

REGIONAL ELECTRONIC TECHNOLOGIES IMPLEMENTATION PLAN FOR WEST COAST MARINE FISHERIES JANUARY 27, 2015

Introduction

In recent years, the National Marine Fisheries Service (NMFS) and the Pacific Fishery Management Council (Pacific Council) have implemented marine fisheries management regulations that require near real-time reporting of retained catch fishery-related impacts by species at the vessel level. These regulations have challenged the methodological and budgetary limits of contemporary data collection methods such as on-board observers, self-reporting, dockside monitoring, and filing landing receipts. Fishery managers are striving for greater monitoring, accounting, and reduction of bycatch and increased target stock catches via increasingly more sophisticated regulatory approaches. Electronic Technologies (ET) are emerging as a more effective and efficient solution to meet these challenges and demands. For the purposes of this plan, ET includes vessel monitoring systems (VMS), other vessel movement monitoring (VMM) technology, electronic logbooks (EL), video cameras for observer-type electronic monitoring (EM), electronic fish ticket (EFT) systems and other technologies that provide EM and electronic reporting (ER). Given governmental and industry budget constraints, the use of ET is emerging as a more effective and efficient solution to meet these challenges and demands. Additionally, the potential ability for ET to provide fishery-dependent data that are spatially explicit could be transformative for stock assessments.

In May 2013, NMFS issued [Policy Directive 30-133](#), Policy on Electronic Technologies and Fishery-Dependent Data Collection. This Directive called for the development of Regional Electronic Technology Implementation Plans to address regionally-specific fishery data collection issues and needs. Importantly, the Policy Directive did not state that electronic technologies were appropriate for all of a region's fisheries or fishery management plans (FMPs). Rather, it called for the identification of fisheries or FMPs for which electronic technologies are appropriate and planning for organized regional implementation.

A truly regional electronic technology implementation plan needs to take into account the roles of several key partners in addition to NMFS. The Pacific Council is responsible for the policy role in the development of the regulations necessitating the collection of data and, in some cases, regulatory

requirements for the use of ET. While there is always a linkage between Pacific Council management policy and the design of the data systems, federal, state, and tribal agencies are responsible for implementing fishery monitoring systems. The States of Washington, Oregon, and California, and Northwest Indian Tribes have important roles as the original collectors of most shore-based catch accounting information. In that regard, the Pacific States Marine Fisheries Commission (PSMFC) has assisted NMFS in implementing data collection systems. The PSMFC also has undertaken the important long-standing role of being the clearinghouse for West Coast fishery catch information from NMFS, state, and tribal systems. Most recently, the PSMFC has played a key research role in the development of ET data and technology from the use of camera-based electronic monitoring systems. This research supported the 2014 recommendation to NMFS by the Pacific Council to implement experimental fishing permits (EFPs) to continue testing EM in various sectors of the groundfish fishery. These EFPs are to inform the Council and NMFS policy and regulatory processes scheduled for establishing ET regulations as appropriate in 2016 and 2017.

ET Plan information distribution and outreach to the public is important in the successful implementation of the Plan. The Pacific Council forums will serve as the primary public outreach mechanism, including the Council and advisory body meetings, website postings, and between meeting informational distributions. (See <http://www.pcouncil.org/groundfish/trawl-catch-share-program-em/>.) The NMFS Office of External Affairs will also provide information and outreach to the public on this Plan.

Fish manager, enforcement, industry, public, and academic access to data will depend on federal and state confidentiality policies. As new technologies and databases are developed, confidentiality policies will need to be reviewed and updated. To the extent possible, Pacific Fisheries Information Network (PacFIN: <http://pacfin.psmfc.org/index.php>) and Recreational Fisheries Information Network (RecFIN: <http://www.recfin.org/>) will be expanded to include data that results from this Plan and to report on status of the technologies employed.

Incremental Planning Horizons

This Plan has a ten-year horizon that includes the three phases detailed below. This Plan is based on comments and guidance received at the September and November 2014 Pacific Council Meetings

and has been reviewed by the senior leadership of NMFS West Coast Region, PSMFC, and Pacific Council. This Plan will be routinely reviewed and updated.

1. Initial Implementation Projects in 2015-2017. Implementing Pacific Council actions taken in 2014 and implementing processes for ET initiatives or major policy issues identified prior to 2015. (.These policy issues concern reducing the observer costs to the industry in the Pacific Groundfish fishery, supplementing observer coverage in the HMS fishery for the purposes of catch and bycatch accounting, and improving inseason management through timelier reporting via electronic logbooks and fish tickets (Attached is recent update on current activities).
2. Expansion of current projects in 2018-2020. Reviewing and refining projects implemented in the prior triennium, developing additional recreational projects; developing, revising, and integrating databases; and developing data access policies.
3. Implementing advanced ET projects in 2021-2024. Pursuing projects based on improved ET capabilities and on better tools to report the information and data.

2015-2017—Initial Implementation Projects

- Submit funding needs to NMFS for Fiscal Year FY2015-2017 consideration, including Pacific Council policy and technical workgroups, to support program development, implementation, and operations.
- Expansion of State and Tribal EFT capabilities beyond Individual Fishing Quota (IFQ) trawl fisheries to aid inseason management and reduce costs.
 - In place for Groundfish Shorebased Trawl IFQ
 - In process for sablefish
 - Needed for remaining groundfish sectors, Highly Migratory Species (HMS), Coastal Pelagic Species (CPS), and salmon troll fisheries
- Umbrella Rulemaking - EFT regulations to cover landings from all FMP fisheries (Groundfish, Salmon, CPS, and HMS fisheries)
- Integration of Tribal EFT System with State and Federal systems
- Implement ELs to improve inseason management
 - Needed for Groundfish Whiting IFQ and Shorebased Trawl IFQ

- Needed for Groundfish commercial sectors, HMS Drift Gillnet, HMS Commercial passenger fishing vessel fleet (CPFV; party/charter vessels)
- Camera-based EM systems to reduce costs or supplement current levels of monitoring.
 - In process for whiting IFQ trawl pending EFP and rule process
 - In process for bottom trawl and fixed gear groundfish sectors pending EFP and rule process
 - Needed for non-whiting mid-water trawl and HMS Drift Gillnet fishery
- VMM to improve technological and legal aspects
 - Updating current VMS reporting and equipment requirements
 - Taking into account use of groundfish EM projects
 - Possible use of other data logging technology.
 - Current use of VMS in groundfish fishery has not withstood legal challenge.
- Standards/Type approval rulemaking for third-party providers of ET products and service.
- Policy consideration of rulemaking on “who pays” issues
 - Cost responsibilities of government, industry, and other parties in monitoring and reporting programs
 - Collection and analysis of more and better cost data
 - Fully assess the cost-effectiveness of EM and sharing of costs between NMFS and the industry.
- Development of new confidentiality, IT security, data storage, and data sharing policies with NMFS, the Pacific Council, States, PSMFC, and Tribes (including Northwest Indian Fisheries Commission), industry, and public.
 - Current policies would be used in the interim.
- Integration of EFT, EL, and other data such as VMS data with existing State and Federal reporting and permit systems.
 - Revise systems so data is easier to link.
- Provide outreach and encouragement to states, tribes, and industry and scientific Communities to research ET advancements
 - EFPs
 - Voluntary cooperative research
 - Funding opportunities such as NMFS Fishery Information System/National Observer RFP, Salstonstall-Kennedy, and National Fish and Wildlife Foundation Grant Programs.
 - Emphasize research on using ET to effectively determine species of fish discarded.
- Review and refinement of ET Plan by PSMFC’s PacFIN Data and RecFIN Technical Committees.

2018-2020—Expansion of Existing Projects and Data Integration/Sharing Projects

- Develop data standards for industry groups who choose to develop their own ELs and other ET tools, to encourage investment and increase the suite of options available to industry to meet regulatory requirements.
- Review EL considerations for all FMP fisheries and related state fisheries, including recreational, to identify additional fisheries where EL may be useful or to facilitate integration with other data.
- Consider specialized recreational ET projects to enhance monitoring and general sampling.
- To improve access and allow greater use of fishery-dependent data, development of secured databases access portals with appropriate restriction levels for:
 1. State, tribal, and Federal fish managers and stock assessors;
 2. state and Federal law enforcement officials;
 3. Industry;
 4. academics; and
 5. the general public.

2021-2024—ET-Advanced Projects

- Revise monitoring regulations, if appropriate, due to improvements in camera technology.
 - Update and revise ET regulations for FMP fisheries as appropriate.
 - Geo-Spatial Referencing of state and federal regulations to allow easier interpretation and compliance with spatial regulations.

Evaluation of Implementation Progress

Routine reports at Pacific Council meetings and routine reports to the NMFS Leadership Council should be expected to track, evaluate, and report on progress. Metrics such as the number of fisheries that have moved from ET implementation plans to actual implementation and the percent of landings covered by EFTs and, where appropriate, the percent of landings covered by EL compared to the current situation could be used to evaluate progress. Pre- and early Phase I activities are described below (See WCR Electronic Technologies Update January, 2015).

Costs

The major costs associated with implementing the ET Plan concern regulatory processes, ET related permitting processes, equipment, data transmission, data analysis, and data management and storage. In the Groundfish IFQ fisheries, fishermen will be given a choice to carry an observer or carry a camera, however the objective of the groundfish program is to reduce monitoring costs to the fleet while maintaining full accountability. In the HMS commercial fisheries, the objective is to add cameras to boats to supplement existing observer coverage thereby increasing fleet monitoring, so it is possible that overall costs would increase. Electronic reporting projects such as the EFT and EL have some cost amelioration because they are either replacing or substituting existing paper systems.

These costs are predicated on the assumption that the industry will pay for equipment costs while NMFS pays either directly or indirectly through the PacFIN and RecFIN grants, for the data collection, review, analysis, and integration with other data systems.

This Plan and the cost projections (Table 1) will be refined and updated as the Plan is implemented. The Pacific Council, NMFS WCR, and PSMFC will consult with the states and tribes while NMFS WCR will also consult with the Science Centers, Northwest and Southwest Sections of the NOAA Office of General Counsel, and West Coast Division of Law Enforcement. One goal is to improve the major reporting systems-PacFIN and RecFIN through the use of ET. PacFIN and RecFIN grants should be expanded through the provision of funds that will be used in competitive RFP processes for projects that support, among other things, EL, EFT, port sampling, and integration with state and federal permit, observer, and biological sampling programs.

Allocation of funds from FY 2015 Congressional appropriations are needed to implement this Plan. FY 2016 and 2017 appropriations will be also be needed to fund this Plan. The costs below represent best estimates made in late 2014 for the governmental tasks of implementing the ET projects listed above for 2015-2017. Consultation with the states, tribes, and with various elements of NMFS is needed to refine these costs as the Plan progresses.

NMFS is now reviewing ET proposals by various industry and environmental groups, states, and NMFS Science Centers and Regions to the 2015 Fishery Information System/National Observer

Program Request for Proposals and by industry, environmental, and academic groups to the 2014-2015 Saltonstall-Kennedy Grant Program.

Status of Electronic Technology in West Coast FMP Fisheries

The current application status of ET in FMP fisheries is summarized in Table 2.

Table 2 does not show efforts by industry groups such as Fish Trax (www.fishtrax.org), eCatch (www.ecatch.org), or Seatstate (<https://acct.seastateinc.com/>). Fish Trax is an electronic fishery information system that among other things is able to trace fish from point of capture (including fish quality, stock identification, area, and oceanographic information) to the consumer. The Nature Conservancy has worked with California fishermen to develop eCatch, a tool that provides a way for fishermen to collect, map and share their fishing information. Members of the Pacific whiting fishery are working with SeaState to pool bycatch data for use in real time mapping of “hotspots” so vessels and fleets can avoid harvesting key bycatch species. The Fisheries Marking Association has undertaken research on video cameras and the Sportfishing Association of California is developing a CPFV logbook.

Table 1: Annual Costs and Additional¹ Funding 2015 Needed to Implement the West Coast Regional Electronic Technology Plan for the 2015 - 2017 Phase.

Agency	Proposed Funding			Task Summary
	2015 Cost/Additional Funding	2016	2017	
NMFS	\$250,000/\$250,000	\$ 350,000	\$ 450,000	Implement Groundfish Trawl IFQ EM; Develop EM for DGN, e-logbooks and VMM ²
PSMFC	\$440,000/\$250,000	\$ 600,000	\$ 700,000	Implement Groundfish Trawl IFQ EM ³ , assist HMS, data integration, work w states
PFMC	\$163,000/\$352,000	Included in 2015	\$ 140,000	Policy and Regulation Development for EM for Trawl IFQ and DGN, e-Logbooks, and refined VMS ⁴
States and Tribes	\$ -	\$ 400,000	\$ 400,000	Competitive RFP process funded through PacFIN/RecFIN grants ⁵
Total	\$850,000/\$852,000	\$ 1,350,000	\$ 1,690,000	

¹Additional to funding for existing responsibilities and to account for timing of NMFS Budget Processes.

²2.5 new FTE for EFP management, EM Permit Qualification, etc., as Plan develops add 1 FTE per year, does not include use of existing staff resources, existing or new staff associated with Science Center or Office of Law/State Enforcement activities, once regulations are implemented.

³Three camera reviewers and 1/2 time analyst, administrative costs per year. Funded through Sept 2015.

⁴Council actions at six Council meetings, intermediate meetings of a formal advisory body, coordination work between Council and NMFS staff. 2015 additional funding to support 2015 and 2016 activities.

Council staff will be responsible for MSA and draft NEPA documentation, including interaction with NMFS staff during the Secretarial review process of any regulatory action.

⁵Selection process to be determined.

Table 2: Electronic Technology Current Application Status and Objectives for Future Implementation

Fishery/Application	Current Applications	Objectives
Groundfish		
E-Logbooks	Whiting IFQ; Shorebased IFQ	
E-Fish Tickets	Whiting IFQ; Shorebased IFQ; Sablefish (in process)	OR: Expand Use; CA: Phased Approach; WA Improve Data Flow to Implement
Camera Systems	Whiting IFQ; Mid-water and bottom trawl; Fixed gear IFQ (in	Regulations of Whiting IFQ in 2016, others in 2017; EFPs in 2015 for all but mid-
VMS/VMM	VMS for all vessels fishing in Federal waters; VMM process in 2015	VMM No Later Than 2017-2018 Cycle
Other		
Highly Migratory Species		
E-Logbooks		Albacore troll fishery: priority for industry
E-Fish Tickets		OR: Expand Use; CA: Phased Approach; WA: Improve Data Flow to Implement
Camera Systems		Drift Gillnet Fishery: development in 2016-2017; Implementation in 2018
VMS/VMM	VMS for vessels landing groundfish; VMM Process in 2015	VMS in 2016 for IATTC Compliance in Vessels > 74ft
Other		
Coastal Pelagic Species		
E-Logbooks		Squid fishery for quota monitoring
E-Fish Tickets	OR: Partially in use; CA: Beta-testing in 2015	OR: Expand use; CA: Phased approach; WA: Improve data flow to implement
Camera Systems		
VMS/VMM		
Other		
Salmon		
E-Logbooks		
E-Fish Tickets		Non-Indian and Treaty Indian troll for quota monitoring; OR: Expand use; CA:
Camera Systems		Phased approach; WA: Improve data flow to implement
VMS/VMM	VMS for vessels landing groundfish	
Other		
Recreational		
E-Logbooks	CA: CPFV testing in 2013-14	CA: CPFV for groundfish and bluefin tuna in 2015; Salmon to supplement
E-Fish Tickets	NA	shoreside sampling
Camera Systems		
VMS/VMM		
Other		Evaluation of smartphone catch reporting; CA: Tablets for port samplers

WCR Electronic Technologies Update January, 2015.

The Pacific Fishery Management Council has recently approved alternatives for the voluntary use of electronic monitoring in the Pacific whiting, fixed gear, and bottom trawl fisheries components of the Pacific Groundfish Trawl Rationalization Program.

The Council also recommended to NMFS electronic monitoring Exempted Fishing Permits (EFPs) for these sectors. The purpose of these EFPs is to test the Council's alternatives and options before moving them into regulation. Among other things, these EFPs will exempt participating vessels from the current 100% observer requirement.

NMFS, with guidance from Pacific States Marine Fisheries Commission, is now working with the industry on developing the terms and conditions of these EFPs. NMFS expects to issue these EFPs by spring 2015. The expectation is that the Whiting EFP will lead to 2016 regulations, the other EFPs to 2017 regulations.

Electronic Monitoring is also being considered for the California Drift Gillnet Fishery. The goal is to have regulations in place for 2018, using 2016 and 2017 as developmental years.

Electronic Fish Tickets are already in use for the Groundfish Trawl fishery. The Council has approved their use for the sablefish fixed gear fishery. There is interest by the NMFS the Council and the states to convert the state paper fish ticket systems to electronic systems, especially for FMP fisheries.

Electronic logbooks are envisioned for those fisheries deploying electronic monitoring and other fisheries such as sablefish and for the California Commercial Passenger Fishing Vessel Fleet (CPFV). The Sportfishing Association of California and California Department of Fish and Wildlife have initiated work on the CPFV logbook.

NMFS is seeking to expand VMS to drift gillnet vessels, 24 meters or greater, that fish for tuna and tuna-like species in the Eastern Pacific Ocean. This is in response to a resolution passed by the Inter-American Tropical Tuna Commission (IATTC) that requires implementation in 2016.

There has been recent litigation concerning vessels transiting through groundfish restricted areas. This litigation has signaled a need to improve the ability to track vessels. The Pacific Council is reviewing its current VMS policies and various technologies to address the issue (i.e. electronic monitoring systems, data loggers, enhanced VMS units, and increased ping rates).