with the California, Oregon, and Washington Departments of Fish and Wildlife toward certifying existing data collection programs. (Also supports Goal 2.)
- Supported the transition toward specialized state surveys in the Gulf of Mexico, completing reviews of an Alabama Department of Conservation and Natural Resources report on Snapper Check and a proposed

Florida State Reef Fish Survey calibration approach. (Also supports Goal 2.)

- Worked with GulfFIN to prepare for the transition from paper forms to tablet-based APAIS data collection.

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).

- Administered \$3 million in Modernizing Recreational Fisheries Management Act (Modern Fish Act) investment funds to ACCSP, GulfFIN, and Pacific RecFIN to support increased sampling along the Atlantic, Gulf, and Pacific coasts. This was supported by new permanent funds dedicated to improving coverage of rarely encountered species and the precision of catch estimates. (Also supports Goals 2, 4, and 5.)



Photo: Victor Vecchio/Greater Atlantic Regional Fisheries Office

Fiscal Year 2021 Priorities

Priority activities are detailed below, organized by the six goals and associated key tactics outlined in our five-year strategic plan.

Goal 1—Meet Customer Needs

Key Tactics:

Modify survey designs to meet customer needs in ways that are both feasible and cost-effective.

- In Puerto Rico and the U.S. Virgin Islands, determine non-commercial fishery data collection needs, considering the feasibility, cost, and logistics of monitoring catch for select federally managed invertebrates. Select modified (Puerto Rico) and new (U.S. Virgin Islands) survey designs to be documented—and, if necessary, certified—and implemented in the region. (Also supports Goal 5.)
- In Hawaii, determine the feasibility and cost of modifying the APAIS to a boat-based rather than angler-based interview to allow for the inclusion of select federally managed invertebrates in catch reports. Complete documentation of the selected survey design and its review for certification. (Also supports Goal 5.)
- Initiate the modernization of the Alaska Statewide Harvest Survey, developing a web-based survey with multiple survey waves to improve response rates and reduce recall bias. (Also supports Goal 5.)
- Develop and implement methodology for generating annual catch estimates for regions in which catch data collections were interrupted due to COVID-19.

Goal 2—Provide Quality Products

Key Tactics:

Collect data (i.e., conduct surveys) consistent with minimum requirements.

- Use Modern Fish Act investment funds to restore, maintain, and in some cases, increase sampling along the Atlantic, Gulf, and Pacific coasts to improve the precision of catch estimates. (Also supports Goals 5 and 6.)
- Complete a study by the National Academies of Science, Engineering, and Medicine (NASEM) on the suitability of MRIP catch estimates for in-season management

of annual catch limits (ACLs). The study will include recommendations for data collection improvement and management system changes to address any documented unmet needs. Upon receipt of the NASEM findings and recommendations, work with the Office of Sustainable Fisheries to prepare a plan to address the recommendations, and submit the plan to Congress. (Also supports Goal 1.)

- Work with ACCSP to optimize sampling across surveys. (Also supports Goal 5.)
- Enhance marine groundfish sampling in Southeast Alaska.
- Continue to support the development of a comprehensive for-hire data collection program for the Atlantic coast that will increase the use of logbooks and reduce overall reporting burden. (Also supports Goal 5.)
- Implement MRIP Survey and Data Standards.

Create and support regional bodies to monitor the consistency and quality of the data being generated and to ensure continual improvement of data quality (as part of regional implementation teams).

- Complete Transition Plans as necessary for modified and replacement survey designs, including Pacific RecFIN (for California, Oregon, and Washington state surveys); the Southeast For Hire Electronic Reporting Program; and Puerto Rico. (Also supports Goal 5.)
- Complete Transition Plan for fully integrating calibrated catch estimates from Gulf of Mexico supplemental state surveys (Florida, Alabama, and Mississippi) and replacement survey (Louisiana) into NOAA Fisheries stock assessments and management. (Also supports Goal 5.)
- Continue to work with the Hawaii Division of Aquatic Resources and other partners in the region (including NOAA Fisheries and the Western Pacific Fishery Management Council) to develop a Transition Plan for any necessary benchmarking, calibration, and implementation of new or modified surveys for non-commercial fishery monitoring in Hawaii. (Also supports Goal 5.)
- Finalize the Alaska MRIP Regional Implementation Plan. (Also supports Goal 5.)
- In Hawaii, design an improved data processing and quality control/quality assurance program to support

field data collection. Include tablet-based data collection in the revised administrative structure and process. (Also supports Goal 5.)

Create clear and concise minimum requirements for data collection, statistical estimation, access, and information management, and for providing measures of precision and sources.

- Develop statistical approaches to identify survey data and/or estimates that are inconsistent with historical trends or time series. (Also supports Goal 4.)

Goal 3—Increase Understanding

Key Tactics:

Identify and maintain contact with key stakeholders. Periodically evaluate stakeholder understanding of MRIP and adjust communications strategies as needed.

- Complete the second phase of the recreational angler Social Network Analysis, implementing a qualitative in-person survey to examine angler information networks.
- Host MRIP 101 sessions with regional fishery management council and interstate marine fisheries commission members; non-governmental organizations; and fishing clubs and associations.
- Host listening sessions with private anglers and the for-hire sector.
- Continue to create a series of infographics on topics such as for-hire data collection, weighted estimation, and MRIP's role in fisheries science and management.
- Produce a series of videos on topics such as an overview of MRIP, tablet-based data collection, and the catch and effort estimation process.
- Conduct outreach to for-hire owners and operators in the Southeast regarding the implementation and transition to new federal for-hire electronic reporting requirements. Ensure HMS permit holders are aware of the relationship between these new requirements and existing HMS catch reporting requirements. (Also supports Goal 5.)
- Conduct outreach to charter and guide operators in Alaska around eLogBook requirements, including "how-to" videos and demonstrations at industry

meetings. Improve understanding and use of eLog-Books, especially where use will be mandatory to provide Chinook salmon harvest data. (Also supports Goal 5.)

- Conduct proactive media outreach.
- Maintain active engagement in the Marine Resource Education Program and Introductory Fisheries Science for Stakeholders course.
- Provide communications and outreach support to address the requirements of the Modern Fish Act.
- Consult with stakeholders to evaluate their perceptions of survey estimates.

Provide our partners with the tools and coordination necessary to enable consistent communications about recreational data collection methods, uses, and limitations.

- Conduct a Partner Needs and Satisfaction Assessment. Based on the results, develop a communications and outreach toolkit. (Also supports Goal 5.)
- Host “Ask Me Anything” sessions between program staff and state field interviewers, port agents, recreational fishing coordinators, and additional NOAA Fisheries staff. (Also supports Goal 5.)
- Develop leadership backgrounders on high-profile topics, such as calibration, estimation, outliers, rare-event species, and survey design certification.
- Continue to leverage regional communications working groups to execute Regional Implementation Plan

priorities and related communications and outreach efforts. (Also supports Goal 5.)

Assess customer understanding of and satisfaction with our data products and communications.

- Improve customer access to documentation that describes our statistically rigorous and scientifically sound survey design and estimation methods. (Also supports Goal 5.)
- Develop materials to support an onboarding process for new customers, such as webinars and/or user guides. (Also supports Goal 5.)

Goal 4—Ensure Sound Science

Key Tactics:

Support research aimed at designing, testing, and implementing new and/or improved recreational fishing surveys that address independent review recommendations and specific partner needs.

- Implement the Recreational Fishing Boat Survey in three states as a study to evaluate APAIS bias in estimating distribution of effort by area fished.
- Finalize the design of and implement the License Sensitivity Survey to evaluate the sensitivity of reporting fishing effort when asked about possessing a fishing license.
- Continue redesigning and conducting field testing for the Large Pelagics Survey.



Photo: New York State Department of Environmental Conservation, Division of Marine Fisheries

- Develop and implement methods to produce recreational catch and effort estimates in response to the data gaps that resulted from COVID-19 related sampling interruptions.
- Complete internal technical and policy reviews and publish outstanding pilot study reports to the MRIP website.
- Continue evaluations of alternative estimation methodologies for rare event species that were developed with support from MRIP consultants. Identify next steps for the project including 1) developing recommendations on guidance for use, 2) developing tools for implementing alternative estimation approaches, and 3) exploring additional estimation methodologies including small area estimation methods.

Seek independent reviews of current and proposed survey designs, estimation methods, and data collection technologies that are on the MRIP Certification Track.

- At the request of the Project Management Team, review designs submitted for certification, including, for example, the For-Hire Survey.

Goal 5—Operate Collaboratively

Key Tactics:

Evaluate and, as appropriate, support and enable delegating responsibility of survey operations to regions, based on standards to maintain data consistency and comparability.

- Continue expanded engagement by ACCSP in council and commission meetings regarding the development of electronic for-hire trip reports and potential use for fisheries management.
- Support collaboration among the Atlantic HMS Division and the NOAA Fisheries One Stop Reporting initiative, ACCSP Recreational Technical Committee, ACCSP Gear Codes Working Group, Southeast For-Hire Electronic Reporting Program, and others to ensure data collection efforts meet Atlantic HMS data needs.
- Continue to support GulfFIN’s transition from paper forms to tablet-based APAIS data collection.
- Update the Atlantic MRIP Regional Implementation Plan and Atlantic HMS Regional MRIP Implementation

Plan to reflect achieved objectives and new priorities. (Also supports Goal 4.)

- Continue to support the development and improvement of databases, documentation, reporting systems, and applications for RecFIN and PacFIN data users, including a web API that provides access to data tables, an application that supports data queries, and a mobile app that supports the identification of West Coast rockfish species.
- Prepare a catch-weighted length composition report for the RecFIN Groundfish Management Team to support the Northwest Fisheries Science Center in providing length composition of groundfish species, weighted by catch estimates from the RecFIN database.
- Continue to work with the Southeast For-Hire Electronic Reporting Program to develop and implement a dockside validation survey to support electronic logbook reporting by federally permitted for-hire vessels in the Gulf of Mexico. Evaluate the survey design for use with state and federal for-hire logbook programs on the Atlantic coast. (Also supports Goal 5).

Respond to the requirements of the Modern Fish Act.

- Complete a Plan for State Partnerships that addresses the requirements of the Modern Fish Act, and includes a summary of the regional MRIP state-federal partnerships, their priorities and needs, evaluations of data states submit, and opportunities to improve and expand the partnerships.
- Prepare an updated report to Congress, as required by the Modern Fish Act, on the status of implementation of the recommendations of the 2017 NASEM review of MRIP. (Also supports Goal 3.)

Goal 6—Meet Program Resource and Funding Needs

Key Tactic:

Administer Modern Fish Act investment funds.

- Continue to administer an additional \$3 million in Modern Fish Act investment funds to support the highest priorities identified in the Atlantic, Gulf of Mexico, and Pacific Regional Implementation Plans. (Also supports Goals 4 and 5.)

MRIP Strategic Plan Tactics At-a-Glance

The following charts summarize tactics MRIP is utilizing to support our six goals. The charts are based on strategies, tactics, and schedules identified in the 2017 MRIP strategic plan; the numbers listed next to each tactic correspond with the goal and strategy the tactic supports in the strategic plan, which may be viewed in its entirety [online](#).

The tactics and timelines from the strategic plan guide the annual implementation planning process, with additional tactics added to annual implementation plans to reflect the evolution of new needs and requirements. The timelines reflected in these charts are drawn from the strategic plan; some of those tactical implementations remain on track, while others are behind schedule.

Acronyms used in the charts refer to MRIP teams, unless otherwise noted:

- CET: Communications and Education Team
- ECT: Expert Consultant Team
- ESC: Executive Steering Committee
- LT: Leadership Team
- OC: NOAA Fisheries Office of Communications
- OT: Operations Team
- PMT: Program Management Team
- RET: Research and Evaluation Team
- RFPA: NOAA Fisheries Recreational Fishing Policy Adviser
- RIC: Regional Implementation Council
- RITs: Regional Implementation Teams
- SOT: Survey Operations Team
- SF3: Office of Sustainable Fisheries (Domestic Fisheries Division)
- ST: Office of Science and Technology
- ST1: Office of Science and Technology (Fisheries Statistics Division)
- TT: Transition Team

Tactics	Responsible Entities	Timeline						
		2017	2018	2019	2020	2021	2022	2023
Goal 1—Meet Customer Needs		2017	2018	2019	2020	2021	2022	2023
➤ 1.1.1. Identify primary customers.	ST1, CET	◆			◆			
➤ 1.1.2. Identify customer needs at intervals of not more than five years, in conjunction with reviews of Regional Implementation Plan updates.	ST1			◆			◆	
➤ 1.2.1. Assess customer satisfaction at intervals of two to three years.	CET; Contractors; ST1				◆			◆
➤ 1.3.1. Evaluate feasibility and costs of meeting different customer needs through regional implementation planning process and customer needs assessments (per Tactic 1.2.1).	LT; ST1		◆—————◆					
➤ 1.3.2. Modify survey designs to meet customer needs in ways that are both feasible and cost-effective.	ST1		◆—————◆					
Goal 2—Provide Quality Products		2017	2018	2019	2020	2021	2022	2023
➤ 2.1.1. Create clear and concise minimum requirements for data collection, statistical estimation, access, and information management, and for providing measures of precision and sources of bias in:	ST1; ECT; MRIP teams as relevant		◆—————◆					
• 2.1.1.1. Data collection.	ST1; ECT; SOT		◆—————◆					
• 2.1.1.2. Statistical estimation.	ST1		◆—————◆					
• 2.1.1.3. Access and information management.	ST1		◆—————◆					
• 2.1.1.4. Measures of precision and sources of bias.	ST1		◆—————◆					
➤ 2.1.2. Collect data (i.e., conduct surveys) consistent with minimum requirements.	ST1; partners	◆	—————▶					
➤ 2.1.3. Establish minimum quality (precision and absence of bias) standards for survey statistics provided to the public.	LT			◆—————◆				
➤ 2.1.4. Seek periodic independent reviews of program (i.e., OST five-year Science Plan reviews).	LT; ESC; ST1		◆					◆
➤ 2.2.1. Create and support regional bodies to monitor the consistency and quality of the data and to assure continuous improvement of data quality (as part of regional implementation teams).	RITs; ST1		◆—————◆					
➤ 2.2.2. Document the major elements of MRIP program management, policy and procedures (e.g., Organizational Governance, Planning and Implementation, Certification/Transition, Budget Processes).	ST1		◆—————◆					
➤ 2.3.1. Develop complete documentation of survey and estimation protocols, quality assurance procedures, and data quality control procedures.	ST1	◆	—————▶					
➤ 2.3.2. Maintain public website with comprehensive documentation of methods, sample frames, and statistics.	ST1; CET	◆	—————▶					
➤ 2.4.1. Develop and execute transition plans that outline a process and timeline for implementing new and/or improved survey designs.	TT; ST1; SF3	◆	—————▶					
➤ 2.4.2. Assess need for development and use of tools that convert statistics produced by surveys into common currency across all surveys and develop as necessary.	ST1; RITs	◆	—————▶					

Tactics	Responsible Entities	Timeline						
		2017	2018	2019	2020	2021	2022	2023
Goal 3—Increase Understanding								
➤ 3.1.1. Conduct an internal annual assessment of partner and stakeholder communication and outreach needs, including an evaluation of the effectiveness of current communications products..	CET; ST1	◆	◆	◆	◆	◆	◆	◆
➤ 3.1.2. Develop outreach materials to provide consistent messaging regarding recreational fishing data improvement efforts among internal and external partners.	CET; ST1	◆—————▶						
➤ 3.2.1. Identify and maintain contact with key stakeholders (e.g., Social Network Analysis).	CET; ST1					◆		
➤ 3.2.2. Conduct a formal external MRIP communications and outreach feedback and needs assessment every three to five years.	CET; ST1	◆				◆		
➤ 3.2.3. Establish an MRIP onboarding process(es) for key stakeholders and primary customers (may be different processes).	CET; ST1					◆		
➤ 3.3.1. Develop targeted outreach materials and tactics to educate stakeholders on the importance of various survey components and limitations.	CET; ST1	◆—————▶						
➤ 3.3.2. Periodically evaluate stakeholder understanding of MRIP and adjust communications strategies, as needed.	CET; ST1		◆—————▶					
➤ 3.3.3. Host primary customer workshop to train participants to effectively access, analyze, and/or use data tools; assess results and determine benefits of repeating.	CET; ST1					◆		
➤ 3.4.1. Expand Communications and Education Team to include members of partner education and outreach programs.	CET, ST1	◆—————▶						
➤ 3.4.2. Pursue inclusion of MRIP in curricula for Marine Resource Education Program (MREP) and new Council member trainings.	CET; ST1; SF3		◆—————▶					
➤ 3.4.3. Provide support to a NMFS recreational fisheries outreach and education initiative.	OC; RFPA; CET; SF; ST		◆—————▶					
➤ 3.4.4. Provide our partners with the tools and coordination necessary to enable consistent communications about recreational data collection methods, uses, and limitations.	CET; ST1		◆—————▶					
➤ 3.5.1. Maintain current content on website.	CET; ST1	◆—————▶						
➤ 3.5.2. Assess web analytics to improve web content and usage.	CET; ST1		◆—————▶					
➤ 3.6.1. Increase use of public relations; social and digital media.	CET; ST1	◆—————▶						
➤ 3.6.2. Provide content for inclusion in stakeholder outreach products and publications (e.g., fishing magazines, blogs).	CET; ST1	◆—————▶						
➤ 3.7.1. Revise/expand the MRIP Strategic Communications Plan to include the recommendations in the 2017 MRIP Review by NASEM, including measures to enhance two-way dialogue with key stakeholders and effective outreach to anglers.	CET; ST1	◆						
➤ 3.7.2. Adopt and execute communications plans for high-profile MRIP implementation actions (e.g., FES Transition).	CET; ST1	◆—————▶						

Tactics	Responsible Entities	Timeline							
		2017	2018	2019	2020	2021	2022	2023	
Goal 4—Ensure Sound Science		2017	2018	2019	2020	2021	2022	2023	
➤ 4.1.1. Support research aimed at designing, testing, and implementing new and/or improved recreational fishing surveys that address independent review recommendations and specific partner needs (e.g., private access, discards).	OT; ST1								
➤ 4.1.2. Evaluate the potential application of new electronic technologies into the program.	OT; ST1								
➤ 4.1.3. Develop an analytical tool that enables optimization of sample allocation within and among surveys to address desired levels of precision for varying purposes, as identified in Regional Implementation Plans.	ST1; ECT								
➤ 4.1.4. Develop a plan for prioritizing and addressing the survey design improvement recommendations in the 2017 MRIP Review by NASEM.	ESC; MRIP LT; ST1; CT								
➤ 4.2.1. Provide technical support for the program through hiring staff highly qualified in survey and mathematical statistics disciplines, and maintain peer-accepted external consultants.	ST1								
➤ 4.2.2. Increase staff expertise in survey statistics, survey operations, statistical software, new technologies, and survey management through trainings and other development opportunities.	ST1								
➤ 4.2.3. Publish research results in peer-reviewed journals and organize and/or participate in scientific symposia.	ST1; ECT								
➤ 4.3.1. Seek independent reviews of current and proposed survey designs, estimation methods, and data collection technologies that are on the MRIP Certification Track.	OT; ST1								
➤ 4.3.2. Conduct periodic regional reviews of data programs to identify potential sources of bias and errors.	RITs; ST1								
Goal 5—Operate Collaboratively		2017	2018	2019	2020	2021	2022	2023	
➤ 5.1.1. Conduct periodic reviews to ensure that partners are adequately represented and actively participating on the various MRIP teams.	CET; Contractor								
➤ 5.1.2. Assess partners' sense of ownership in MRIP (i.e., do partners consider themselves partners?).	CET; Contractor								
➤ 5.1.3. Periodically review management structure to address evolving program functions and priorities.	ESC; LT								
➤ 5.1.4. Evaluate options to enhance recreational fisheries stakeholders' participation in MRIP advisory structure.	ESC; LT								
➤ 5.1.5. Expand MRIP collaborations, including adding additional experts in survey design and communications to MRIP consultant team.	ST1								
➤ 5.1.6. Revise program management and team structure periodically to assure full partner engagement, based on results of Strategy 5.1 reviews and provisions of Regional Implementation Plans.	ESC								
➤ 5.2.1. Develop Regional Implementation Plans that include R&D priorities for developing and certifying new methods that address partner needs.	RITs; ESC; OT								
➤ 5.2.2. Attend and actively participate in FINs and FIN partner meetings when data needs are being discussed.	ST1								

Tactics	Responsible Entities	Timeline						
		2017	2018	2019	2020	2021	2022	2023
Goal 5—Operate Collaboratively (continued)		2017	2018	2019	2020	2021	2022	2023
➤ 5.2.3. In regions that do not have a FIN, create and maintain ad hoc Regional Implementation Teams.	ST1							
➤ 5.2.4. Annually specify national priority-setting criteria for providing support for needs identified in the Regional Implementation Plans.	OT; ST1; LT		◆	◆	◆	◆	◆	◆
➤ 5.3.1. Evaluate and, as appropriate, support and enable delegating responsibility of survey operations to regions, based on standards to maintain data consistency and comparability.	ST1							
➤ 5.3.2. Conduct evaluation of cost/benefits of centralized vs. regionalized catch and effort estimation.	ST1; RITs							◆
➤ 5.4.1. Respond to the requirements of the Modern Fish Act.	ST1							
Goal 6—Meet Program Resources and Funding Needs		2017	2018	2019	2020	2021	2022	2023
➤ 6.1.1. Develop and share criteria for priority-setting and decision-making on funding allocation to research and survey implementation.	OT; ST1; LT; ESC							◆
➤ 6.1.2. Use Regional Implementation Plans to develop a national inventory of partner needs and associated costs (see Goal 5—Operate Collaboratively).	ST1; LT					◆		
➤ 6.1.3. Explore opportunities to expand program support through leveraging funding and capability of partner and stakeholder programs, including NOAA programs.	ST1; RITs							
➤ 6.2.1. Provide a cost-benefit analysis of funding level options for primary stakeholders (i.e., NOAA/NMFS).	ST1		◆					
➤ 6.2.2. Advocate for meeting funding needs during annual DOC/NOAA budget opportunities.	ST1							
➤ 6.2.3. Utilize relationships with Interstate Fishery Management Commissions to help identify resources for recreational data collection.	ST1; RITs		◆					
➤ 6.2.4. Document partner contributions for funding data collection efforts.	RITs					◆		
➤ 6.2.5. Create a compelling narrative on MRIP and partner success stories to share with key stakeholders.	CET							
➤ 6.3.1. Administer Modern Fish Act investment funds.	ST1							



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