



# MARINE RECREATIONAL INFORMATION PROGRAM

**Implementation Plan**  
**October 2008**



To help ensure the long-term sustainability of U.S. fisheries through enhanced estimates of marine recreational catch and effort, a partnership of public and private organizations is developing the Marine Recreational Information Program, an improved national system of regional surveys. This Implementation Plan outlines the history of the program, its current status, and future course.

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# Marine Recreational Information Program Implementation Plan

October 2008

The *MRIP Implementation Plan* is a joint product of the MRIP Operations, Communication and Education, and Angler Registry Teams prepared with guidance from the Executive Steering Committee. The Implementation Plan provides an update on progress to date, as well as the blueprint for putting MRIP into action. A dynamic document, the *Implementation Plan* will continue to evolve in response to the latest science and the emerging needs of fisheries managers, regulators, policy makers and stakeholders.

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# MRIP Implementation Plan

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## Executive Summary

To enhance the quality of estimates of marine recreational catch and effort in United States waters, NOAA Fisheries is developing the Marine Recreational Information Program (MRIP), an improved system of regional surveys that will replace existing marine recreational fishing data collection programs. It will provide better regional monitoring of recreational fishing participation, effort, catches, landings and releases of finfish species in marine waters and estuaries for all 50 states and the U.S. territories and Commonwealths.

The Marine Recreational Fisheries Statistics Survey (MRFSS), currently the primary source of recreational fishing statistics, was started in 1979 to collect information about recreational fisheries on a regional scale to meet the management needs of the time. Since then, fisheries management programs have become more complex and demand data at a much finer scale than current programs can provide.

In response to constituents' concerns about the quality of recreational fishing information being used in management, NOAA Fisheries requested an independent review of existing recreational data collection programs by the National Research Council (NRC) of the National Academy of Sciences in 2004. The NRC reported its findings in 2006 and made extensive recommendations for improving data collection and statistical analysis. It also recommended establishing a national registry of saltwater anglers to serve as the basis for future sampling programs. Reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), signed into law in 2007, requires NOAA Fisheries to fulfill the recommendations in the NRC report to the maximum extent practicable and to develop a program to support registering saltwater anglers by January 1, 2009.

The MRIP brings together federal, state, and interstate partners and constituents who are experts in fisheries management, survey design, statistics, and outreach to improve recreational fishing data collection. Efforts have focused on: 1) conducting research projects that address priority needs for survey improvements, 2) developing a program for the national angler registry, and 3) communicating to and involving the public in MRIP activities.

A special effort has been made to conduct regional meetings with managers, stock assessment scientists, and constituents to ensure that the needs of those who collect, use, and are impacted by the data, are understood, documented, and considered as the program advances.

The MRIP will be a system of coordinated regional data collection programs designed to address specific needs for recreational fishing information. The design of regional programs will be guided by ongoing and future research projects that will provide recommendations for modifying current survey methods and implementing new methods. These improvements will be incrementally implemented beginning in January 2009 as alternative approaches are designed and tested and will continue until the new program is fully implemented. Initial improvements will address fundamental issues identified by the NRC review, including establishment of a Federal angler registry, assessing the potential for bias in current surveys, and developing data collection standards. As these fundamental survey design and management issues are resolved, focus will shift towards meeting data users' needs for precision and resolution.

The MRIP goal is a system of surveys operating with consistent standards and sufficient flexibility to meet national, regional, and state needs and provide reliable information about recreational fishing in a timely manner to support effective and fair management.

More information and updates can be found at the MRIP website: [www.CountMyFish.noaa.gov](http://www.CountMyFish.noaa.gov).

## Introduction

NOAA Fisheries is entrusted with ensuring the long-term health and use of America's living marine resources. To meet this very direct, yet exceedingly complex charge, NOAA Fisheries must continually initiate and evaluate emerging marine science, build consensus and ensure compliance with management decisions, and balance competing needs of stakeholders with respect to such issues as access, conservation, recreation, and commerce.

Major leaps in our understanding of the complexity and interactions of marine ecosystems have occurred in recent years thanks to independent research as well as scientific study initiated and funded by NOAA Fisheries. Where it was once believed that fisheries could be effectively managed on a stock-by-stock basis, it is now clear that all management decisions must be viewed in the context of the entirety of their impacts.



In addressing and balancing stakeholder needs, NOAA Fisheries must begin with the question, "To whom do America's oceans belong?" The answer, of course, is all of us. So whether it is the New England fisherman whose family's livelihood depends on this season's catch, the recreational angler from the Midwest who enjoys an annual summer deep-water outing, the Pacific Island SCUBA shop owner who outfits tourists, the Alaskan subsistence fisherman who must provide for his family, or the coastal resident who simply appreciates the mystery and the majesty of the sea, everyone's interest must be considered and uses must be balanced against one another. In addition, NOAA Fisheries must respect

the rights and decisions of individual states, and ensure that its actions complement, not conflict with, regional, state, and local efforts.

This must occur against the backdrop of new fishing technologies; demographic trends that have more people moving to the coast; growing interest in the food and energy potential of our oceans; increasing pressure on the resources from non-fishing factors such as climate change; and the recognition of the immense value of our recreational fisheries in terms of both economic impact and cultural heritage.

It is into this context that NOAA Fisheries is implementing the Marine Recreational Information Program (MRIP). Although NOAA Fisheries is responsible for making MRIP work, the program's design relies extensively on input and commitment from partner agencies, organizations, and individuals. NOAA Fisheries believes that this inclusive approach will result in an efficient and effective data collection program that will meet the dynamic demands for recreational fishing statistics.

NOAA Fisheries envisions MRIP as a program that is part of the best and most trusted marine data collection system available. One in which people are confident in the integrity of the information they receive and in which stakeholders are engaged and empowered partners in the

data collection process. We want to ensure that the profound debates that take place about U.S. ocean policies center on the quality of the management decisions, not the quality of the data.

## **MRIP Background**

### **Existing Recreational Fishing Data Collection Programs**

Marine recreational fishing statistics have traditionally been collected through a combination of telephone and fishing access-point intercept surveys. Generally, these surveys are funded by NOAA Fisheries and conducted in cooperation with, and with supplemental funding from, interstate commissions and state natural resource agencies.

The Marine Recreational Fisheries Statistics Survey (MRFSS), initiated in 1979 as a requirement of the Magnuson Fishery Management and Conservation Act of 1976, continues to be the primary source for national recreational fishery statistics in the United States. It is currently conducted in all regions except Alaska, Texas, the Western Pacific Territories, and the U.S. Virgin Islands.

The MRFSS is based on a complementary survey design that includes a telephone survey to estimate effort and a shoreside survey to estimate catch per trip. Data from the two independent surveys are combined to estimate total fishing effort, participation, and catch by species. To demonstrate the concept: if we know a group of people took about 1000 trips and caught about 2 flounder per trip, then we can estimate they caught 2000 flounder in total. The telephone survey gives us information on trips and the shoreside survey gives us information on catch per trip. Scale this concept up to the whole coast and for all different species and you basically understand how the survey works.

The MRFSS design was originally developed to monitor all modes of marine recreational fishing (shore, private boat, charter boat, and headboat), but a new For-Hire Survey (FHS) design was later developed to provide more precise statistics on catch and effort for the charter and headboat modes. The FHS utilizes a complementary survey design that includes an access point intercept survey but differs from the MRFSS by using a vessel directory telephone survey to collect fishing effort data through random sampling of listed vessel operators. The FHS approach also includes an at-sea sampling survey of headboat fishing trips that collects direct observations and measurements of both retained and released catches. The FHS approach was implemented in the Gulf of Mexico (1998), California (2001), and the Atlantic states (2003) through the cooperative efforts of NOAA Fisheries, the interstate commissions, state agencies, and the fishing industry.

In recent years, the MRFSS approach was replaced on the Pacific Coast by a series of state surveys that are administered by the Pacific Recreational Fisheries Information Network (Pacific RecFIN) with partial funding from NOAA Fisheries. California now conducts a set of surveys that comprise the California Recreational Fisheries Survey (CRFS) Program. The CRFS includes a Party Charter Survey (PCS) that uses a variation of the FHS approach, a new angler directory telephone survey that collects fishing effort data from a sample of angler license holders, and a set of access-point surveys that collect both effort and catch-per-unit-effort data. In Oregon and Washington, ocean boat fishing effort and catch are monitored through the on-site

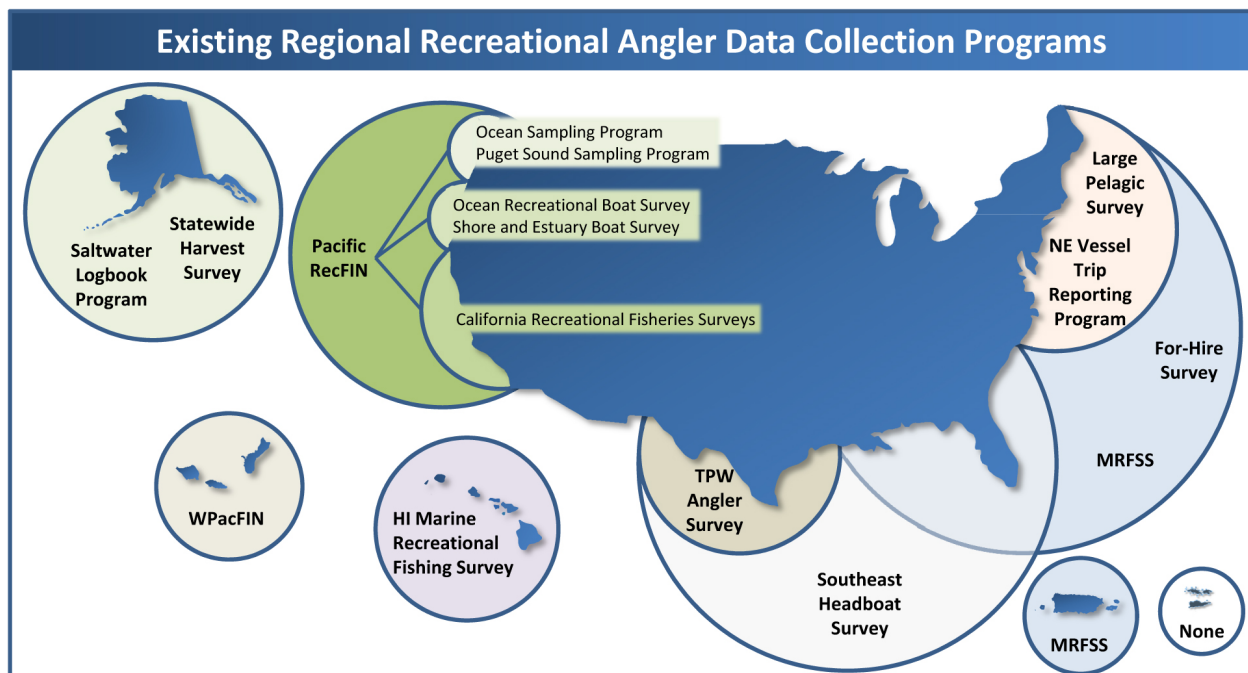


sampling surveys of the Oregon Ocean Recreational Boat Survey (ORBS) and the Washington Ocean Sampling Program (OSP). Oregon's Shore and Estuary Boat Survey (SEBS) and Washington's Puget Sound Sampling Program (PSSP) provide the only coverage of non-ocean fishing in those states, and both of these approaches have utilized access-point surveys in conjunction with new angler license frame telephone surveys.

There are a number of more specialized surveys conducted by NOAA Fisheries and the states. The Large Pelagics Survey (LPS) was started by a number of Atlantic states and later developed by NOAA Fisheries as a means of monitoring off-shore fishing effort and catch for highly migratory species. The Southeast Headboat Survey (SEHS) is a logbook program for monitoring fishing on headboats from North Carolina to Texas. A number of states, including South Carolina, Maryland, and Florida, conduct logbook data collections for monitoring certain segments of the for-hire fishery.

Marine recreational fishing surveys in Alaska and Texas are administered by state natural resource agencies. Recreational fishing surveys in the Western Pacific Territories are conducted by the territorial governments with support from the Western Pacific Fisheries Information Network (WPacFIN) and the NMFS Pacific Islands Fisheries Science Center. Appendix A provides an overview of regional data collection programs.

The MRFSS was originally developed to estimate annual fishing effort and catch by species on a regional scale, but demands for recreational fishing statistics have changed considerably since the inception of the survey. Fisheries management and stock assessment practices now require more timely and accurate estimates at finer geographic and temporal scales, challenging use of estimates generated by the current program. In addition to the evolving demands for recreational fishing data, there has been widespread criticism of the MRFSS from recreational fishing stakeholders as fishery managers respond to the impact of recreational fishing on stock sizes by regulating recreational fisheries through seasonal closures and size and catch limits.





## **A New Direction**

MRIP is being designed to provide better regional monitoring programs for recreational, or non-commercial, fishing participation, fishing effort and catches, landings and releases of finfish species in marine waters and estuaries for all of the 50 states and the U.S. territories and Commonwealths.

Initiated in 2006, MRIP is a collaborative, multi-institutional effort to develop and implement an improved recreational fisheries statistics program. The new program will be a system of surveys that provides the best possible scientific information for use in management of the Nation's marine recreational fisheries.

Due to the dynamic nature of fisheries and fisheries management practices, MRIP must be:

- Flexible enough to be updated, modified, expanded, or contracted to meet specific regional or local informational needs;
- Robust enough to provide the most precise and least biased information possible;
- National in scope but regionally specific, recognizing that each region (Atlantic Coast, Gulf Coast, Pacific Coast, Pacific Islands, Alaska, and the Caribbean) has unique informational needs and data collection issues; and
- Be inclusive and transparent, providing scientists, managers, and stakeholders an opportunity to participate in its development and use.

## **Development of MRIP**

### **National Research Council Review of Recreational Fisheries Survey Methods**

In response to the growing demand for an improved recreational fishing data collection program, NOAA Fisheries commissioned the National Research Council (NRC) of the National Academies of Science to conduct a high level, scientific review of current survey methods used by NOAA Fisheries and its partners to monitor recreational fishing catch and effort. Specifically, the NRC was asked to:

- Assess existing surveys and their suitability in monitoring effort and catch in the shore-based, private boat, and for-hire boat recreational fisheries;
- Evaluate how well these methods were providing the quality of information required to support accurate stock assessments and responsible fisheries management decisions; and
- Recommend improvements to ensure more accurate and precise estimates of recreational effort and catch.

The NRC's Ocean Studies Board formed a 10-member committee of experts in sampling design and statistics to conduct the requested review independent of NOAA Fisheries. The committee held a series of five public meetings in 2005 to gather information about the current survey programs in each region. A final report of their findings (*Review of Recreational Fisheries Survey Methods*) was published in April 2006. It identified a number of potential problems with the sampling and estimation designs used in current surveys, and questioned the adequacy of

existing surveys in providing the statistics needed to support stock assessments and the kinds of fishery management decisions required by current law and practice. The report recommended that current surveys be redesigned to improve their effectiveness, the appropriateness of their sampling procedures, their applicability to various kinds of management decisions, and their usefulness for social and economic analyses.

The following table summarizes significant NRC findings and how the MRIP is addressing them:

NRC Recommendation	MRIP Response
<ul style="list-style-type: none"> <li>Reduce potential bias by ensuring estimation procedures are consistent with sample designs.</li> </ul>	<ul style="list-style-type: none"> <li>✓ MRIP partners are reviewing and adjusting current sampling and estimation methodologies to ensure that procedures are consistent, statistically valid and unbiased.</li> </ul>
<ul style="list-style-type: none"> <li>Establish a comprehensive, universal sampling frame of saltwater anglers.</li> </ul>	<ul style="list-style-type: none"> <li>✓ NOAA Fisheries is developing a Saltwater Angler Registry, with a final rule to be released on or about November 1, 2008.</li> </ul>
<ul style="list-style-type: none"> <li>Use dual-frame sampling procedures wherever possible to reduce bias.</li> </ul>	<ul style="list-style-type: none"> <li>✓ MRIP partners are implementing a dual-frame pilot survey in North Carolina and the Gulf of Mexico to increase the efficiency and coverage of angler effort surveys.</li> </ul>
<ul style="list-style-type: none"> <li>Achieve a greater degree of standardization among the state surveys and the centralized MRFSS.</li> </ul>	<ul style="list-style-type: none"> <li>✓ MRIP partners have created an MRIP Data Management and Standards system to document and analyze existing data collection programs with the goal of making recommendations for minimum data elements and standards.</li> </ul>
<ul style="list-style-type: none"> <li>Address under-coverage of private-access and nighttime fishing and develop procedures to better account for these fishing activities.</li> </ul>	<ul style="list-style-type: none"> <li>✓ MRIP partners are assessing potential bias associated with under-coverage of these fisheries; testing assumptions about differences in catch rates; and assessing impact of potential biases on final catch and effort estimates.</li> </ul>
<ul style="list-style-type: none"> <li>Designate for-hire fisheries as commercial fisheries and conduct for-hire surveys and reporting separately from those for private anglers.</li> </ul>	<ul style="list-style-type: none"> <li>✓ MRIP partners are conducting an independent review of various methods used to assess catch and effort in the for-hire sector. They are also developing and testing an electronic reporting program in Puerto Rico.</li> </ul>
<ul style="list-style-type: none"> <li>Explore alternate methods of independently verifying survey results and trends.</li> </ul>	<ul style="list-style-type: none"> <li>✓ NOAA Fisheries is working with partners to identify proposals for pilot projects to capture different types of corroborative data.</li> </ul>
<ul style="list-style-type: none"> <li>Get better information about catch not brought back to the dock for inspection.</li> </ul>	<ul style="list-style-type: none"> <li>✓ MRIP partners are identifying and assessing alternative methods to collect more reliable and detailed information on released catch.</li> </ul>

### **Magnuson-Stevens Reauthorization Act**

In January 2007, President Bush signed a bill into law reauthorizing the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The Act directs the Department of Commerce to implement an improved recreational fisheries survey program by January 1, 2009. To promote collaboration with partner agencies and recreational fishing stakeholders, MSA stipulates that the improved survey program must be developed “in consultation with representatives of the recreational fishing industry and experts in statistics, technology, and other appropriate fields”, and must “improve the quality and accuracy of information generated ... with a goal of achieving acceptable accuracy and utility for each individual fishery”. MSA further states that the improved program must also “take into consideration and, to the maximum extent feasible, implement the recommendations of the National Research Council in its report *Review of Recreational Fisheries Survey Methods* (2006)”. Unless alternate methods are deemed to be more efficient and effective, the survey program must, to the extent possible, include the following:

1. An adequate number of dockside interviews to assure accurate statistics;
2. Surveys of participation and effort that utilize Federal or State registries of anglers and vessels;
3. Collection and analysis of vessel trip report data from for-hire fishing vessels;
4. Development of a weather corrective factor to apply to catch and effort statistics; and,
5. Establishment of an independent committee “composed of recreational fishermen, academics, persons with expertise in stock assessments and survey design, and appropriate personnel from the National Marine Fisheries Service” to review data and statistics, identify deficiencies, and determine appropriate correction measures.

The MSA amendment also requires the Department to create a federal, regionally based registry program for recreational fishing by January 2009. The Act specifies that the registry must include all anglers who engage in recreational fishing in the Exclusive Economic Zone (EEZ), for anadromous species, or for Continental Shelf fishery resources beyond the EEZ. The registry program must obtain identification and contact information that is suitable for use in conducting recreational fishing surveys.

### **Denver Recreational Fisheries Statistics Requirements Workshop**

Both the NRC’s scientific review and enabling legislation of the MSA cleared the way for NOAA Fisheries to take a fresh look at the methods used to collect recreational fishing data. One of the first steps taken in developing the new program was to assess data needs of the users and determine how different regional requirements might affect design of regional survey programs.

NOAA Fisheries convened a three-day workshop on recreational fishery statistics requirements in Denver, CO on September 5-7, 2006. The workshop was a collaborative effort among regional fishery managers, stock assessment scientists, and survey statisticians to examine recreational fishing information needs. Representatives of state and federal agencies, interstate marine fisheries commissions, and NOAA’s Marine Fisheries Advisory Committee (MAFAC) attended the workshop.

Participants were divided into work groups to discuss the following topics:

- Management and stock assessment practices
- Data needs for stock assessment and management
- Methodological improvements
- Balancing national and regional data requirements
- Developing an outreach and communication strategy

Recommendations in the proceedings of the workshop are an extensive menu of the needs for improving data collection programs important for national and regional needs. They include:

- Comprehensive registry of all saltwater anglers
- Improving spatial and temporal resolution
- Better data on extent and disposition of discarded catch
- More timely delivery of data to management entities
- Better assessment of effort and landings from private access points
- Better alignment of effort and intercept survey design
- Standardization of methodology among the states and regions
- Recognition and incorporation of regional differences in data needs

Workshop participants discussed the effects of angler perceptions about data collection programs and how those perceptions affect willingness to participate in surveys and the quality of data. Recommendations for expanding and improving outreach and communication programs include:

- Customize outreach programs to meet regional needs
- Improve training for and communication with field interviewers
- Increase constituent involvement in the surveys and outreach programs

The workshop report can be found at the following website:

[http://www.st.nmfs.noaa.gov/mrip/events/downloads/Workshop\\_Report\\_final.pdf](http://www.st.nmfs.noaa.gov/mrip/events/downloads/Workshop_Report_final.pdf)

### **Nationwide Listening Sessions**

A guiding principle of the MRIP is that it be designed and implemented with input from those relying on the data for management and business decisions. Consistent with that principle, NOAA Fisheries made an extensive effort to meet with recreational data customers in every region of the country as part of the MRIP design process.

These regional “listening sessions” with the agency’s science and management partners took place during the spring and summer of 2008 (summaries are available at [www.CountMyFish.noaa.gov](http://www.CountMyFish.noaa.gov) under “Meetings and Events” tab). In addition, there were numerous less formal sessions including community and club gatherings, one-on-one meetings, and other outreach events to hear directly from fisheries managers, the commercial and recreational fishing communities, conservationists, and other interested parties.

The following table summarizes the major findings of those sessions:

Key Stakeholder Comments	
<ul style="list-style-type: none"> <li>▪ Avoid a one-size-fits-all approach to data collection; recognize the different needs of different regions and emulate existing best practices.</li> </ul>	<i>The purpose of listening sessions was to determine specifically which issues partners felt were the most critical to address to ensure that MRIP would be most suited to their needs.</i>
<ul style="list-style-type: none"> <li>▪ Consider gathering corroborative data in addition to angler surveys and intercepts, such as fuel costs, weather trends, etc.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Increase the frequency of data collection and reporting to ensure for timely management decisions; collect data for a longer portion of the year.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Increase the number of species accounted for in the system of surveys.</li> </ul>	<i>Their input – much of which mirrored the NRC recommendations – is helping to serve as a road map for both immediate-term implementation decisions as well as long-term program design.</i>
<ul style="list-style-type: none"> <li>▪ Increase the geographic resolution of surveys.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Account for issues such as night fishing, shore-based fishing, fishing from private access points, competition fishing, and release mortality.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Recognize and design for the explicit nexus between catch and effort data and the establishment of Annual Catch Limits.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Account for the socio-economic impact of recreational fishing, especially its contribution on the wellbeing of coastal communities.</li> </ul>	

## Organization

An Executive Steering Committee oversees the MRIP. It is chaired by the director of NOAA Fisheries' Office of Science and Technology and provides advice on program management



issues, secures the resources needed to develop and implement data collection improvements, and ensures that the collaborative design of the MRIP proceeds in a manner consistent with the fundamental policies and general principles of the partner agencies.

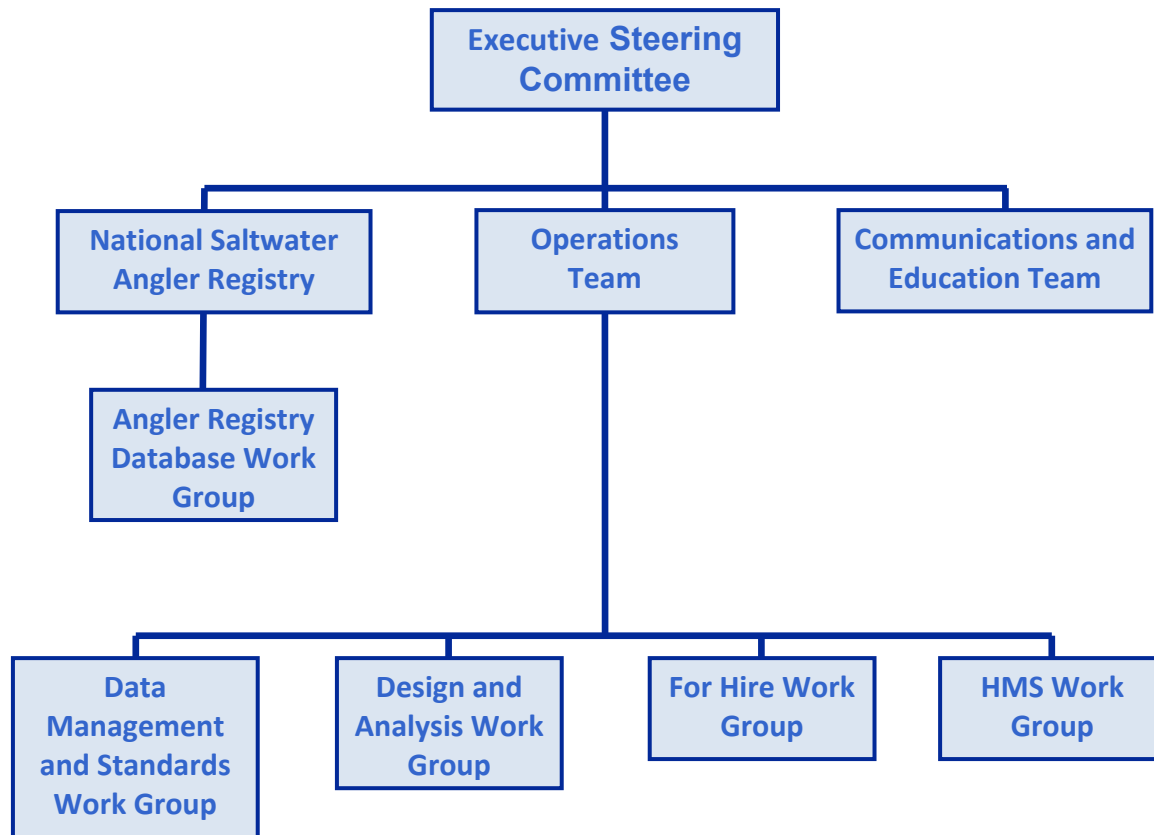
The Executive Steering Committee established three MRIP leadership teams that are responsible for developing and implementing an improved data collection program for recreational fisheries, and, promoting communication between and among NOAA Fisheries, partner organizations, and constituents.

Leadership teams include representation from a broad range of organizations, expertise, and interests, and have the flexibility to establish work groups to address topical or regional issues as needed. The MRIP leadership teams include:

- Operations Team: oversees day-to-day development of survey design and data management improvements;
- Angler Registry Team: responsible for development of Federal registry of recreational, saltwater anglers;

- Communications and Education Team: carries out strategic communications to ensure partners and constituents are engaged in the redesign process and kept well informed and apprised of the initiative's progress.

*MRIP Organizational Chart*



### Identifying and Implementing Survey Improvements

The top priorities for any improved data collection system should be to identify and implement data collection and data management improvements. For MRIP, that task is the responsibility of the Operations Team, which includes representation from state natural resource agencies, fishery management councils, interstate marine fisheries commissions, the recreational fishing industry, and NOAA Fisheries. The Operations Team conducted a thorough review of the NRC's report, the proceedings from the Denver Requirements Workshop, and the MSA, and identified over 120 recommendations for improving recreational fishing surveys. These were consolidated into 29 recommendations prioritized for each region. Priorities were based upon factors such as anticipated impact, ease of implementation, and dependencies upon other recommendations. Several recommendations were not prioritized because they were already being addressed, beyond the scope of the Operations Team's responsibility, or identified as general themes that would be addressed through the cooperative nature of the MRIP process.

Upon approval of the prioritized recommendations by the Executive Steering Committee, the Operations Team developed a Work Plan for Improving Marine Recreational Fishing Data Collection Programs. It established five work groups to develop and implement research projects related to survey design, data analysis, data management and standards, data collection for for-hire fishing, and data collection for HMS fishing. The work plan can be found at the following website:

([http://www.st.nmfs.noaa.gov/mrii/documents/Work\\_Plan\\_for\\_Improving\\_Data\\_Collection\\_Programs.pdf](http://www.st.nmfs.noaa.gov/mrii/documents/Work_Plan_for_Improving_Data_Collection_Programs.pdf)),

The Operations Team later combined survey design and data analysis into a single category, resulting in the current four MRIP work groups:

- Design and Analysis Work Group (DAWG),
- Data Management and Standards Work Group (DMSWG),
- For-Hire Work Group (FHWG),
- Highly Migratory Species Work Group (HMSWG).

The members of these groups are the ones organizing and doing the hard, technical analysis needed to improve the surveys. Each work group consists of 10-20 members and includes representatives from State natural resource agencies, marine fisheries commissions, regional fishery management councils, NOAA Fisheries, and recreational fishing interest groups.

Members were selected according to individual expertise in the work group's area of study and to provide balanced regional representation. Each work group was charged with selecting a chairperson who is responsible for ensuring effective communication within and among the work groups. The Operations Team conducts monthly conference calls with the work group chairs to facilitate this communication. These conference calls provide an opportunity for the work group chairs to update the Operations Team on project progress, as well as identify opportunities for collaboration among the work groups.

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*Recognizing the complexity of MRIP projects and the value of an outside perspective, the Operations Team solicited a team of statistical consultants to support the work groups.*

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To initiate project development, the Operations Team hosted a workshop in St. Petersburg, FL in August 2007, where work groups received formal charges and were provided with an opportunity to begin project planning. Specific work group charges are included within the Work Plan for Improving Marine Recreational Fisheries Data Collection Programs. Generally, work groups were charged with developing and implementing projects that address the recommendations identified by the Operations Team.

Following the workshop, the work groups were asked to continue project development and submit final project plans to the Operations Team by the end of October 2007. Final project plans were to include an overview of each project, including the purpose and scope, a schedule and milestones, and an estimated budget.



After receiving final project plans, the Operations Team convened to review and prioritize the projects, and ultimately provide project funding recommendations to the Executive Steering Committee. Priorities were based upon the following criteria:

- Is the project consistent with the priorities identified by the Operations Team?
- Is the project consistent with the mandates of the MSA reauthorization to improve recreational statistics?
- Significance of the expected project results. Do they have potential benefits that are worth the investment?
- Can the results of the project be expanded to improve national and regional programs?
- Practicality: are the scope, design, timeline, and budget reasonably matched?
- Will the project address an important management or science need?

Of the seventeen project plans submitted by the work groups to the Operations Team, sixteen were recommended for funding.

Recognizing the complexity of MRIP projects and the value of an outside perspective, the Operations Team solicited a team of statistical consultants to support the work groups. The Operations Team concluded that consultants would provide the expertise needed to effectively develop and execute projects, as well as provide additional credibility to project conclusions and work group recommendations. The consultant team includes three members from the NRC Review Panel. In addition to being experts in survey design and analysis, these individuals are familiar with existing recreational fishing data collection programs through their involvement with the NRC review. These individuals were asked to support the MRIP work groups, as well as recommend additional consultants to support the MRIP process. Currently, twelve consultants from academia and private survey design firms are supporting MRIP projects.

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*Meeting both regional and national data needs relies on the partners' shared commitment to data quality, data collection, data dissemination and survey design standards.*

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## MRIP Program Strategy

### Regional Approach

MRIP will evolve as a system of regional data collection programs adhering to national standards and protocols. In addition to providing each region with the flexibility to address local and/or regional needs, this approach will maximize efficiency by utilizing, to the greatest extent practical, infrastructure already developed by existing regional Fishery Information Networks (FINs) and/or state data collection programs.

Meeting both regional and national data needs relies on the partners' shared commitment to data quality, data collection, data dissemination, and survey design standards. Standards, which are being developed cooperatively by MRIP work groups, will guarantee improved comparability and compatibility, and ensure recommendations identified by the NRC and mandated by MSA are being addressed.

Data collection programs directly managed by NOAA Fisheries will implement improvements as they are identified, documented, and approved by the Executive Steering Committee. For those programs not administered and/or funded by NOAA Fisheries, MRIP will provide technical assistance and support for improvements, for example, by enhancing data collection efforts through statistical review and analysis of survey methods, developing information management tools, or providing financial assistance.

## Priorities

Successfully redesigning the Nation's marine recreational fishery catch and effort monitoring programs requires a well-coordinated, sequenced approach. This approach begins with improving the current data collection tools to reduce bias, address gaps in information, and produce more precise, accurate statistics. As those improvements are taking place, NOAA Fisheries will concurrently evaluate, test, and implement appropriate methodological improvements for future surveys. Current surveys will be redesigned and new survey components will be added as necessary to provide the appropriate mix of monitoring tools needed to accurately track fishing effort and catch in each region. As results emerge indicating which combinations of methods show the most promise for specific regions, species, management needs, and other uses, the application of those tools will be broadened to bring ever more granularity to spatial and temporal monitoring.

The following are the specific priorities that MRIP seeks to address:

PRIORITY	STAGE
Evaluation of current sampling and estimation methods.	<b>IMPROVING CURRENT ESTIMATION METHODS</b> <i>SHARPENING THE EXISTING TOOLS</i>
Improving sampling and estimation designs for future surveys. <ul style="list-style-type: none"> <li>Pilot testing of new sampling and estimation methods.</li> <li>Phased implementation of new survey methods.</li> <li>Benchmarking new survey methods against old survey methods.</li> </ul>	<b>EXPLORE ADDITIONAL METHODS</b> <i>ADDING NEW TOOLS TO THE TOOLBOX</i>
Meeting customer needs for precision and resolution.	<b>BROADENING THE APPLICATION</b> <i>PUTTING THE TOOLS TO USE</i>

While also important, developing methods for monitoring recreational fishing for invertebrates, finfish in freshwater areas, or protected resources interactions are beyond the initial scope of MRIP. This does not rule out making improvements to these and other secondary needs in the future as MRIP continues to evolve and priorities are reassessed.

### Evaluation of current sampling and estimation methods

Current survey designs are being closely evaluated to determine if revising estimation methods can eliminate potential biases. Current sampling and estimation procedures are being fully documented, and, with support from expert consultants, will be changed as needed to provide estimates that better account for assumptions made in the sampling designs.

Initial efforts are determining if all current surveys use appropriate, probability-based sampling designs. Procedures for assigning selection probabilities of sample units need to be understood, and selection probabilities must be properly taken into account in the estimation process. If probability sampling is not being used, then the selection probabilities needed for unbiased estimation will be unknown and estimation improvements may not be possible.

A number of possible biases in the current surveys may be measured and eliminated by revising the estimation methods to better reflect the current sampling designs. Once estimation improvements are identified and programmed, estimates of catch and effort for prior years will be recalculated. Comparisons of the new and old estimates will provide an opportunity to look for differences and assess the direction and magnitude of any consistent biases associated with the old estimation methods. The new estimation methods can also be used immediately to provide more accurate estimates of catch and effort from the current surveys.

Corrections to current estimation methods will help eliminate possible biases, but the possible effects of “non-sampling errors” on the accuracy of our past survey estimates must also be evaluated. Errors can occur if survey sampling frames do not include all elements of the population for which estimates are needed, or if some population elements are replicated in the frame. For example, anglers who are exempted from saltwater licensing requirements would be excluded from surveys that utilize databases of licensed anglers as sampling frames. Errors can also occur if observations cannot be obtained for some included elements when they are selected in the sample. If the excluded elements differ from included ones with respect to the variable of interest (e.g., fishing effort, catch rate, species composition of catch), then survey estimates based on sample means would likely be biased if they are expanded across the entire population.

It is difficult to evaluate possible biases caused by frame coverage errors without data on the uncovered segments of the target population. However, it is possible to evaluate the range of potential biases by conducting simulation studies that utilize existing data on the sizes of the uncovered population. Simulation experiments are being designed and implemented to evaluate the extent of possible biases when covered and uncovered population segments differ to varying degrees. Possible biases resulting from “non-response” errors or “missed sample” errors will be evaluated by designing and conducting supplemental surveys targeting non-respondents (missed sample units). Data collected from such surveys will be compared with data



collected for respondents (observed sample units) in the original surveys to measure possible differences that could cause estimation biases.

### **Improving sampling and estimation designs for future surveys**

Evaluation of current survey designs and estimation methods is coinciding with the identification and evaluation of alternative sampling approaches that may be better suited for providing the coverage, sampling efficiency, statistical accuracy, and precision desired for recreational fisheries statistics. A variety of mail, telephone, internet, and on-site survey approaches are being considered to effectively utilize available sampling frames and assure accurate accounting of fishing effort and catch by all fishing participants.

A top priority of MRIP is to develop, implement, and maintain complete angler list frames that can be used for more efficient and statistically accurate surveys of recreational fishing activity. The NRC strongly recommended the development of angler and for-hire vessel operator list frames through the establishment of a coordinated, state-federal registration or licensing program. As angler registries are implemented, efforts will be made to develop dual or multiple frame surveys that accomplish the following:

- Utilize federal and state angler registries as they become available, and
- Utilize alternative frames, such as random-digit dialing frames or address frames that provide coverage of participants not included in the registry frames.

Integration of angler registry frames with alternative frames will minimize possible biases resulting from frame imperfections.



On-site survey designs are also being assessed and will be modified to ensure that effective probability-based sampling approaches are implemented. This effort includes an examination of the statistical sampling procedures for on-site surveys, as well as development of protocols to ensure that access site frames are complete, accurate and up-to-date, and establishment of sampler training and monitoring procedures to ensure that collected data are accurate and that proper sampling and interviewing protocols are observed.

The assessment of on-site surveys includes studies that test the assumption that anglers not traditionally sampled demonstrate similar behavior and have similar fishing success to anglers that have been. Specifically, methods are being developed and pilot studies implemented to test the following assumptions:

- Anglers fishing from private-access sites exhibit similar behavior and experience similar fishing success to anglers fishing from public-access sites,
- Anglers whose trips end at night, when field samplers are generally not present, exhibit similar behavior and experience similar fishing success to anglers whose trips end during daylight hours.

Results of pilot studies will be used to develop long-term strategies to account for gaps in coverage of certain segments of the angling population in on-site surveys.

Methods to improve the quality of data used to estimate mean catch per trip, by species, are also being developed and evaluated. Traditionally, on-site surveys have been employed to collect catch data because it is widely believed that species identifications and counts collected by trained interviewers are more accurate than data that is self-reported (reported by the angler). Shoreside interviewers can directly observe most of the catch landed by anglers. However, it is difficult to observe catch that is discarded or released at sea. In recent years observers have been deployed on headboats to obtain direct observations of released catch and catch used for bait. This is generally not possible for other fishing modes; so, estimates continue to rely on self-reported data. Alternative data collection approaches to provide more accurate information about discarded are being evaluated.

As appropriate sampling designs for the various off-site and on-site methods are being identified and developed, it will be important to evaluate possible estimation enhancements that will utilize new developments in finite population sampling theory. The NRC stated, "Current estimates are particularly deficient when applied to small areas because they do not use information obtained in adjoining areas or time periods, nor do they consider relationships between species that occur together. Therefore, they are of lower precision than would be possible if this information were used." Support from statistical consultants is being used to evaluate "small area estimation" methods and/or "regression estimation" methods to enhance the precision of effort and catch estimates.

### **Pilot testing of new sampling and estimation designs**

In order to effectively test and evaluate alternative survey approaches, it is necessary to conduct small-scale pilot studies. The objective is to develop a survey design, develop survey protocols that will assure consistent operations and provide appropriate quality assurance and quality control, implement the design and protocols, and modify them as needed to assure effective and efficient performance. Pilot studies are generally small in scope and directed at an appropriate subset of the total angling population. The emphasis is on testing a new survey design in a geographic area and time period where the parameters of interest are most readily measured and either sampling or estimation improvements are likely to have the biggest payoff in terms of eliminating possible biases. Results will be evaluated as soon as possible and applied to the new survey as necessary to improve the design or performance of the new survey approach.

### **Phased implementation of new survey methods**

Step-by-step plans are being made for expanding implementation of new survey components to more regions and states as alternative survey approaches are tested and decisions are made on which methods should be implemented. Some regions or states may be ready sooner than others for inclusion (e.g., new telephone surveys based on angler registries), and the plan will take this into account. Expansion will progress as soon as new methods have been properly tested, appropriately enhanced, and determined to be ready for implementation.

**Benchmarking new survey methods against old survey methods**

Wherever possible and economically feasible, studies of new survey methods are being designed to allow side-by-side comparisons with old methods. Such an approach will allow for benchmarking of new methods against old methods and provide an opportunity to obtain accurate and relevant measures of differences in survey performance, operational costs, and statistical results. Such direct measures will help demonstrate the extent to which a new method has improved the efficiency or quality of fisheries statistics and allow for an assessment of benefits relative to costs.

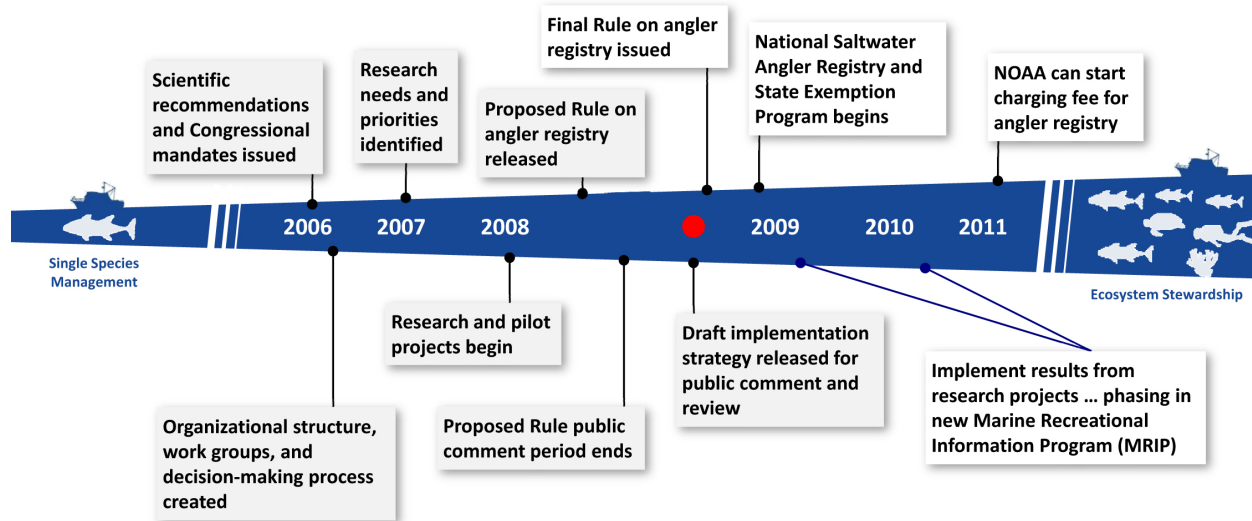
**Obtaining the necessary funding**

Once new survey approaches are developed and implemented, efforts will be made to improve the precision of recreational fishing statistics through optimized sampling allocations and increased sampling levels. This will require additional funding, as well as a careful assessment of how best to distribute available resources among survey components and sampling strata. Efforts to optimize sampling will focus on improving the precision of catch statistics for key management species. Identification of priority species and precision goals is a cooperative effort requiring substantial input from data users and stakeholders. Meeting these goals requires careful planning to secure necessary resources and increase sampling levels as additional resources become available.

Since 2004, NOAA Fisheries has been working through the NOAA Programming, Planning, Budgeting, and Execution System (PPBES) to obtain the necessary funding to support the development, implementation, and maintenance of an improved data collection program. In FY 2007, NOAA Fisheries was able to make a temporary allocation of \$1.7M to support initiation of the MRIP. In FY 2008, NOAA Fisheries obtained \$3.5M of permanent funding for the MRIP in the Congressional budget, and the President's Budget Request for FY 2009 includes an additional \$3.05M, which would raise the total funding to \$6.55M. NOAA Fisheries is working to obtain additional funding increases in FY 2010 and FY 2011. The Agency will continue to work on building future funding levels as needed to support a cooperative state-federal marine recreational fisheries monitoring program that will meet the needs of all partners for accurate stock assessments and effective fisheries management.



## MRIP Implementation Timeline



## Project Updates

### Design and Analysis Work Group (DAWG)

The NRC noted that both the telephone and in-person interview components of the angler surveys include data collection and analysis procedures based on unverified assumptions that could lead to biases in catch and effort estimations. The DAWG is charged with addressing assumptions and potential sources of bias in existing data collection programs and developing new data collection methodologies that will result in more timely, precise, and accurate estimates of recreational fishing catch and effort. Projects developed by the group are addressing the recommendations from the NRC and will ensure that data collection and analyses meet the demands of fisheries managers. The work group will develop a system of surveys that provide more robust information on angler catch and effort with a workable transition from the existing surveys.

Projects that have been developed and implemented by the DAWG include:

- Design and Analysis Methods to Account for Incomplete License Frames:** The NRC recommended that future surveys of fishing effort should be based on a universal sampling frame of anglers. The MSA echoed that recommendation by mandating the, “use of surveys that target anglers registered or licensed at the State or Federal level...” At issue is the fact that some current saltwater licensing programs exempt large sections of the population from licensing requirements (e.g., age, military, and disability exemptions). In other words, the phonebook of saltwater anglers that serves as the basis for the telephone survey is incomplete.

Several states have recognized the benefits of sampling from angler lists and developed surveys that use license databases as sampling frames. These programs also have developed a variety of techniques to account for license exemptions. These approaches



include the use of dual-frame surveys and expansion of estimates by factors derived from complementary surveys.

This project will result in:

- 1) Guidelines for designing and implementing surveys that use angler registries as sampling frames, and
- 2) Recommendations for improving existing surveys that use state saltwater license databases as sampling frames.

Particular emphasis will be placed on developing procedures to account for non-licensed or exempted anglers.

Specific project milestones include:

- 1) Regional reports documenting relevant surveys (Gulf of Mexico Dual-Frame Survey, Oregon Shore and Estuary Boat Survey, California Angler License Directory Survey, Washington Puget Sound Survey), assessing each survey's ability to cover angler populations, and assessing the quality of sample frames – Completed, April 1, 2008;
  - 2) Report offering suggestions for developing and maintaining survey list frames – Completed, September 1, 2008;
  - 3) Report identifying and assessing alternate survey frames (RDD/CHTS, APIS, USPS, etc.) to complement incomplete angler list frames – October 1, 2008;
  - 4) Report of guidelines and recommendations for implementing future fishing effort surveys and/or improving existing surveys – January 1, 2009.
- **Improving Recreational Fisheries Discard Data:** The NRC suggested that better methods are needed to estimate the number, size distribution and disposition of released fish. Furthermore, the review stated that existing intercept surveys might not provide enough detail to estimate mortality of released or discarded catch. Not knowing the number of released fish or their mortality could impact stock assessments.

This project will result in:

- 1) A direct comparison between angler-reported and observed discard data on headboats to examine potential biases associated with angler-reported discards;
- 2) Identification and assessment of alternative methodologies to collect information about discarded catch; and
- 3) An assessment of the need to collect more detailed trip information that could be used to better estimate discard mortality.

Specific project milestones include:

- 1) Report describing comparisons between observed and angler-reported discard rates on headboats – January 1, 2009;

- 2) Report describing needs of data users for more detailed trip/catch information – January 1, 2009;
  - 3) Report of recommendations to improve information on discarded catch – January 1, 2009.
- **Evaluation of Whether Estimation Procedures Appropriately Match Sample Designs:** The NRC concluded that estimation procedures for recreational fishing surveys might not be consistent with corresponding sampling designs. Such inconsistencies could result in biased estimates of catch and effort, as well as their corresponding variances.

This project will result in:

- 1) Descriptions of inconsistencies between sampling and estimation procedures,
- 2) Development of alternative estimation methods,
- 3) Evaluation of the impacts of alternate methods on catch and effort estimates, and
- 4) Recommendations of preferred sampling and estimation methods.

Due to the large number of recreational fishing sampling programs, the project team is sequentially addressing regional programs. Initial efforts will focus on the MRFSS Access-Point Intercept Survey (APIS), Coastal Household Telephone Survey, and For-Hire Survey, followed by the Large Pelagics Survey and the Pacific RecFIN surveys.

Specific project milestones include:

- 1) Report describing current methods and inconsistencies in survey designs and estimation procedures for MRFSS APIS CHTS, FHS and LPS – Complete;
  - 2) Report of recommendations to adjust sampling and/or estimation procedures for MRFSS APIS, CHTS and FHS – January 1, 2009;
  - 3) Report of recommendations to adjust historical catch and effort estimates based upon comparisons between original and revised MRFSS estimates – June 1, 2009;
  - 4) Report of recommendations to adjust sampling and estimation procedures for LPS – TBD;
  - 5) Report of recommendations to adjust sampling and estimation procedures for Pacific RecFIN surveys – TBD.
- **Survey Coverage of Angling Populations:** The NRC identified several gaps in the coverage of CPUE survey sampling frames. Specifically, the NRC review noted the inability of current surveys to sample anglers who fish from private shorelines or those who take boat trips departing from private docks. The review also highlighted the lack of sampling from trips that occur or return to the dock at night. Concerns about survey coverage were also expressed at the Denver Workshop, where it was noted that small for-hire vessels (guide boats) are likely being missed in dockside surveys due to their transient activity. Current sampling and estimation procedures assume that catch and effort characteristics of non-sampled segments of angling populations are similar to those of sampled segments. Catch and effort estimates could be biased if such assumptions are invalid.

This project will result in:

- 1) A regional and/or state-by-state assessment of the potential magnitude of bias associated with under-coverage of angling populations in access-point intercept surveys -- results of this assessment will help guide the development of pilot projects by identifying regions and/or states where gaps in survey coverage are most prominent,
- 2) Plans to quantitatively test for differences in catch and effort characteristics between anglers covered by current surveys and those not covered by current surveys, and
- 3) A quantitative assessment of the impact of potential biases on catch and effort estimates.

The results of this project will be used to develop long-term, regional strategies to account for biases resulting from gaps in survey coverage.

Specific project milestones include:

- 1) Design document for pilot study in CA to test assumption that anglers not covered by current surveys have similar catch and effort characteristics as anglers covered by current surveys – October 1, 2008;
- 2) Implementation of CA pilot study – November 1, 2008;
- 3) Report describing the potential for bias resulting from gaps in coverage of CPUE sampling frames and recommending regions/states where pilot studies should be conducted – November 1, 2008;
- 4) Report describing results of sensitivity analyses testing the impact of potential biases on catch and effort estimates – January 1, 2009;
- 5) Design document for pilot studies in other regions/states – January 1, 2009.

## **Data Management and Standards Work Group (DMSWG)**

The NRC recommended greater standardization among regional surveys and between state surveys and national surveys. Specifically, the review called for a “greater degree of coordination between federal, state, and other survey programs...to achieve the national perspective on marine recreational fisheries that is needed.” This group is charged with developing and maintaining data collection standards, protocols, and data access portals for the MRIP. The DMSWG is responsible for ensuring the comparability and compatibility of recreational fishing statistics among regional data collection programs while recognizing that each region has unique information needs and data collection issues.

Projects that have been developed and implemented by the DMSWG include:

- **Identify and Consolidate Information on Existing Recreational Datasets:** The initial step toward developing data standards is to identify and summarize existing recreational fishing data collection programs. This project will result in an inventory of accepted data collection programs that include program definitions; sampling, data collection, and data

processing procedures; metadata standards; data management documentation; data elements and definitions; and data access protocols.

The project team has developed the MRIP Data Management and Standards (MDMS) system, a web-based metadata collection tool, to facilitate the Work Group's analysis of existing data collection programs with the end goal of making recommendations for minimum data elements and standards to be used in the MRIP. In order to accomplish the goals specific to this initial WG project, it was necessary to develop the MDMS. However, compatible information will be uploaded to InPort, the metadata system developed by the Fisheries Information System (FIS) Program for managing metadata for both commercial and recreational fisheries monitoring programs.

Specific project milestones include:

- 1) Implementation of MDMS – Completed, February 15, 2008;
  - 2) Summary document describing IT efforts to date – October 1, 2008;
  - 3) Summary document describing survey documentation developed for data collection programs in the Western Pacific Territories – October 1, 2008;
  - 4) Report describing functionality and content of MDMS – October 1, 2008.
- **Develop Marine Recreational Fisheries Minimum Data Elements and Regional/National Standards:** Once relevant data have been entered into the MRIP Data Management and Standards (MDMS) system, the DMSWG will review existing data collection systems and recommend a set of minimum data elements and standards for the MRIP. Establishing and implementing standards will satisfy the need to compile national recreational fisheries statistics from independent regional data collection programs. The identification of common core elements will also assist in the development of best practices and standard procedures that can be documented at a national level and used as guidelines for local and regional managers of data collections and information management systems.

This project will also determine the requirements and scope of an integrated recreational fisheries information database, including the functionality, business rules, and data processing protocols. The project will ensure the compatibility of independent data collection programs while continuing to recognize unique regional data needs and data collection activities.

In addition, the DMSWG will participate in the redesign of the Pacific RecFIN website in an effort to research, identify, and analyze various interface options that may be applicable to the MRIP.

Specific project activities include:

- 1) Develop updated milestone schedule by October 1, 2008;
- 2) Information architecture documentation:
  - Comprehensive map of existing recreational saltwater fishing data collection programs identifying overlaps and gaps

- Recommended information architecture for a new MRIP system, including map to facilitate migration of data from existing programs to new MRIP system (MRFSS, GulfFIN, PacRecFIN, WPacFIN, AKFIN);
- 3) Recommendations for standard codes and code mapping to be used the new MRIP;
- 4) Recommendations for database structure, data elements and data types to be used in a new MRIP system;
- 5) Data integration map to facilitate transmission of data from existing programs to new national system;
- 6) A partial requirements document to include the compilation of recommendations for information architecture, standard codes and code mapping, database structure, data elements and data types;
- 7) Pilot project for Pacific RecFIN interface redesign
  - An updated project plan
  - A document detailing the requirements for:
    - A Content Management System (CMS) to replace the current website
    - A Help/Wiki Module
    - Content compilation and entry
    - An Ad-hoc Query Tool
  - Implementation of the actual functionality
  - A document outlining the applicability of the work to MRIP.

## For-Hire Work Group (FHWG)

The NRC suggested that the for-hire industry be considered a commercial sector and that reporting requirements for this sector should be different from other recreational fishing activities. Specifically, it recommended that for-hire operations be required to maintain and submit mandatory logbooks documenting fishing effort and catch. There is no existing broad authority to implement the NRC's recommendation for mandatory logbook reporting, but, MRIP is evaluating ways to improve reporting by using all current programs of NOAA Fisheries, the councils, and the states. For example, several regions have implemented for-hire-specific sampling programs that have greatly enhanced data collection in the for-hire sector.



In addition, several states conduct logbook-reporting programs, and NOAA Fisheries administers mandatory logbook reporting for portions of the for-hire fleet in the Northeast and Southeast Regions. In some cases, sampling and logbook programs have been used in dual-frame methodologies to reduce bias and improve precision. The FHWG is charged with addressing data collection issues that are unique to charter, guide, and head boat fishing activities, and ultimately recommending regional approaches for collecting catch and effort data from the for-hire sector.

Projects that have been developed and implemented by the FHWG include:

- **Expert Review of Methods Used to Assess For-Hire Marine Recreational Fisheries of the U.S.:** This project includes an independent review of the various methods currently used to assess catch and effort in the for-hire fishery. Reviewers are considering aspects such as accuracy and precision, reporting burden, reporting preferences, timeliness of data acquisition, and cost, and will recommend preferred regional approaches to collecting catch and effort data from the for-hire sector. Recommendations could include retaining existing data collection designs, improving current designs, or replacing existing designs in their entirety with new designs.

This project will result in a report identifying preferred regional approaches for collecting recreational fisheries statistics from the for-hire sector. The report will include a review of the existing data collection programs and an evaluation of their current performance for meeting the needs of both regional and national stock assessments and regional and national fisheries management. The report will provide specific recommendations for existing programs in each major region, to include all that apply to each region, such as:

- 1) Recommendations to retain existing methods that are adequate and require minimal or no modifications;
- 2) Recommendations to retain existing methods with substantial modifications; and detailed descriptions of those necessary modifications;
- 3) Recommendations to replace existing methods that are inadequate and recommended methodologies to replace those programs;
- 4) Recommendations to eliminate existing methods that overlap with other data collection programs and provide no additional value;
- 5) Recommendations to retain existing methods that overlap with other data collection programs, but that provide some additional value, as independent data collection programs, and recommendations for any minor or major modifications;
- 6) Recommendations to combine existing methods that overlap with other data collection programs either as dual-frame surveys or some other modified combination of the overlapping programs.

The report will be delivered to the Operations Team in November 2008.

- **For-Hire Census with Pilot Electronic Reporting Option for Puerto Rico Catch and Effort Data:** Puerto Rico does not have a for-hire-specific data collection program. Instead, for-hire catch and effort estimates are derived from traditional MRFSS methodologies: the CHTS collects information about fishing effort and the MRFSS Intercept Survey collects information about catch. This methodology is particularly susceptible to bias in Puerto Rico, where approximately 80 percent of for-hire anglers are non-residents and are consequently not included in CHTS sample frames.

This project includes development and implementation of a pilot electronic logbook reporting program for for-hire vessels in Puerto Rico. The Puerto Rico Department of Natural and Environmental Resources is compiling a list of permitted for-hire vessels and enforce mandatory reporting. The electronic logbook will be modeled after similar

systems developed for commercial fishery reporting in other states. The project will result in an alternative data collection approach for for-hire vessels.

Specific project milestones include:

- 1) Solicitation of contractor support to develop electronic reporting tool – Completed;
- 2) Design document describing data collection procedures and electronic reporting tool – October 1, 2008;
- 3) Implementation of data collection – October 1, 2008 (to continue for 1 year);
- 4) Report documenting data collection activities and recommendations for improvements – December 1, 2009.

### Highly Migratory Species Work Group (HMSWG)

Fishing trips targeting highly migratory species (HMS), such as tunas, sharks and billfish, generally make up a relatively small, yet important portion of total recreational fishing activity. Due to the rare occurrence of trips targeting HMS, generalized fishing surveys, such as the MRFSS, do not produce very precise catch estimates for most highly migratory species. The inability of MRFSS to capture HMS fishing activity in a comprehensive manner has resulted in the implementation of specialized HMS data collections such as the Large Pelagics Survey (LPS) and catch card programs for bluefin tunas. While these programs have improved data collection for HMS, they are limited in their geographic scope and may be susceptible to biases described in the NRC's review. The HMS Work Group (HMSWG) is charged with assessing the statistical design and effectiveness of current HMS data collection programs, developing new data collection methodologies as needed, and expanding the scope of HMS data collection efforts to meet management and science needs.



Projects that are being developed and implemented by the HMSWG include:

- **Pilot Study to Characterize Recreational Highly Migratory Species Fisheries in the South Atlantic and Gulf of Mexico:** Specialized data collections designed to capture angler trips targeting HMS are limited to the Northeast Region (LPS) and North Carolina (NC catch card program). Fishery managers and constituents at the Denver Workshop identified insufficient coverage of HMS fishing in the Gulf of Mexico as a data gap. The purpose of this project is to characterize HMS private boat fisheries in the South Atlantic and Gulf of Mexico and the HMS charter boat fishery off of the coast of Texas in terms of magnitude (number of trips and number of participating vessels), species targeted, areas fished, seasonal distribution of fishing effort, fishing access points and departure and return times of trips. Results of this project will be used to quantify the need for HMS-specific data collections in the Southeast Region and, if necessary, help select appropriate methodologies and define the scope of a new HMS-specific data collection program in the region.



Specific project milestones include:

- 1) Design document describing methodology and data collection procedures – Completed, May 1, 2008;
  - 2) Procure contractual services to conduct the telephone survey – Completed, June 1, 2008;
  - 3) Implementation of data collection – Completed, September 1, 2008;
  - 4) Report documenting survey results, identifying the need for future data collection activities and providing recommendations for appropriate methodologies. – January 1, 2009.
- **Highly Migratory Species Surveys – Florida Pilot Studies:** Recreational fishing for HMS in Florida is a common occurrence. However, current recreational fishing data collection programs do not adequately cover HMS fishing activities. Of particular concern are fishing trips that are not represented in current field surveys, such as trips that return to the docks at night when field samplers are not present, and trips that return to privately owned sites that are inaccessible to samplers. Two pilot projects have been developed by the HMSWG to address issues associated with HMS fishing in Florida: one focusing on private recreational fishing vessels and one focusing on for-hire vessels.

Together, these two projects will result in:

- 1) Characterization of private boat and for-hire HMS fishing activity in Florida that will better quantify the need for future HMS-specific data collections, as well as help determine appropriate methodologies for future data collections,
- 2) An assessment of alternate data collection approaches for collecting information from individuals who cannot be sampled by current methodologies -- this information may be directly applicable to other regional data collection efforts,
- 3) Comparisons of catch characteristics between trips that are currently accessible to field samplers (public access and daytime trips) and trips that are generally not accessible to samplers (private-access and night trips), and
- 4) Estimates of HMS effort and landings by for-hire vessels in southeast Florida. By providing landings estimates, this project will satisfy an immediate management need.

Specific project milestones include:

- 1) Implementation of data collection – Completed, May 1, 2008;
  - 2) Design document describing methodology and data collection procedures – January 1, 2009;
  - 3) Report documenting project results, recommending improvements, and describing needs for future data collection efforts in FL – August 1, 2009.
- **Evaluation of the Sampling Distribution of Tournament versus Non-Tournament Trips in the Large Pelagics Survey:** Tournaments are an important component of the directed fishery for highly migratory species. Due to the competitive nature of HMS

tournaments, it is likely that catch rates and fish sizes from tournament trips are different from those of non-tournament trips. As a result, it is extremely important to accurately represent tournament trips in LPS sampling efforts; failure to do so could result in biased catch and landings estimates. This project is evaluating the sampling distribution of tournament trips in NOAA Fisheries' Large Pelagic Survey. If tournaments are not being sampled representatively, recommendations will be made for correcting this potential bias and implementing new approaches for sampling HMS tournaments.

The project team has designed and implemented an HMS tournament data collection pilot program. This program is attempting to census catch and effort from organizers of all registered HMS tournaments in the LPS range from Maine through Virginia. In addition, a subsample of these tournaments has been selected for dockside and phone surveys with captains. This approach will allow us to compare results and validate among different data collection methods (i.e., survey, census organizers, and census captains). The project team will also evaluate and compare alternative approaches within the LPS framework including stratification of tournament trips for LPS estimates, and weighting tournament days appropriately in the LPIS sample draw.

Specific project milestones include:

- 1) Implementation of data collection – Completed June 1, 2008;
  - 2) Design document describing methodology and data collection procedures October 15, 2008;
  - 3) Report including documentation of results of HMS tournament data collection pilot, comparison of different approaches (including advantages, disadvantages and feasibility of each), and recommendations for estimating HMS tournament catch and effort in the future. – January 1, 2009.
- **Non-Tournament HMS Landings Reporting For Private Boats in Puerto Rico- Phase I: Fishery Characterization and Outreach:** Non-tournament HMS landings in Puerto Rico are unreliable due to the rare-event nature of these fisheries. As a result, fisheries managers and scientists lack the necessary information to guide management actions. This project will lead to improvements in marlin landings data that will help NOAA Fisheries monitor the 250-fish limit as recommended by ICCAT. It is anticipated that this pilot will also lead to improvements in the quality and quantity of information available for future management plans. A telephone survey of all Puerto Rico HMS Angling Category permit holders will be implemented in an effort to characterize this fishery. Information obtained about HMS trips from the characterization survey (e.g., avidity, access sites used, species targeted, fishing times, and captain reporting preferences) will be used to develop a full-scale recreational HMS data collection program (Phase II of Project). Puerto Rico Department of Natural and Environmental Resources will also use outreach techniques to gain input, support, and cooperation from sport fishing industry leaders in developing this new program.

Specific project milestones include:

- 1) Project kick-off meeting with various government entities and fishing industry members – Completed, April 9, 2008;
- 2) Implement characterization telephone survey to Puerto Rico HMS Angling category permit holders – October 15, 2008;
- 3) Report analyzing results of HMS characterization survey with specific recommendations for implementing a full-scale catch and effort data collection program in Phase II – February 1, 2009.

## Developing National Saltwater Angler Registry Program

### Background

The National Saltwater Angler Registry Program (“Registry Program”) implements several of the recommendations of the NRC. The NRC found that current recreational surveys that rely on random telephone contacts with residents of coastal county households to collect marine recreational fishing effort data result in significant survey over-coverage because relatively few households include active anglers, and, under-coverage because some anglers do not live in coastal counties or they live in coastal counties but do not have landline telephones. The NRC advised that over-coverage results in severe sampling inefficiency and that under-coverage may lead to serious bias in the resultant effort estimates since anglers from non-coastal counties are likely to have different effort characteristics than those from coastal counties. To resolve these problems, the NRC recommended the development of and subsequent sampling from a comprehensive national saltwater angler registry. The panel further recommended that the registry be established either by implementing a federal registration requirement or by expanding current state saltwater licenses to include all saltwater anglers.

Partially in response to the NRC’s findings and recommendations, Congress passed section 401(g) of the MSA, which requires the Secretary of Commerce to establish a program to improve the quality and accuracy of current estimates of marine recreational fishing catch and effort by January 1, 2009, in a manner that considers and, to the extent feasible, incorporates the NRC’s recommendations. As part of the program, section 401(g)(1) of the MSA requires the Secretary to register, and collect identification and contact information for, anglers and for-hire vessels if they fish in the EEZ, for Continental Shelf fishery resources beyond the EEZ, or for anadromous species throughout their range, including state waters. Further, the Secretary is to exempt from the federal registration requirement those anglers and vessels that are licensed or registered by a state if the state provides sufficient identification and contact information for use in recreational surveys. The resultant federal Registry must address both the qualifications and procedures for registering anglers and vessels and for exempting qualified states’ anglers and vessels from the federal registration requirement.



## Registry Team

A Registry Team of federal and state agencies, regional fishery management and data collection partners and stakeholders was established to facilitate communications and coordination with states and to assist NOAA in developing the Registry Program.

## Goals of the Registry

Establishing goals for the program requires recognition and balancing of two important provisions of the NRC recommendations and the provisions of §401(g) of the MSA. First, the NRC's scientific advice is clear that a universal registry or license-based frame of all saltwater anglers, without exceptions, based on exemptions to state or federal registration requirements, is essential. However, the federal registration provisions of the MSA do not apply to saltwater anglers fishing in state waters (territorial sea or internal waters) unless they are taking anadromous fish. Accordingly, it will be necessary for states and NOAA Fisheries to work in collaboration to build registries of saltwater anglers that include anglers currently exempted or not covered by state license or registration requirements and that also include anglers who are fishing for non-anadromous marine fish in state waters.

Recognizing the need to balance the NRC recommendations and the MSA requirements, the Registry Team developed the following goals and stated them in the Development Plan for the Registry Program:

- Build, over time, and maintain a directory that identifies and supplies mail and telephone contact information for marine anglers and for-hire vessels in the United States, and that is sufficient in conjunction with supplemental data, to characterize saltwater angling effort as intended by the NRC and by Congress in the MSA.
  - Maximize the use of information collected by states in conjunction with state licenses or registries to populate the directory.
  - Minimize the time and paperwork required for anglers to submit information to the directory.
- Enable states, working through regional partnerships, to collect and submit recreational catch and effort data that conforms to national standards in lieu of submission of angler identification information.
- Achieve a high level of support for, and confidence in, the quality and utility of the data that results from use of the directory from anglers and fisheries professionals.

## Rulemaking

The Executive Steering Committee approved the Registry Team's recommended approach for the registry and state exemption process in September 2007. Based on the approved approach, NOAA Fisheries developed a proposed rule and initiated rulemaking to implement the Registry Program. A Notice of Proposed Rulemaking was published in the Federal Register in June 2008, and a final rule is expected to be adopted by November 2008. The scope of the proposed rule includes: the standards and process by which states may apply for exemptions based on their provision of license/registry-based sample frames; the standards and process by which states may

apply for exemptions based on use of state license/registry data to perform surveys of recreational catch and effort; the detailed requirements and process by which anglers and for-hire vessels from non-exempt states will enroll in the federal registry, and requirements for registration fees after January 1, 2011.

## State Exemptions



Immediately following adoption of the Final Rule, NOAA Fisheries will consult with each state and determine the state's interest in seeking exempted state status, and to determine the specific gaps between the state's current license/registry frame availability and that required by the rule. NMFS will develop strategies for each state, individually or in regional groupings as the states desire, to close the gaps and enable the states to successfully apply for exempted state status. NOAA Fisheries will work closely with the states to develop states' exemption proposals and to draft Memoranda of Agreement ("MOAs") that will formalize the performance requirements, and the exemption of the state's anglers from the federal registration requirement, for each successful state.

The process of receiving proposals and issuing MOAs for state exemptions will continue after January 1, 2009. NOAA Fisheries will continue to work closely with states that cannot initially qualify for exempt status, and work toward successful implementation of strategies to achieve exemption status for all states.

## Development of Supplemental Information as Needed for Registry Program

It will be necessary to develop supplemental information and advice on several technical and policy issues as the Registry Program develops. For certain subjects that will be beyond the expertise or resources available to the Registry Team, it will be necessary to establish Work Groups to assist in developing information and advice. Initially, the Team has identified two such areas for which Work Groups will be needed:

- 1) An enforcement work group to advise on how to structure federal registration requirements so they may be effectively enforced, on penalties for non-compliance, on compliance-based performance requirements for state exemption MOAs, and on strategies for enforcing federal exemption requirements in non-exempt states, and
- 2) An Angler Registry Data Base Work Group to work with state license program managers, and with the Operations Team's Data Management and Standards Work Group (possibly as a joint Work Group) to advise on the design of the federal/regional registry data bases, to develop data and data delivery requirements, and to work with states to facilitate the compilation of state license frame data bases into formats that can be used to meet federal and regional survey needs.

## **Establish Registry Process Mechanics**

During 2008, NOAA Fisheries will develop and implement the data management systems required to enable the Registry Program to become operational January 1, 2009. These systems will include:

- 1) The process that will be established, making appropriate use of developing a national one-stop permitting process (the National Permit System) by which anglers in non-exempt states will enroll in the federal registry, including provisions for informing anglers of the registration requirement and providing information on how to register, and
- 2) The database that will be constructed to receive angler registration data, both from states and from federal registrants.

Anglers will be able to register either through a web-based portal in the NPS or by calling a toll-free telephone number. The operating systems to enable such registration will be developed and built in 2008. Effective January 1, 2009, the systems will be in place to begin to issue federal registrations and to receive registrant data and to receive directories of registered anglers and for-hire vessels from states with license based exemptions.

## **Communications and Education Team Update**

### **NRC Recommendations on Communications**

The NRC noted that a disconnect among scientists, managers, and anglers could be a major impediment to successful program management. Specifically, it found that many anglers do not understand how the current survey works. Further, they identified outreach and communications as “essential” to addressing the fundamental need for a recreational data program that earns the confidence of anglers and key constituencies in the recreational fishing community.

The NRC concluded that inadequate communications from program managers directly results in increased angler concerns with the data program. It recommended integrating communications into the data program so that it would become “institutionalized and ongoing.”

### **Establishment of Communications and Education Team**

The Executive Steering Committee recognized that existing outreach capabilities were not sufficient to fully address the NRC’s recommendations related to communications. For that reason, a team of communications professionals were called upon to formally lend their expertise to the MRIP initiative. Knowing that this effort requires creativity, fisheries knowledge, and professional communications expertise, members were chosen based on their experience working with anglers, developing communications campaigns, managing projects, writing to scientific and public audiences, and developing websites. Representatives from NOAA, states, councils, commissions, and the angling public are now involved directly as members of the Team or indirectly as unpaid consultants. In addition, the Team brought in an outside consultant to help direct communication strategies and initiatives.

## Role of the Communications and Education Team

The role of the Team is to provide expertise that will help foster productive, collaborative relationships with key constituencies who have valuable contributions to offer in the development of the new MRIP. To accomplish this, the Team carries out strategic communications to ensure partners and constituents are engaged in the redesign process, kept well informed of opportunities to participate, and apprised of the initiative's progress.

## Audiences

The primary target audiences identified for the campaign include state, regional, and Federal management and science partners; opinion leaders in the fishing community; angling organizations and clubs; regional and national conservation and environmental organizations; and media outlets for reaching the broader angling public.

## Strategy

The campaign employs an integrated approach that combines effectively leveraging existing Agency and partner resources with outside consultant expertise. The overarching approach is one that targets opinion leaders among the key constituencies and gaining champions and trusted messengers to help carry forward important messages.

## Activities

Using the Communications Plan approved by the Executive Steering Committee as guidance, the Communications and Education Team is working aggressively to implement a diverse array of activities. Some of the major activities include:

1. Build a consistent, recognizable identity for the new program. This activity included creation of a unique visual identity. This look and feel carried over into specially developed collateral materials such as a media kit, print ads, and website.
2. Provide clearly stated information on a regular basis to all audiences. A series of fact sheets, FAQs, and presentations are being created and continually updated to provide information on MRIP to partners, constituents, and media. Materials were adapted and made available to all MRIP partners as a tool they could use to tell others about MRIP. In addition, a monthly electronic newsletter, *Newscasts*, debuted in 2008 to provide regular updates on MRIP development to partners and members of MRIP work groups. This was subsequently supported by a freshly redesigned website devoted to MRIP ([www.CountMyFish.noaa.gov](http://www.CountMyFish.noaa.gov)) that was unveiled in May 2008.
3. Engage audiences. Although NOAA Fisheries is responsible for making MRIP work, the program's design has been heavily influenced – and at times primarily driven – by engagement with outside partners. For example, the angler registry proposed rule provided an opportunity for people with a vested interest in recreational data to offer their input to the registry's design. Live read radio public service announcements aired in coastal states encouraging citizens to provide public comments on the proposed rule. The team also worked with the Florida Fish and Wildlife Commission to outfit MRFSS field



samplers with call-to-action cards on the angler registry that they could distribute to anglers.

In addition, MRIP representatives participated in more than 50 formal and informal sessions with the agency's science and management partners, community and club gatherings, one-on-one meetings, and other outreach events to hear directly from fisheries managers, the commercial and recreational fishing communities, conservationists, and other concerned parties about the future direction of MRIP.

4. Generate media interest in MRIP and the angler registry. Using a number of means (including media availability, press releases, and story pitches), more than 100 articles on MRIP and the angler registry have appeared in national and local newspapers, outdoor press, and television and radio newscasts.

## **Next Steps**

The Communications and Education Team continues to coordinate closely with the Angler Registry Team on implementation of the final rule proceeds during the remainder of 2008 and on into 2009. The Team also continues to strengthen relationships with partners and identify ways to engage and inform key audiences on MRIP progress.

## APPENDIX – Coverage, Resolution, and Timeliness of Current Survey Methods, by Subregion

Alaska	
State/Territory	Alaska
Administrator	Alaska Department of Fish and Game
Survey	Alaska Statewide Harvest Survey
Survey Methodology	List-based mail
Fisheries Covered	Private Boat, charter boat, shore fishing for saltwater finfish species
Temporal Coverage	Annual
Spatial Resolution	Sub-state
Temporal Resolution	Annual
Timeliness	November of following year
State/Territory	Alaska
Administrator	Alaska Department of Fish and Game
Survey	Alaska Saltwater Logbook Program
Survey Methodology	Census logbook
Fisheries Covered	Charterboat fishing for saltwater finfish species
Temporal Coverage	Annual
Spatial Resolution	Sub-state
Temporal Resolution	Trip
Timeliness	Spring of following year
Atlantic	
State/Territory	Maine-Georgia
Administrator	NOAA Fisheries Office of Science and Technology ( ST1)
Survey	MRFS Intercept
Survey Methodology	Access-point intercept
Fisheries Covered	Private boat, charter boat, headboat, shore fishing for saltwater finfish species
Temporal Coverage	March-December (MA-GA); May-October (ME, NH)
Spatial Resolution	State/area fished
Temporal Resolution	Bi-monthly
Timeliness	45 days after wave
State/Territory	Maine-Georgia
Administrator	NOAA Fisheries Office of Science and Technology ( ST1)

<b>Survey</b>	MRFSS Coastal Household Telephone Survey (CHTS)
<b>Survey Methodology</b>	Random-digit-dialing telephone
<b>Fisheries Covered</b>	Private boat, shore fishing for saltwater finfish species
<b>Temporal Coverage</b>	March-December (MA-GA); May-October (ME, NH)
<b>Spatial Resolution</b>	State
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	45 days after wave
<b>State/Territory</b>	Maine-Georgia
<b>Administrator</b>	NOAA Fisheries Office of Science and Technology ( ST1)
<b>Survey</b>	For-Hire Survey
<b>Survey Methodology</b>	List-based telephone
<b>Fisheries Covered</b>	Charter boat, headboat fishing for saltwater finfish species
<b>Temporal Coverage</b>	March-December (MA-GA); May-October (ME, NH)
<b>Spatial Resolution</b>	State/Area fished
<b>Temporal Resolution</b>	Weekly
<b>Timeliness</b>	45 days after wave
<b>State/Territory</b>	Maine-Virginia
<b>Administrator</b>	NOAA Fisheries Northeast Regional Office
<b>Survey</b>	VTR Program
<b>Survey Methodology</b>	Census logbook
<b>Fisheries Covered</b>	Charter boat, headboat fishing for species targeted by Federally permitted vessels
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Trip location
<b>Temporal Resolution</b>	Trip
<b>Timeliness</b>	Variable – data submitted 15th of month following trip
<b>State/Territory</b>	Maine-Virginia
<b>Administrator</b>	NOAA Fisheries Office of Science and Technology ( ST1)
<b>Survey</b>	Large Pelagic Intercept Survey (LPIS)
<b>Survey Methodology</b>	Access-point intercept
<b>Fisheries Covered</b>	Charter and private boat fishing for HMS
<b>Temporal Coverage</b>	June-October
<b>Spatial Resolution</b>	State
<b>Temporal Resolution</b>	Monthly
<b>Timeliness</b>	30 days after month

<b>State/Territory</b>	Maine-Virginia
<b>Administrator</b>	NOAA Fisheries Office of Science and Technology ( ST1)
<b>Survey</b>	Large Pelagic Telephone Survey (LPTS)
<b>Survey Methodology</b>	List-based telephone
<b>Fisheries Covered</b>	Charter and private boat fishing for HMS with HMS permit
<b>Temporal Coverage</b>	June-October
<b>Spatial Resolution</b>	State
<b>Temporal Resolution</b>	Weekly (charter), bi-weekly (private boats)
<b>Timeliness</b>	30 days after month
<b>Atlantic and Gulf</b>	
<b>State/Territory</b>	North Carolina-Texas
<b>Administrator</b>	NOAA Fisheries Southeast Fisheries Science Center
<b>Survey</b>	Southeast Headboat Survey (SEHB)
<b>Survey Methodology</b>	Census logbook, access-point intercept
<b>Fisheries Covered</b>	Headboat fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Trip location
<b>Temporal Resolution</b>	Trip
<b>Timeliness</b>	May of following year
<b>Caribbean</b>	
<b>State/Territory</b>	Puerto Rico
<b>Administrator</b>	NOAA Fisheries Office of Science and Technology ( ST1)
<b>Survey</b>	MRFSS Intercept
<b>Survey Methodology</b>	Access-point intercept
<b>Fisheries Covered</b>	Private Boat, charter boat, headboat, shore fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	State/Area fished
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	45 days after wave
<b>Gulf</b>	
<b>State/Territory</b>	East Coast of Florida-Louisiana
<b>Administrator</b>	Gulf States Marine Fishery Commission GSMFC (RecFIN)
<b>Survey</b>	MRFSS Intercept
<b>Survey Methodology</b>	Access-point intercept

<b>Fisheries Covered</b>	Private Boat, charter boat, shore fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	State/Area fished
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	45 days after wave
<b>State/Territory</b>	East Coast of Florida-Louisiana
<b>Administrator</b>	Gulf States Marine Fishery Commission GSMFC (RecFIN)
<b>Survey</b>	MRFSS Coastal Household Telephone Survey (CHTS)
<b>Survey Methodology</b>	Random-digit-dialing telephone
<b>Fisheries Covered</b>	Private boat, shore fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	State
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	45 days after wave
<b>State/Territory</b>	East Coast of Florida-Louisiana
<b>Administrator</b>	Gulf States Marine Fishery Commission GSMFC (RecFIN)
<b>Survey</b>	For-Hire Survey
<b>Survey Methodology</b>	List-based telephone
<b>Fisheries Covered</b>	Charter boat fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	State/Area fished
<b>Temporal Resolution</b>	Weekly
<b>Timeliness</b>	45 days after wave
<b>State/Territory</b>	Texas
<b>Administrator</b>	Texas Parks and Wildlife Department
<b>Survey</b>	Texas Marine Sport Harvest Monitoring Program
<b>Survey Methodology</b>	Access-point angler intercept, roving boat/trailer counts
<b>Fisheries Covered</b>	Private boat, charter boat fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual (May 15-May 14)
<b>Spatial Resolution</b>	Bay system or Gulf area
<b>Temporal Resolution</b>	Bi-Annual
<b>Timeliness</b>	Prior year estimates available after 6 months
<b>Pacific</b>	
<b>State/Territory</b>	California

<b>Administrator</b>	CA, PSMFC (Pacific RecFIN)
<b>Survey</b>	CRFS Primary Launch Ramps
<b>Survey Methodology</b>	Access-point intercept, census count of boat trips
<b>Fisheries Covered</b>	Private boat fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Sub-state/Area fished
<b>Temporal Resolution</b>	Monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	California
<b>Administrator</b>	CA, PSMFC (Pacific RecFIN)
<b>Survey</b>	CRFS Secondary Launch Ramps
<b>Survey Methodology</b>	Access-point intercept, roving boat counts
<b>Fisheries Covered</b>	Private boat fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Sub-state/Area fished
<b>Temporal Resolution</b>	Monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	California
<b>Administrator</b>	CA, PSMFC (Pacific RecFIN)
<b>Survey</b>	CRFS Beaches and Banks
<b>Survey Methodology</b>	Access-point intercept
<b>Fisheries Covered</b>	Shore fishing from beaches or banks for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Sub-state/Area fished
<b>Temporal Resolution</b>	Monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	California
<b>Administrator</b>	CA, PSMFC (Pacific RecFIN)
<b>Survey</b>	CRFS Man-Made Structures
<b>Survey Methodology</b>	Access-point intercept
<b>Fisheries Covered</b>	Shore fishing from man-made structures for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Sub-state/Area fished
<b>Temporal Resolution</b>	Monthly

<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	California
<b>Administrator</b>	CA, PSMFC (Pacific RecFIN)
<b>Survey</b>	California Commercial Passenger Fishing Vessel Survey
<b>Survey Methodology</b>	Access-point intercept/List-based telephone
<b>Fisheries Covered</b>	Charter boat, headboat fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Sub-state/Area fished
<b>Temporal Resolution</b>	Monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	California
<b>Administrator</b>	CA, PSMFC (Pacific RecFIN)
<b>Survey</b>	CRFS Angler License Directory Survey
<b>Survey Methodology</b>	List-based telephone
<b>Fisheries Covered</b>	Private boat and shore fishing (man-made and beach bank) for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Sub-state/Area fished
<b>Temporal Resolution</b>	Monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	Oregon
<b>Administrator</b>	OR, PSMFC (Pacific RecFIN)
<b>Survey</b>	OR Shore and Estuary Boat Survey (SEBS)
<b>Survey Methodology</b>	List-based telephone
<b>Fisheries Covered</b>	Private boat and shore fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Sub-state/Area fished
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	Oregon
<b>Administrator</b>	OR, PSMFC (Pacific RecFIN)
<b>Survey</b>	OR Shore and Estuary Boat Survey (SEBS)
<b>Survey Methodology</b>	Access-point intercept
<b>Fisheries Covered</b>	Shore fishing for saltwater species or boat fishing for saltwater species in inland waters



<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Sub-state/Area fished
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	Oregon
<b>Administrator</b>	OR, PSMFC (Pacific RecFIN)
<b>Survey</b>	OR Boat Survey (ORBS)
<b>Survey Methodology</b>	Exit counts/Access-point intercept
<b>Fisheries Covered</b>	Private and charter boat fishing for saltwater finfish species in ocean waters
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Port/Area fished
<b>Temporal Resolution</b>	Weekly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	Washington
<b>Administrator</b>	WA, PSMFC (Pacific RecFIN)
<b>Survey</b>	WA Angler License Survey (ALS)
<b>Survey Methodology</b>	List-based telephone
<b>Fisheries Covered</b>	Private boat, charter boat and shore fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Area fished
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	Washington
<b>Administrator</b>	WA, PSMFC (Pacific RecFIN)
<b>Survey</b>	WA Puget Sound Boat Survey
<b>Survey Methodology</b>	Access-point intercept
<b>Fisheries Covered</b>	Private boats fishing in Puget Sound
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Area fished
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	30 days after wave
<b>State/Territory</b>	Washington
<b>Administrator</b>	WA, PSMFC (Pacific RecFIN)
<b>Survey</b>	WA Ocean Sampling Program (OSP)

<b>Survey Methodology</b>	Access-point intercept
<b>Fisheries Covered</b>	Private and charter boats leaving from coastal ports
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	Area fished
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	30 days after wave
<b>Western Pacific</b>	
<b>State/Territory</b>	Hawaii
<b>Administrator</b>	NOAA Fisheries Office of Science and Technology ( ST1)
<b>Survey</b>	Hawaii Marine Recreational Fishing Survey (HMRFS)
<b>Survey Methodology</b>	Access-point intercept
<b>Fisheries Covered</b>	Private boat, shore fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	State/Area fished
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	45 days after wave
<b>State/Territory</b>	Hawaii
<b>Administrator</b>	NOAA Fisheries Office of Science and Technology ( ST1)
<b>Survey</b>	MRFS Coastal Household Telephone Survey (CHTS)
<b>Survey Methodology</b>	Random-digit-dialing telephone
<b>Fisheries Covered</b>	Private boat, charter boat, headboat, shore fishing for saltwater finfish species
<b>Temporal Coverage</b>	Annual
<b>Spatial Resolution</b>	State
<b>Temporal Resolution</b>	Bi-monthly
<b>Timeliness</b>	45 days after wave
<b>State/Territory</b>	Hawaii
<b>Administrator</b>	State of Hawaii Division of Aquatic Resources
<b>Survey</b>	State of Hawaii Commercial Marine License Logbook
<b>Survey Methodology</b>	Fishers reporting
<b>Fisheries Covered</b>	Commercial (trolling, bottomfishing, for-hire and others)
<b>Temporal Coverage</b>	Daily fishing log by fishing area
<b>Spatial Resolution</b>	Established state's statistical fishing areas (for State and Federal waters)
<b>Temporal Resolution</b>	Monthly
<b>Timeliness</b>	Quarterly per cooperative agreement

<b>State/Territory</b>	Guam
<b>Administrator</b>	Division of Aquatic and Wildlife Resources
<b>Survey</b>	Boat-based and shore-based
<b>Survey Methodology</b>	Systematic random sampling surveys using combination of roving creel, bus-route and access point
<b>Fisheries Covered</b>	Commercial, non-commercial and for-hire
<b>Temporal Coverage</b>	Systematic random selection of day, night, weekday and weekend/holiday
<b>Spatial Resolution</b>	Boat-based: Guam's three most actively used ports/Shorebased: Non-military and accessible shoreline areas
<b>Temporal Resolution</b>	Quarterly data expansion is possible; however, annual expansion is mostly used
<b>Timeliness</b>	Quarterly per cooperative agreement
<b>State/Territory</b>	Commonwealth of the Northern Mariana Islands
<b>Administrator</b>	Division of Fish and Wildlife
<b>Survey</b>	Boat-based and shore-based
<b>Survey Methodology</b>	Systematic random sampling surveys using combination of roving creel, bus-route and access point
<b>Fisheries Covered</b>	Commercial, non-commercial, and for-hire
<b>Temporal Coverage</b>	Systematic random selection of day, night, weekday, and weekend/holiday
<b>Spatial Resolution</b>	Boat-based: Three most actively used ports on the western side of Saipan Island/Shorebased: Accessible shoreline areas in the western lagoon of Saipan Island
<b>Temporal Resolution</b>	Quarterly data expansion is possible; however, annual expansion is mostly used
<b>Timeliness</b>	Quarterly per cooperative agreement
<b>State/Territory</b>	American Samoa
<b>Administrator</b>	Department of Marine and Wildlife Resources
<b>Survey</b>	Boat-based and shore-based
<b>Survey Methodology</b>	Systematic random sampling surveys using combination of roving creel, bus-route and access point
<b>Fisheries Covered</b>	Commercial and non-commercial; new emerging for-hire fishery can be added if resources are available
<b>Temporal Coverage</b>	Systematic random selection of day, night, weekday and weekend/holiday
<b>Spatial Resolution</b>	Boat-based: Four most actively used ports on Tutu'ila Island/Shorebased: Accessible shoreline areas along the southern coast of Tutu'ila and Aunu'u Islands
<b>Temporal Resolution</b>	Quarterly data expansion is possible; however, annual expansion is mostly used
<b>Timeliness</b>	Quarterly per cooperative agreement