

# Stakeholder Update

## Fisheries Information System Program



## NOAA FISHERIES

NOAA Fisheries is an agency within the Commerce Department's National Oceanic and Atmospheric Administration (NOAA). NOAA's mission is to understand and predict changes in the earth's environment and conserve and manage coastal and marine resources to meet our nation's economic, social, and environmental needs. NOAA Fisheries provides science and stewardship of the nation's ocean resources and their habitats.

### 2017 Priorities

FIS works to support NOAA Fisheries' three core mission areas:

- Ensure the sustainability of fisheries and fishing communities.
- Recover and conserve protected species.
- Improve organizational excellence.

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### Letter from the Program Director

Welcome to the 2017 Fisheries Information System (FIS) Program Stakeholder Update. This document provides a snapshot of the programs, initiatives, and activities undertaken recently to support our core mission of improving fisheries-dependent data collection systems.

#### Focus on Collaboration and Implementation

FIS has teamed with the National Observer Program (NOP) and National Catch Shares Program (NCSP) to create a combined process for soliciting proposals for fisheries-dependent data collection improvement projects since 2015.

The collaboration serves two purposes. The first is to make it easier for project teams to find and solicit potential funding. Equally important, the partnership builds important connections among NOAA Fisheries, regional entities, and state agencies that are working on interrelated issues—such as electronic monitoring—but lack any formal channels for networking or collaboration.

The partnership also made an additional \$3 million available during the 2016 funding cycle to support regional implementation of electronic technology programs.

This partnership will bring together the technical expertise of FIS, the on-the-ground monitoring of the NOP, and the management tools of NCSP into a working relationship unique in NOAA, and one that could serve as a model across the agency.

#### Products and Tools

Much of the work accomplished by the FIS Program is the result of the pilot studies completed in individual regions and funded through our RFP process. By convening cross-disciplinary communities of practice around core issues in fisheries-dependent data collection, we are able to foster collaboration, and share new tools, processes, and lessons learned throughout NOAA and with our partners.

For instance, the **Quality Management Professional Specialty Group (PSG)** has created an online toolbox with training materials, worksheets, and case studies for improving fisheries data, management systems, and processes. Quality Management ambassadors are available to help apply these tools.

*continued on page 2* ➤

### Program Management Team Review and Highlights

Page 2

### PSG Updates

Page 3

### Case Study: Integrating A-HMS Data

Page 4

### 2017 FIS-Funded Projects

Page 5

### The FIS Mission

We work collaboratively through partnerships to improve access to comprehensive, high-quality, timely fisheries information by investing in three broad areas: (1) Data gaps and data quality; (2) efficient technology and data integration; (3) effective coordination and communication in the design, collection, and uses of data.



## Program Director's Message (continued)

The **Electronic Reporting PSG** has compiled an inventory of electronic reporting (ER) projects to serve as a point of reference for individuals or teams exploring ER solutions for their office or region. FIS' Electronic Reporting Inventory is currently available within NOAA, and work is underway to convert it to a searchable, public database.

Finally, the **Access and Dissemination PSG** continues to enhance the Office of Science and Technology's aggregated landings tool, which enables national and regional searches of non-confidential commercial landings data through one online source.

More information about the work of the PSGs can be found in the PSG Updates section on Page 3.

## Program Management Team Review and Highlights

Over the past year, the Program Management Team (PMT) has continued to advance the FIS Program's overarching goals of improving data management, access, and dissemination; reinforcing the culture of quality management; and maintaining effective partnerships to support collaboration among stakeholders.

At the 2016 PMT Annual Meeting, the team prioritized three key areas: improving communications within FIS and with partners and stakeholders; improving the process of soliciting and awarding projects; and measuring FIS' effectiveness in fulfilling our mission.

### Communications and Outreach

The PMT is dedicated to improving communications channels to build awareness about the FIS Program's work to improve fisheries-dependent data management, access, and dissemination. Over the past year, the Communications & Education Team (CET) has worked with the PMT to create fact sheets that highlight the projects FIS has supported in each region. These two-pagers are intended to serve as resources to Fisheries Information Networks (FINs), NOAA Fisheries Headquarters, Regional Offices, Science Centers, and other partners and stakeholders.

The CET also created an overview presentation articulating what FIS is, what types of projects we fund, and our impact. This presentation is intended to be used by FIS participants to share with peers, colleagues, management, and stakeholders.

In addition to communications tools to share information about the broader FIS Program, the CET has supported each PSG by creating and helping to execute marketing plans, developing presentations, creating and promoting new online content, and guiding collaborative dialogue among data users, partners, and stakeholders.

### Improved RFP Process

In 2016, the PMT worked to modernize and standardize the process for setting funding priorities and soliciting requests. The goal is to avoid duplication and more effectively align approaches to meeting state, regional, and national needs. Beginning with the 2016 cycle, FIS

is managing RFPs—and resulting projects—through the centralized Program Information Management System (PIMS). PIMS allows reporting and tracking across a project's lifecycle, as well as public access to selected information, such as the project goals, team leads, and progress reports.

In 2017, the RFP process is being accelerated. The call for proposals was released in May, with awards announced by mid-August. To accommodate this schedule, pre-proposals will not be required. Among the reasons for the schedule shift is to ensure that our funding cycle matches the fiscal year. This will enable project teams to incorporate funding decisions into their FY18 program budgets.

The FIS Program is an initiative of NOAA Fisheries that resides in the Office of Science and Technology. Program sponsors include the Deputy Assistant Administrator of Regulatory Programs, the Director of the Office of Science & Technology, and the Chief Science Advisor. A complete list of program participants can be found on the FIS website, [www.st.nfms.noaa.gov/fis](http://www.st.nfms.noaa.gov/fis).

### Program Management Team

Made up of representatives from NOAA Regional Offices and Science Centers, as well as the Fisheries Information Networks. Sets policy and budgetary direction.

### Core Business Team

Group within the PMT responsible for overseeing implementation.

### Program Management Office

Manages day-to-day operations of the PMT.

## Professional Specialty Group (PSG) Updates

*The FIS PMT convenes communities of practice through professional specialty groups (PSGs) to address high-priority needs and challenges that span federal, regional, and state data programs. The current PSGs are working on some of the most pressing issues facing fisheries science in an era of rapidly evolving technology, increased pressures on ocean resources, and a commensurate need for greater collaboration. The PSGs are composed of experts from multiple disciplines representing NOAA Fisheries Headquarters, Regional Offices, Science Centers, FINs, and state partners.*



### Electronic Reporting (ER) PSG

The ERPSG continues to expand its virtual Center of Expertise to facilitate knowledge-sharing around development and implementation of software, hardware, and protocols for electronic reporting. The project currently features presentations by developers offering case studies and lessons learned from addressing complex technical challenges in their work to develop and implement ER programs. The presentations include software development examples, best practice guides, and source code. Each Center of Expertise presentation is captured and posted on the FIS Bridge, an internal site, accessible to NOAA employees on the FIS website's home page. As the project grows, the videos will serve as a virtual library of tools and trainings for anyone seeking to address application development needs.

The ERPSG also has been working to make the existing ER Inventory more user-friendly. The Inventory is a list of virtually all NOAA-funded ER projects, and includes such details as the goal and scope of the initiative, collection methods, data transmission protocols, and team lead contact information. Enhancements underway will provide searchable access to the Inventory through the same system used to manage reporting on other funded projects. In addition to increasing access and utility, this move will reduce duplication of effort in ER project development and enhance timeliness of updates moving forward.



### Access and Dissemination (AD) PSG

The ADPSG is continuing to enhance the functionality of the Science and Technology Division's commercial fisheries landings tool to allow users to access landings data from around the country with one flexible, web-based tool. This included expanding the availability and ensuring the accuracy of historical data available through the tool. Over the coming months, the ADPSG will be soliciting feedback from users on the tool in its current state. The continued development of this tool will aid in increased regional collaboration and better access to data.

The group also continued work on the development of InPort, a metadata repository that facilitates both the input of and access to NOAA research metadata. This project has required close collaboration with state partners and FINs to compile regional lists of commercial vessels, federally permitted vessels, vessels fishing in federal waters, and state vessels.



### Quality Management (QM) PSG

The QMPSG focuses on creating an agency-wide culture of quality management through the continuous improvement of business practices. Members serve as QM ambassadors, sharing ideas and promoting QM principles through training and outreach efforts. To aid these efforts, the QMPSG has been working to update an online toolkit that provides a centralized space to share QM exercises, tools, and case studies.

These tools offer guidance to enhance leadership engagement, strategic planning, the development of process improvement tools, and efforts to improve data quality. Continuing to educate colleagues and partners on the availability and uses of this resource will be a key priority for the coming year.

As part of that outreach, the PSG has also worked with the CET to develop a marketing plan and related materials, including presentation materials for QMPSG members to share with their colleagues and leadership. The presentation highlights the value of incorporating QM tools and principles as an integral part of any fisheries dependent-data collection, analysis, or reporting program, in order to maximize data quality and process effectiveness and efficiency.

## Case Study: Integrating Atlantic HMS Data

This multi-year project to develop the Atlantic Highly Migratory Species Information System (A-HMS) is a collaboration between FIS, the Atlantic HMS Management Division (HMMSD), and the Southeast Fisheries Science Center (SEFSC). The project will provide users with dependable access to more comprehensive, accurate, and timely A-HMS data critical to management decisions, and is developing solutions that are applicable to other NOAA Fisheries programs.

### The A-HMS Data Challenge

Fisheries data managers are responsible for organizing their peers' complex, interrelated data in ways that enhance efficiency, ensure access, and guide critical decision-making processes. Working with A-HMS makes this task significantly more challenging. A-HMS data covers numerous species—e.g. tunas, sharks, swordfish, billfish—which cross international boundaries as they migrate throughout the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico.

In addition to falling under multiple domestic and international requirements, management decisions for these species often entail interpreting large amounts of data from numerous, often divergent systems.

As many of these species are highly prized by recreational and commercial fishermen, effective, sustainable management is a top priority for stakeholders.

To better provide scientists and managers with more comprehensive, accurate, and timely A-HMS data, the SEFSC, with support from FIS, embarked on the **Integrated Atlantic Highly Migratory Species Information System project**.

### The Solution: Modernization and Integration

At its core, the project is working to modernize A-HMS data collection and reporting systems, combining a wide array of information from separate databases into a new system that will enhance data accuracy, accessibility, compatibility, and integration.

Covering such a wide geographic area and multiple user groups, A-HMS data comes from numerous sources. Systems had been developed at different times, with varying levels of sophistication, with minimal capacity to integrate with one another, and delicate infrastructures that were difficult to maintain and update.

The SEFSC team set about building a Unified Data Processing (UDP) system. The UDP processes and validates the disparate data streams on a nightly basis, removing redundant data and storing the resulting high quality information in the SEFSC Data Warehouse.

Once the data is available in the Data Warehouse, users can access it through the Southeast Fisheries Reporting (SEFR) platform, an online data reporting system that is currently internal but will ultimately be available to

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provide varying levels of access to users, ranging from NOAA Fisheries staff to the general public.

The new system represents several key improvements. As a relatively nimble system, it will require less maintenance and can be more easily adapted for future needs. For instance, as electronic logbooks become more prevalent, the new system is poised to easily integrate that data.

The A-HMS project has also resulted in the development of quality control systems that could directly apply to future NOAA Fisheries projects. For example, the A-HMS project spurred the development of quality control systems that have boosted efficiency in data processing time, as well as management and dissemination.

### Continued Improvement and Expansion

Looking to the future, the SEFSC expects to continually expand access to A-HMS data, starting with internal users and moving to the general public. Bringing in data from other regions and continuing to link data sets together will generate a more holistic data picture that can better inform management decisions and meet the needs of all customers.

The progress to date with the A-HMS project reflects FIS' priorities of innovation and collaboration, with process enhancements that will not only facilitate the management of the A-HMS fisheries, but drive improvement of data integration and management on a broader scale.

## 2017 FIS-Funded Projects

For a complete list of all FIS-funded projects, visit the *Current Products and Initiatives* tab at [www.st.nmfs.noaa.gov/fis/](http://www.st.nmfs.noaa.gov/fis/). All projects support fisheries, fishing communities, and protected resources through the promotion of science and communications.

Project Name	Description	Support for FIS Vision	Lead Office
Expansion of Economic Data Relating to Alaska Commercial Fisheries	Updating Alaska's Commercial Operator's Annual Report on exvessel value and wholesale information so that historic reports (now paper-only) are captured electronically and integrated with existing dataset to ensure availability of higher quality, more comprehensive economic data	Improves data availability to assist with accurate analysis	Alaska Fisheries Information Network (AKFIN)
Fisheries Information Network Data Issue Tracker	Providing a centralized web- or e-mail-based system for FIN data users to submit potential data issues for review and resolution by FIN staff in the AKFIN and Pacific Fisheries Information Network (PacFIN) data warehouses	Supports the delivery of more accurate fisheries-dependent information	AKFIN
Implementation of Tablet Devices in the North Pacific to Automate Collection of Vessel Sample Station Verification and Flowscale Inspection Data	Testing the capability of the North Pacific Observer Program to collect data on a tablet to download information into the AFSC central database upon return to the main office, along with improving the inspection processes for observer sample stations and motion compensated scales via EM/ER	Streamlines collection of high-quality fisheries-dependent data	Alaska Fisheries Science Center (AFSC)
Whole Fish Tracking Application for Data Quality Management (QM)	Improving data quality in the North Pacific Observer Program by creating a system to electronically track whole fish specimens collected by observers in the field through the chain of custody to the Seattle office	Integrates QM into everyday business practices and improves access, accuracy, and quality of data	AFSC
Electronic Monitoring (EM) Pre-Implementation in Alaska	Developing use of EM to account for retained and discarded catch in the North Pacific Observer Program for the fixed gear vessels in the groundfish and halibut fisheries in Alaska; this is moving to an operational program in 2018	Adapts fisheries-dependent data collection system to new technologies, improving data quality and timeliness	AFSC
Pre-Implementation of Stereo Cameras; Development of Automated Image Review of Longline Serial Catch Events and Pot Cod Sorting Table	Developing a machine vision stereo camera system and video monitoring of the pot cod fleet—including automated image review—to collect fisheries-dependent data to be used in the North Pacific Observer Program	Develops tools for timely fisheries information reporting; supports Observer programs	AFSC
Continued Development and Expansion of the Atlantic Coastal Cooperative Statistics Program (ACCSP) Online Data Query Tool	Developing and implementing modules for biological data queries, management and approval of confidential requests and accounts, and alignment of confidentiality in display practices with regional and national efforts in the ACCSP's online data tool; will be shared with GulfFIN to increase efficient use of resources and promote consistency	Promotes accessibility of comprehensive, well-managed data, along with inter-regional FIN cooperation and data dissemination consistency	Atlantic Coastal Cooperative Statistics Program (ACCSP)
Redevelopment of the Standard Atlantic Fisheries Information System (SAFIS) in Support of Coastal and Regional Data Visioning Initiatives	Rebuilding SAFIS as an integrated data reporting system for biological and bycatch data with the capability to later include EM, from its current iteration as a series of stand-alone modules collecting dealer landings and vessel trip reports	Improving data quality and fostering collaboration between partners	ACCSP
Exploring Advancements in EM Technology for a Comparative Analysis	Testing and comparing the effectiveness of two new implementations of EM: eEye system, a high-definition, automatic rapid still-frame photography technology; and FlyWire, a low-cost, high-definition modular system with image recognition and underwater cameras	Supports implementation of EM coverage by providing information to compare the benefits and potential drawbacks of various EM systems	Greater Atlantic Region (GARFO)
Development of an Integrated Electronic Reporting (ER) System that Utilizes the Gulf States Universal Trip Ticket Application	Implementing encoded cards to interface with the Gulf States Marine Fisheries Commission new trip ticket application to better position the states using the system to eventually eliminate paper trip tickets and associated aging technologies	Enhances ER for fishery-dependent data in the Gulf of Mexico	Gulf Fisheries Information Network (GulfFIN)
Gulf States Electronic Dealer Reporting: Modernization and Improved Quality Control (QC)	Converting the trip ticket ER system from a PC-based to a web-based system on a centralized server to offer flexibility in how commercial dealers can report and to develop improved electronic quality control methods	Improves ER tools to facilitate higher-quality, more timely data	GulfFIN
Improving GulfFIN Data Management System (DMS) to Provide High Quality Data for Stock Assessments	Updating and modifying the GulfFIN DMS, a regional repository for biological data, specifically age and biological measurement, with real-time QC/QA measures, change-tracking capabilities, remote access for federal and state partners, report creation capability, and other enhancements	Provides easier, more efficient access to higher-quality data	GulfFIN
Continued Support of ER Technologies in the Northeast	Supporting, expanding and enhancing electronic Vessel Trip Reports (eVTR) and the transition of the Fisheries Logbook Data Reporting System (FLDRS) to operational use and broader coverage, including the increased integration peripheral devices	Supports ER system expansion and enhancements	Northeast Fisheries Science Center (NEFSC)
Northwest Fisheries Science Center (NWFSC) Observer Program Technology Enhanced Collection System (OPTECS)	Developing OPTECS, a customized, adaptable fishery-dependent electronic data collection system to be used by NWFSC observers at sea in all West Coast groundfish fisheries, with all gear types and environmental conditions	Promotes better data collection at its source, improves QA/QC, and maximizes the value of data through improved dissemination	Northwest Fisheries Science Center (NWFSC)
West Coast Groundfish Observer Program (WCGOP) Trip Selection System	Upgrading random vessel selection for WCGOP trip level coverage from a tedious manual process to an efficient, automated system	Supports development of ER tools for efficient collection of high-quality fisheries-dependent data	NWFSC
EM Pre-Implementation in Hawaii-Permitted Longline Fisheries	Continuing pre-implementation of EM in the Hawaii-permitted longline fisheries by purchasing additional systems and data storage, and providing personnel to coordinate with vessels on logistics and video review	Supports ER and EM in the Pacific Islands Region	Pacific Islands Fisheries Science Center (PIFSC)
ER Implementation in Hawaii and American Samoa-Permitted Longline Fisheries	Implementing ER in the longline fisheries by completing data encryption for the software, purchasing satellite data transmission, and providing personnel to conduct software training and equipment logistics for vessels	Supports ER and EM in the Pacific Islands Region	PIFSC

continued on page 6 ➤

## 2017 FIS-Funded Projects (continued)

Project Name	Description	Support for FIS Vision	Lead Office
Pacific Longline Logbook Hoshin Kanri Workshop	Conducting a facilitated Hoshin Kanri strategic planning workshop to develop detailed Data Management Improvement for the Hawaii, California, and American Samoa Longline Logbook data system	Supports training on QM principles, strategies, and tools	PIFSC
Pacific Islands Region Observer Program ER and EM Pre-Implementation	Developing and assessing technical infrastructure and requirements for a mobile application to augment observer data collection while improving timeliness and accuracy of observer data, thus reducing program expenses	Supports ER and EM in the Pacific Islands Region	Pacific Islands Regional Office (PIRO)
Data Access Control Incorporating User Account Permission to Access Confidential Data	Building software for different levels of confidentiality that will allow a single web-based portal to serve the needs of non-confidential and confidential users in the Southeast Region, along with building the ability of users to identify suspected errors for particular records	Increases accuracy and accessibility of data supplied to the agency and made available to the public	Southeast Fisheries Science Center (SEFSC)
eTIP implementation	Expanding the SEFSC's eTIP tablet-based application for dockside collection of biosampling data by equipping 10 field samplers with requisite hardware	Enables more accurate data collection of bio-statistical information to support stock assessment	SEFSC
Evaluation of ER in the Southeast Region Headboat Survey (SRHS)	Evaluating and quantifying the increased timeliness, streamlined compliance monitoring, increased efficiency, reduced costs, and improved data accuracy resulting from the SRHS transition from paper to electronic logbooks	Provides valuable guidance for improving strategic planning and future ER implementation	SEFSC
Expansion and Enhancement of SRHS Electronic Reporting Systems	Increasing the utility of the SRHS database for port agents, data managers, and vessel representatives through notification and messaging systems	Maximizes efficiency and increases capabilities of existing ER system	SEFSC
Online Access to Southeast Region Fisheries-Dependent Data	Enhancing and expanding the utility of a single portal where scientists can access information for input to stock assessment models, and so that the public can access the information in a non-confidential form	Improves accuracy, timeliness, and accessibility of fisheries- dependent data from fisheries in the Southeast	SEFSC
SRHS Automated Compliance Tracking and Alerts	Incorporating automation procedures to effectively monitor compliance with electronic logbook reporting in the SRHS and communicate status to vessel representatives	Maximizes the efficiency of existing ER system	SEFSC
System Upgrade to Support Implementation of Electronic Trip Tickets in MS and TX	Improving processes to move state-based data on seafood dealer electronic trip reports from FINs to the SEFSC warehouse, eliminating erroneous data and meeting national and regional reporting requirements	Increases accuracy, timeliness, and completeness of ER data	SEFSC
Upgrade the Commercial Landings Monitoring (CLM) Annual Catch Limit (ACL) Monitoring System	Rebuilding the CLM to improve reliability of system- produced estimates, to redesign the compliance module to streamline dealer notifications and meet the needs of the Office of Law Enforcement, and to make the reporting capability more intuitive and user-friendly	Improves timeliness and quality of data; improves dissemination of management advice and compliance information	SEFSC
Upgrade to QC and Modernization of SEFSC Vessel Operating Units (VOU) Databases	Modernizing and incorporating additional data in the VOU database, which compiles vessel-specific effort, physical characteristics, crew size, and offloading ports, along with integrating data into broader SEFSC data warehouse	Increases accuracy, timeliness, completeness, and accessibility of data; integrates information from multiple databases	SEFSC
Develop a Strategic Plan for Implementing ER Systems on For-Hire Vessels in the Southeast Region	Developing a strategic plan for implementation of ER systems on federally-permitted for-hire vessels in the South Atlantic Council and Gulf of Mexico Council regions, taking into account the needs of regional and federal offices	Establishes regional and national best practices for information collection, management, and dissemination	Southeast Regional Office (SERO)
Recreational Permit/ER for Private Recreational Anglers	Collaborating with the Snook & Gamefish Foundation, ACCSP, NMFS, and SAFMC to create individual recreational snapper grouper permits and provide an ER platform for catch and discard, eventually leading to improved and additional data for stock assessments, while potentially reducing bycatch in closed areas	Expands ER technologies	SERO
South Atlantic Council Outreach for ER Activities	Developing training, outreach programs, and a customer service support system about ER implementation systems targeted to charter captains and law enforcement officers	Supports ER outreach plans and communication efforts	SERO
Pacific Highly Migratory Species Work Group (PacHMS) QM Workshops	Conducting facilitated Hoshin Kanri and Value Stream Mapping (VSM) for PacHMS to aid in improved coordination of management and information reporting from U.S. HMS fisheries throughout the Pacific	Supports training on QM principles, strategies, and tools	Southwest Fisheries Science Center (SWFSC)
ER Training and Outreach	Promoting adoption of ER data collection systems developed by the SWFSC through one-on-one training and demonstrations to stakeholders and potential end users	Supports ER outreach plans and communication efforts	SWFSC
VSM Workshop for Pacific Pelagic Longline Data Flow	Conducting a VSM workshop on Pacific pelagic longline data flow, enabling regions and centers to move toward streamlined data management across the Pacific	Supports training on QM principles, strategies, and tools	SWFSC
ER in West Coast Highly Migratory and Coastal Pelagic Species Fisheries	Developing an implementation plan for electronic logbooks and fish tickets in the West Coast highly migratory and coastal pelagic species fisheries	Expands use of EM/ER technologies	West Coast Region (WCR)
Pacific Permit Database	Integrating state and federal permit databases into one virtual location maintained by PacFIN, allowing permit data to be distributed back to the public, partners, and stakeholders	Builds and integrates information management systems across regions, creating easy access to high-quality, comprehensive, timely information	WCR