



# REPORT TO CONGRESS

## Section 201(a) of the Modernizing Recreational Fisheries Management Act of 2018

---

*Developed pursuant to: The Modernizing Recreational Fisheries Management  
Act of 2018 (Public Law 115-405)*

Chris Oliver, Assistant Administrator for Fisheries  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration

Neil A. Jacobs, Ph.D.  
Assistant Secretary of Commerce for Environmental Observation and Prediction,  
Performing the Duties of Under Secretary of Commerce for Oceans and Atmosphere

THE MODERNIZING RECREATIONAL FISHERIES MANAGEMENT  
ACT OF 2018 (PUBLIC LAW 115-405) INCLUDED THE FOLLOWING LANGUAGE

**SEC. 201. COOPERATIVE DATA COLLECTION.**

*(a) Improving Data Collection And Analysis.—Section 404 (16 U.S.C. 1881c) is amended by adding at the end the following:*

*“(e) Improving Data Collection And Analysis.—*

*“(1) IN GENERAL.—Not later than 1 year after the date of enactment of the Modernizing Recreational Fisheries Management Act of 2017, the Secretary shall develop, in consultation with the science and statistical committees of the Councils established under section 302(g) and the Marine Fisheries Commissions, and submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Natural Resources of the House of Representatives a report on facilitating greater incorporation of data, analysis, stock assessments, and surveys from State agencies and nongovernmental sources described in paragraph (2), to the extent such information is consistent with section 301(a)(2), into fisheries management decisions.*

*“(2) CONTENT.—In developing the report under paragraph (1), the Secretary shall—*

*“(A) identify types of data and analysis, especially concerning recreational fishing, that can be used for purposes of this Act as the basis for establishing conservation and management measures as required by section 303(a)(1), including setting standards for the collection and use of that data and analysis in stock assessments and surveys and for other purposes;*

*“(B) provide specific recommendations for collecting data and performing analyses identified as necessary to reduce uncertainty in and improve the accuracy of future stock assessments, including whether such data and analysis could be provided by nongovernmental sources; and*

*“(C) consider the extent to which the acceptance and use of data and analyses identified in the report in fishery management decisions is practicable and compatible with the requirements of section 301(a)(2).”*

THE REPORT RESPONDS TO THIS CONGRESSIONAL REQUEST.

## TABLE OF CONTENTS

		Page
I.	Executive Summary	5
II.	Introduction	5
III.	Types of Data and Analysis Used in Fishery Management	6
IV.	The Inclusion of State and Nongovernmental Sources	8
	A. Regional Peer Review Programs	8
V.	Improving Accuracy and Precision of Data and Stock Assessments	8
VI.	Best Scientific Information Available as Basis for Fishery Management	10
	A. National Standard 2 Guidelines	10
	B. Stock Assessment Improvement Plan (SAIP) Recommendations	12
	C. Citizen Science Guidance	12
	D. Marine Recreational Information Program (MRIP)	13
VII.	Recommendations	14

## I. Executive Summary

This report responds to language in Section 201(a) of the Modernizing Recreational Fisheries Management Act of 2018 on facilitating greater incorporation of data, analysis, stock assessments, and surveys from state agencies and nongovernmental sources. The report describes basic data and analyses used in fisheries stock assessments and the programs used to collect that data, including state and nongovernmental sources. It describes the current guidance on scientific quality in fisheries management in order to ensure the best scientific information available. This includes the National Standard 2 guidelines, other guidance documents, and policy and procedural directives related to recreational surveys. Finally, the report makes two sets of recommendations: one set describes the scientific standards and processes external entities can coordinate with to consider inclusion of their data, and the other includes recommendations for the National Oceanic and Atmospheric Administration (NOAA) and the Councils on outreach and communication that can facilitate greater incorporation of data from external sources.

## II. Introduction

Section 201(a) of the Modernizing Recreational Fisheries Management Act of 2018 (Modern Fish Act), as excerpted below, requires this report to Congress that addresses improvements in and analysis of data collections by states and nongovernmental organizations.

### **SEC. 201. COOPERATIVE DATA COLLECTION.**

(a) Improving Data Collection And Analysis.—Section 404 (16 U.S.C. 1881c)<sup>1</sup> is amended by adding at the end the following:

“(e) Improving Data Collection And Analysis.—

“(1) IN GENERAL.—Not later than 1 year after the date of enactment of the Modernizing Recreational Fisheries Management Act of 2017, the Secretary shall develop, in consultation with the science and statistical committees of the Councils established under section 302(g) and the Marine Fisheries Commissions, and submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Natural Resources of the House of Representatives a report on facilitating greater incorporation of data, analysis, stock assessments, and surveys from State agencies and nongovernmental sources described in paragraph (2), to the extent such information is consistent with section 301(a)(2), into fisheries management decisions.

“(2) CONTENT.—In developing the report under paragraph (1), the Secretary shall—

“(A) identify types of data and analysis, especially concerning recreational fishing, that can be used for purposes of this Act as the basis for establishing conservation and management measures as required by section 303(a)(1), including setting standards for the collection and use of that data and analysis in stock assessments and surveys and for other purposes;

“(B) provide specific recommendations for collecting data and performing analyses identified as necessary to reduce uncertainty in and improve the accuracy of future stock assessments, including whether such data and analysis could be provided by nongovernmental sources; and

---

<sup>1</sup> [https://uscode.house.gov/view.xhtml?req=\(title:16%20section:1881c%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:16%20section:1881c%20edition:prelim))

“(C) consider the extent to which the acceptance and use of data and analyses identified in the report in fishery management decisions is practicable and compatible with the requirements of section 301(a)(2).”

The NOAA National Marine Fisheries Service (NMFS) has previously developed numerous documents that provide scientific guidance on standards for data, analysis, stock assessments, and surveys in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA). National Standard 2 of the MSA (Section 301(a)(2)) requires that conservation and management measures be based on the best scientific information available. In particular, the National Standard 2 guidelines, described later in this document, provide standards for determining that fishery management is based upon the best scientific information available. This report describes current practice and guidance on the subject, and recommends further actions to streamline the incorporation of non-agency data into analyses and assessments.

### **III. Types of Data and Analysis Used in Fishery Management**

NMFS uses a wide variety of data in stock assessments. Major categories of data include catch, abundance, biological, ecosystem, and socioeconomic data. Data sources also can be categorized into fishery-dependent data collected in the course of fishing operations, and fishery-independent data collected from non-fishing surveys. In addition, NMFS has many cooperative data collection programs that coordinate and facilitate data collection in partnership with state agencies and the fishing industry. Fishery-dependent data are collected as part of commercial, recreational, or subsistence/cultural/tribal fishery activities. For many stocks, these data provide information on the catch (i.e., the landings, catch rates, and bycatch of the fishery), fishing effort, and the biological composition of the catch (i.e., age, size, sex, and species). Fishery-independent data are collected using standardized scientific surveys, which use consistent methods over space and time to maintain objectivity and obtain an accurate perception of wild fish stock dynamics. These data include abundance, distribution, and demographics of fish stocks in their natural environments. NOAA has invested heavily in fishery-dependent and fishery-independent data collection in order to produce long time series of information from numerous sources, which can be used in stock assessments. The following sections briefly describe these data types, along with important types of related analyses.

Catch: Catch refers to the removals of fish of a given stock (or stock complex) due to fishing. Total catch is an important component of all stock assessments because it indicates the scale of fishing mortality imposed on a stock by commercial, recreational, and tribal fishing efforts (where applicable). Catch monitoring is also important for managers for, among other things, annual catch limits under the MSA.

Commercial sources of catch data include reports from ports, markets, and dealers; observer programs; vessel monitoring systems; and self-reports (including logbooks, trip tickets, and dealer reports). Generally, commercial catch is measured as a census of landings receipts, combined with estimates of at-sea discards from observers covering a subset of the fishing trips. Recreational sources of catch and effort data are provided through the Marine Recreational Information Program (MRIP), the national Federal-state-regional partnership data collection program for recreational data (with the exception of Alaska and Texas, which use similar data

collection tools to estimate recreational harvest). To estimate the amount of recreational fishing effort in a region, MRIP conducts phone or mail surveys of recreational fishermen. Additionally, in-person shore-side surveys (called “intercept surveys”) are conducted to estimate the catch and effort associated with individual trips. Finally, multiplying total effort estimated from the phone/mail surveys by the estimated average catch/effort for each trip provides estimates of the total recreational catch. Different methods involving on-site collection of both effort and catch are used on the Pacific coast, and self-reporting of catch and effort is used in some for-hire fisheries and specialized applications.

Abundance: Data on stock abundance over time are important for evaluating a stock’s response to fishing and other factors. Stock assessments that do not include abundance data are considered data-limited. Abundance data may be relative (e.g., percent change in stock size over time) or absolute (total) abundance (e.g., measures of stock size in terms of total numbers or weight). When available, absolute abundance estimates are preferred, mainly because they provide a solid foundation for stock assessment analyses by anchoring the assessment model at a scale that reflects actual stock biomass. Fishery-dependent catch per unit effort can represent relative changes in fish abundance, but with less confidence than fishery-independent survey data, due to changes in regulations and industry fishing methods over time. In other words, catch rates resulting from targeted fishing are related to fish stock abundance as well as decisions on where, when, and how to fish. With fishery-independent scientific surveys, catch rates are more directly related to fish stock abundance.

Biological: Biological samples of fish collected to support stock assessments can provide information on age and growth, length, weight, sex, reproduction (e.g., maturity and fertility or fecundity), genetic information, and natural mortality (i.e., mortality not caused by fishing). Fish samples are collected from both fishery-dependent and fishery-independent sources. This information can be used to determine stock structure (i.e., the spatial boundaries of a stock) and to evaluate whether the definition for a managed stock is consistent with the biological stock.

Ecosystem and Socioeconomic: Other types of data include information about ecosystem and socioeconomic dynamics. For instance, fluctuations in ecosystem productivity directly influence fish stock productivity, and the location and effectiveness of fishing may be influenced by changing ecosystems, market dynamics, and fishing strategies. Thus, as we continue to improve our understanding of the connections between fish, fisheries, and their ecosystems, a clear opportunity emerges to improve assessments by expanding their scope to incorporate important ecosystem and socioeconomic connections.

Analyses: Stock assessment analyses incorporate data from a variety of sources, including fisheries, surveys, and biological studies, into population models to characterize the status of a fish stock with respect to overfishing and overfished limits, and to provide catch and stock forecasts. These forecasts are used by the Councils’ Scientific and Statistical Committees (SSC) as they provide advice to their Councils on overfishing limits and acceptable biological catch. The Councils are responsible for developing Annual Catch Limits (ACLs) that may not exceed the fishing level recommendations of their SSCs; the mechanisms for specifying ACLs are approved and implemented by NMFS.

Although stock assessments are the primary analyses used to determine catch limits, other forms of analysis may inform managers, including those providing information about stock structure, range, and productivity, socioeconomic studies on fishing patterns and behavior, and economic impacts of management decisions.

#### **IV. The Inclusion of State and Nongovernmental Sources**

The current data collection process for inclusion of state and nongovernmental data into stock assessments is sophisticated, transparent, and effective. State and nongovernmental data are frequently incorporated into fisheries management decisions through cooperative data collection programs, such as the Fishery Information Networks, MRIP state supplemental surveys, Research Set-Aside programs (in the Northeast and Mid-Atlantic), or cooperative fishery-independent survey programs such as the Southeast Area Monitoring and Assessment Program. Additionally, datasets from non-Federal sources, most frequently those collected by state agencies, can be and are incorporated into stock assessments. Some regions have data workshops, during which different institutions and stakeholders collaboratively review numerous data sources to consider for inclusion in stock assessments. In other regions, states or nongovernmental entities may submit their data to the stock assessment process for consideration. In all circumstances, all data (Federal and non-Federal) are subject to a regional review process to evaluate their potential inclusion in a stock assessment.

##### **A. Regional Peer Review Programs**

Each Council and their regional partners (i.e., Science Centers, Regional Offices, Interstate Commissions, and others) have established peer review processes for their stock assessments that comply with National Standard 2. For federally managed stocks (and certain stocks managed by Interstate Commissions), the regional review processes are managed under regional entities, such as the Southeast Data Assessment and Review, Stock Assessment Workshop/Stock Assessment Review Committee, Stock Assessment Review, Western Pacific Stock Assessment Review, and North Pacific Plan Team stock assessment review process. These processes are described in NMFS' Notice of Regional Peer Review Processes, 81 Fed. Reg. 54561 (August 16, 2016).<sup>2</sup> The Regional Fishery Management Councils, in partnership with the Science Centers, use these regional processes in combination with their Scientific and Statistical Committees to ensure that the best scientific information available is being used in support of fishery management. In all cases, review meetings are announced publicly and open to the public.

#### **V. Improving Accuracy and Precision of Data and Stock Assessments**

NMFS and its partners recognize that improvements can always be made to its scientific and management processes, including the incorporation of data from our state, academic, and other

---

<sup>2</sup> Available at <https://www.federalregister.gov/documents/2016/08/16/2016-19522/magnuson-stevens-act-provisions-national-standard-2-scientific-information-regional-peer-review>. MSA Section 302(g)(1)(E) authorizes NMFS and each Council to establish a peer review process for scientific information used to advise the Council about the conservation and management of fisheries. The National Standard 2 guidelines provide that NMFS will announce establishment of such a peer review process and the August 2016 notice fulfilled that requirement.

nongovernmental partners. Data collection is an essential component of the stock assessment enterprise, and is the largest portion of NMFS' scientific budget. Despite the high-quality data collection and monitoring programs that NMFS and its partners currently operate, additional data collected by states or nongovernmental entities can improve assessments, provided the data meet scientific standards, are subject to the regional stock assessment development and review process from the start and, if deemed appropriate for inclusion via this process, can be formatted in accordance with stock assessment modeling requirements. Increased use of nongovernmental data can provide cost efficiencies to NMFS, may improve stock assessments, and will facilitate increased transparency, communication, and engagement with and by partners.

NMFS has improved the incorporation of additional nongovernmental data sources into stock assessments. The most recent update to the Stock Assessment Improvement Plan (SAIP), "Implementing a Next Generation Stock Assessment Enterprise"<sup>3</sup>, includes recommendations (see SAIP Recommendations below) related to data collection, including collecting more data, especially in cost-efficient ways that can include the use of new technologies as well as the use of partnerships. The SAIP includes recommendations on maintaining data collection programs, expanding the use of new technologies, and expanding partnerships. For example, partnerships with industry, state, or academic partners to collect scientific information can help augment and fill gaps in survey coverage. The agency is currently implementing the recommendations of the SAIP.

NMFS has also improved recreational catch estimation based on strategic external reviews of its programs. MRIP was originally established in 2008 to address the recommendations in the National Research Council's 2006 *Review of Recreational Survey Methods*<sup>4</sup> for improvements to earlier surveys designed to produce statistics describing marine recreational fishing catch and effort nationally. MRIP's Strategic Plan<sup>5</sup>, adopted in 2017, maintains the program's commitment to continuous improvement of survey designs and results, including strategies and tactics that address the following goal:

"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.*"

The tactics that accompany Goal 4 include seeking periodic "independent reviews of current and proposed survey designs, estimation methods, and data collection technologies that are on the MRIP Certification Track." NMFS has established a framework<sup>6</sup> for addressing the recommendations that resulted from the 2006 NRC review and a more recent 2017 review of MRIP by the National Academies of Science, Engineering, and Medicine, and will be reporting to Congress on progress, as required by Section 201(b) of the Modernizing Recreational Fisheries Management Act of 2018.

---

<sup>3</sup> <https://spo.nmfs.noaa.gov/sites/default/files/TMSPO183.pdf>

<sup>4</sup> <http://dels.nas.edu/Report/Review-Recreational-Fisheries-Survey-Methods/11616>

<sup>5</sup> <https://www.fisheries.noaa.gov/resource/document/mrip-strategic-plan-2017-2022>

<sup>6</sup> <https://www.fisheries.noaa.gov/resource/document/mrip-framework-addressing-2017-national-academies-recommendations>

## **VI. Best Scientific Information Available as Basis for Fishery Management**

### **A. National Standard 2 Guidelines**

MSA National Standard 2 (NS2) states that "... conservation and management measures shall be based upon the best scientific information available (MSA Section 301(a)(2), 16 U.S.C. § 1851(a)(1))." Under NS2, NMFS holds its fisheries science and management enterprise to the highest scientific standards, including the use of external peer review and strong reliance on the Councils' SSCs in the management process. Guidelines for NS2 on the processes and standards to ensure science quality were completed in 2013. NS2 Guidelines (50 C.F.R. § 600.315) are not overly prescriptive, but lay out widely accepted criteria for evaluating best scientific information available: inclusiveness, objectivity, transparency, timeliness, verification, validation, and peer review.

NS2 Guidelines acknowledge the high-quality standards for data collection, as well as the need to address data gaps: "Scientific information that is used to inform decision making should include an evaluation of its uncertainty and identify gaps in the information." A few selected sections that relate to data standards include:

- **Transparency:** "Scientific information products should describe data collection methods, report sources of uncertainty or statistical error, and acknowledge other data limitations. Such products should explain any decisions to exclude data from analysis... . Finally, such products should openly acknowledge gaps in scientific information."
- **Timeliness:** "Sufficient time should be allotted to audit and analyze recently acquired information to ensure its reliability. Data collection methods are expected to be subjected to appropriate review before providing data used to inform management decisions."
- **Verification and Validation:** "Methods used to produce scientific information should be verified and validated to the extent possible. Verification means that the data and procedures used to produce the scientific information are documented in sufficient detail to allow reproduction of the analysis by others with an acceptable degree of precision. External reviewers of scientific information require this level of documentation to conduct a thorough review."

Overall, the NS2 Guidelines allow for, and encourage, the use of nongovernmental sources of data, as long as those data undergo the same rigorous review process that ensures management measures are based on the best scientific information available (BSIA). The guidelines' section on Inclusiveness includes the following considerations: "Alternative scientific points of view should be acknowledged and addressed openly when there is a diversity of scientific thought" and "Relevant local and traditional knowledge (e.g., fishermen's empirical knowledge about the behavior and distribution of fish stocks) should be obtained where appropriate, and considered when evaluating the BSIA." Under its FMP Development section, the guidelines state: "An FMP should identify scientific information needed from other sources to improve understanding and

management of the resource, marine ecosystem, the fishery, and fishing communities.” The section also states: “The information submitted by various data suppliers should be comparable and compatible, to the maximum extent possible.”

Peer review is an important element of the NS2 Guidelines, and they adopt many of the Office of Management and Budget (OMB) peer review standards (OMB, 2004). These standards include balance in expertise, knowledge, and perspectives; lack of conflicts of interest; independence from the work being reviewed; and transparency of the peer review process. NS2 Guidelines recognize that varying degrees of independence may be required for various reviews depending on the novelty, controversy, and complexity of the review. For example, a stock assessment update that uses previously reviewed methods may be sufficiently reviewed with only regional expertise (e.g., an SSC), while a review of emerging methods or controversial topics may require a more rigorous, independent peer review process, such as those provided by the Center for Independent Experts (CIE). CIE, established in 1998, routinely provides external, independent reviews of scientific information used for policy decisions. NMFS administers a contract agreement with the CIE to implement the process for scientific review requests. The CIE process is generally used for peer reviews that require more time, resources, and a higher degree of independence than peer reviews that rely on regional expertise only. Deciding on an appropriate scope for a review involves a tradeoff analysis between the need for timely management decisions and the need for a more rigorous, time-consuming peer review of the science supporting those decisions.

As noted earlier, NMFS published an August 2016 *Federal Register* notice, which recognizes the five regional peer review processes as compliant with NS2. Each Council and its respective SSC incorporate both regional and fully independent peer reviews of their respective stock assessments. The regional peer review processes vary, though all meet NS2 requirements. These processes have mechanisms in place for reviewing and incorporating new data into assessments.

Furthermore, NMFS has published a policy directive on *NOAA Fisheries Framework for Determining that Stock Status Determinations and Catch Specifications are Based on the Best Scientific Information Available*.<sup>7</sup> This directive, which complements NS2 and the NS2 Guidelines, is intended to improve communication, coordination, and transparency and establish a mutual understanding of stock assessment results so they can be used to make stock status determinations and set catch specifications that will ultimately be approved by the agency as consistent with NS2 Guidelines, Information Quality Act, and all applicable law. The BSIA policy directive provides guidance to NMFS regions on developing a framework to ensure that management decisions are based on the best scientific information available. In addition to the regional peer review processes noticed in the August 2016 *Federal Register* notice, the frameworks should include descriptions of the stock assessment process, as well as roles throughout for each respective party (e.g., NMFS and the SSCs). Section VII. *Recommendations* provides recommended statements for including in the terms of reference for operational stock assessments, and several of these relate to reviewing decisions regarding data inclusion or exclusion.

---

<sup>7</sup> <https://www.fisheries.noaa.gov/webdam/download/90600446>

## **B. Stock Assessment Improvement Plan Recommendations**

As previously discussed, the Stock Assessment Improvement Plan (SAIP) recognizes the high-quality data standards and peer review in place in the fisheries science and management system. It also recognizes sources for improvement, including creating more partnerships to improve data collection as well as streamlining the peer review process through the formalization of research versus operational assessments. For research assessments (which include major changes to data sources or model configurations), the SAIP recommends that:

- “Stakeholder involvement is also encouraged so outside data, analyses, and ideas can be evaluated, and trust in potential changes is built from the beginning.
- New procedures, data sets, and configurations are made available to conduct new assessments, address issues with operational assessments, or make general improvements.
- For research assessments to be accepted into the next operational assessment there must be a long-term commitment to collect and provide the accepted data and methods.
- New procedures, data, and findings with application to particular stocks should be fully documented to support use and serve as reference in future operational assessments.”

The SAIP also recognizes that “On occasion, entities other than NMFS conduct assessments of Federally managed stocks. These assessments may be well integrated into the management process or outside normal procedures. Typically, external assessments are commissioned by a stakeholder either to fill a data gap that is not being addressed or to provide an alternative perspective in an ongoing assessment. External assessments can be helpful when they provide advice for stocks that cannot be assessed by NMFS in a timely fashion, thereby assisting with the assessment workload, or when they contribute additional analyses for consideration in an ongoing assessment. However, external assessments can also be disruptive, especially when they are provided late in the management process or without sufficient documentation to critically evaluate the approach. In these cases, the assessment tends to compete or conflict with the Federal stock assessment without being subject to an equivalent level of peer review. As the contribution of external assessments continues to increase, many Councils have developed, or are developing, protocols for including these assessments in the management process.”

## **C. Citizen Science Guidance**

Other types of outreach and collaboration programs generate data for use in science, including cooperative research, indigenous and local ecological knowledge, and citizen science. The Crowdsourcing and Citizen Science Act (2017) provides authority for federal agencies to conduct citizen science projects to advance agency missions. NOAA

has several citizen science programs and projects ranging from weather forecasting, to mapping the seafloor, to supporting living marine resource management. Recognizing the increasing potential for citizen science to support NOAA’s scientific missions the NOAA Research Council designated citizen science a NOAA Science and Technology Focus area in January 2020 and a draft NOAA Citizen Science Strategy was released for public comment in August 2020.

In 2018 the NOAA Science Advisory Board published a report on “Potential for Citizen Science in Support of Data Needs for Ecosystem-Based Science.” This report recognized that “data from CS programs can be integrated with information from surveys, cruises and sensors deployed by agencies and academic scientists. However, there is a need for careful program design, data review, and quality control to ensure that citizen science efforts produce valuable data that is accepted by the mainstream scientific community.”

#### **D. Marine Recreational Information Program**

The Marine Recreational Information Program (MRIP) has been expanded recently to include regionally specialized surveys conducted by state partners. To ensure recreational catch and effort data are consistent across the nation’s fisheries and derived from methods that are scientifically robust, MRIP established a certification process for catch and effort survey methods that has been formalized recently in the NMFS Policy Directive 04-114 and Procedural Directive 04-114-02.<sup>8</sup> Survey and estimation methods meet a shared set of standards, undergo independent peer review, and receive approval from the MRIP Executive Steering Committee and NMFS leadership in order to receive certification. Once certified, new surveys are eligible for MRIP funding and technical support, and the estimates of catch and effort that are produced by certified survey designs can then be integrated into the process that ensures management decisions are based on the BSIA. A certification review can also be requested by a sponsor for legacy surveys already in use for which recommendations on survey design improvements are being sought or changes to survey implementation are being considered.

Once a new or modified recreational survey design has been certified, a transition plan prepared and executed pursuant to Policy Directive 04-114 and Procedural Directive 04-114-01 is usually required before data can be incorporated into the science and management processes. The transition plan may involve benchmarking the new design alongside established surveys, and the development and review of a calibration method. These steps enable incorporation of estimates from new survey methods into an existing time series of estimates produced by a general survey or a survey design being replaced. Thus, the process of incorporating recreational catch data from new state or nongovernmental surveys into existing Federal applications is a two-step process: first, the design of the survey is reviewed and certified, then a transition plan is completed and executed, which may include the development of a calibration (see Directives 04-114, 04-114-01, and 04-114-02 for details).

---

<sup>8</sup> <https://www.fisheries.noaa.gov/national/laws-and-policies/science-and-technology-policy-directives>

In addition to the current general surveys outlined above, MRIP has investigated the suitability of mandatory, voluntary, and opt-in mobile applications by which anglers can self-report data for consideration in stock assessments. Findings and recommendations to date are included in NMFS' Report to Congress on electronic reporting options, and in a new report on how electronic technologies may improve the agency's estimates of marine recreational catch.<sup>9,10</sup>

## VII. Recommendations

The current fisheries scientific and management system can sufficiently address and incorporate state agency and nongovernmental data sources. Provided that these data, analyses, assessments, and surveys undergo the same rigorous scientific review as governmental products, they currently can be, and are, incorporated into fisheries management decisions. Nonetheless, NMFS recognizes that there could be greater incorporation and there is sometimes a perception that external sources are ignored or not considered. The following recommendations are intended to improve incorporation of state and nongovernmental data into Federal fish stock assessments:

### For State or Nongovernmental Partners

1. To the extent practicable, acceptable assessment data should be based on a sampling design that has been subject to and deemed adequate via the regional stock assessment review process. The peer review should consider and ensure that the sampling design:
  - Adequately covers a stock's range.
  - Has a time-series long enough to sufficiently characterize a stock's abundance trend (when providing abundance estimates is the intent).
  - Includes a commitment to maintain data collection for the foreseeable future.

NOAA recognizes the usefulness of directed studies in informing assessments, including answering specific questions or addressing uncertainty. However, for integration of data sets on catch or stock abundance over time into assessments, meeting the above criteria can help facilitate that process.

2. Partners designing scientific studies should reach out early and often to stock assessment staff. Doing so allows assessment staff and external partners time to work together on the sampling strategy and outputs that are appropriate for inclusion in a stock assessment and publication in publicly available federal data systems. Additionally, early collaboration facilitates increased stakeholder engagement, and ensures that the data are given equal consideration in the assessment and review process.

---

<sup>9</sup> <https://www.fisheries.noaa.gov/feature-story/noaa-fisheries-explores-electronic-reporting-supplemental-source-recreational-fishing>

<sup>10</sup> <https://www.fisheries.noaa.gov/webdam/download/97231493>

3. To the extent practicable, data and analyses should be delivered in the format most appropriate for input into assessments models or management systems, and for publishing in publicly available federal data systems.

For NMFS and Fishery Management Councils (and their SSCs)

1. Develop and document a clear process for reviewing new data prior to incorporation into an assessment, particularly a new assessment or a research/benchmark assessment. This process should be facilitated by the procedural directive recommending a regional BSIA framework. In many cases, new processes may not be needed because they are already part of public data review workshops (such as the SouthEast Data, Assessment, and Review). While peer review of assessments includes review of the data used, having a specific data review step prior to review of the assessment model could facilitate the consideration of new data.
2. Consider identifying a liaison at NMFS Science Centers or Councils to outreach and assist nongovernmental entities in designing studies and/or connecting those entities with the appropriate assessment staff at the appropriate steps in the assessment process for the consideration of their data. Liaisons could develop communication and outreach regarding data needs and data collection programs. This can include collaborating with cooperative research staff and grant programs, as well as integration with Council Research Priority Plans and/or Science Center Strategic Plans.
3. Capitalize on existing national grant programs directed at external partners, such as Saltonstall-Kennedy, as well as regional programs, such as the Marine Fisheries Initiative or North Pacific Research Board as venues for communicating about research and data collection programs, as well as research and data needs.
4. Where Council and SSC needs are not fully addressed in current MRIP Regional Implementation Plans, Councils and their committees should work within their membership on MRIP Regional Implementation Teams to ensure their needs are included and properly prioritized.
5. NMFS' MRIP program, working with its Transition Team, will review recent and current MRIP survey design certifications and associated transition planning (including development of calibrations) for potential process efficiency improvements and to help set expectations on the procedures to be followed for, and the timelines for completion of, future survey design certifications and their implementation.