Regional Electronic Technology Implementation Plan: April 2017 West Coast Update For May Leadership Council meeting on May 24-26, 2017

Recent and Upcoming Pacific Fishery Management Council (Council) and NMFS WCR Actions

April 2017

Final Action on Electronic Monitoring (EM) of Non-whiting Midwater and Bottom Trawl Fisheries Regulations and Update on Exempted Fishing Permit (EFP).

At its April 2017 Council meeting, the Council received an update on ongoing EFPs and modified several of the preferred alternatives they had adopted in September 2014 for the non-whiting midwater trawl and bottom trawl fisheries:

- NMFS, in consultation with the Council, to develop a process that does that does not require rulemaking to adjust the discard species list;
- NMFS to maintain the current practice of having Pacific States Marine Fisheries Commission (PSMFC) perform video review responsibilities, but develop protocols for transferring financial responsibility for the video review from NMFS to the industry. The Council would like NMFS to examine the feasibility of using a sole provider (i.e., PSMFC) model indefinitely;
- NMFS and Council staff work with the Groundfish Electronic Monitoring Policy Advisory Committee/Technical Advisory Committee, Groundfish Management Team (GMT), and other appropriate Council advisory bodies to develop a process for reducing the level of video review to the minimum level necessary to audit logbooks, and to develop new discard mortality rates for halibut when vessels use EM; and
- Revisions to the draft regulations to include: (1) changes in the final preferred alternatives adopted by the Council; (2) a requirement for self-enforcing agreement groups to submit an annual report to the Council; and (3) deep-sea sole, sanddabs, and starry flounder in the list of species that can be discarded. Deep-sea sole and sanddabs would be counted as individual fishing quota (IFQ) species, if mixed with IFQ species; and a provision to allow state-managed species to be retained when using EM, but prohibit sale or use of those fish unless allowed by the state.

NMFS is scheduled to update the Council on its progress on the above items in September 2017. At that time, the Council may finalize its recommendation regarding industry funding of video review.

Sablefish Electronic Ticket Reporting Requirements

The Council directed its Enforcement Consultants and Groundfish Advisory Subpanel to meet together at the June 2017 Council meeting, discuss non-regulatory possibilities for resolving concerns about the 24-hour reporting requirement associated with electronic fish tickets, and recommend changes to the Council.

June 2017

Sablefish Fleets

At the June Council meeting, if the Council decides that the Sablefish electronic fish ticket reporting requirements need to be revised, then the WCR will initiate rule-making to change the regulations.

Background and Related Activities

EM: Whiting midwater and fixed gear IFQ Fleets

The proposed rule published September 30, 2016. Rule implements an EM program for two sectors of the limited-entry trawl fishery. The regulatory amendment proposes to allow catcher vessels in the Pacific whiting fishery and fixed gear vessels in the shore-based IFQ fishery to use EM in place of observers to meet the requirements of the Trawl Rationalization Program for 100-percent at-sea observer coverage. The final rule implementing EM for whiting midwater and fixed-gear IFQ fleets has been delayed pending further consideration by the Council of industry funding of the video review. The Council is concerned about the potential costs of a third party review system and is interested in maintaining PSMFC as a video reviewer, but funded directly by industry. NMFS will update the Council on its progress exploring this option at the Council's September meeting. Fishermen will continue to fish under existing EM EFP in 2017 and 2018.

EM: Non-whiting midwater trawl and midwater trawl IFQ fleets

The Council selected its preferred alternatives at its April meeting but delayed final action on the program pending the results of NMFS' research (anticipated to be presented to the Council in September) into whether PSMFC can conduct the video review funded by industry. Depending on the results and final action by the Council, the final implementing regulations would likely be effective January 1, 2019 at the earliest

Electronic Reporting (ER): Sablefish Rule

Final rule package published November 23, 2016. The rule is effective starting January 1, 2017. This action revises fishery monitoring and equipment requirements for commercial groundfish fisheries, including a new requirement for submitting electronic fish tickets for limited-entry fixed gear and open access vessels that land sablefish. It revises limited-entry permitting administrative actions and provides greater flexibility and efficiencies for limited-entry groundfish fishery participants. This action also makes administrative changes and clarifying edits to improve consistency of the regulations with past Council actions and with the Pacific Coast Groundfish FMP.

ER: Groundfish Observer Data Collection

The West Coast Groundfish Observer Program has begun field testing our OPTECS (funded through National Observer Program / Fisheries Information System RFP) observer data collection software in the bottom trawl fishery. The fixed gear software development is nearly complete and we plan to be testing it on the water this season. We are testing a number of ruggedized tablets before investing in a system. Fully implemented, this system has the potential to further reduce reporting timelines for fishery dependent data on the West Coast.

ER: Vessel Movement Monitoring (VMM) Rule

The Council adopted increased ping rates for vessels currently under regulation (groundfish, salmon troll, California halibut, ridgeback prawn, and cucumber trawl). The original goal was to have the rule published in January 2017 and final rule in April, but this rule has been delayed because of loss of WCR staff and current staff diverted to higher priority projects. The Council will consider the use of VMM in the Highly Migratory Species (HMS) drift gillnet fishery when it reviews HMS regulations for 100% monitoring (through EM or observers) for 2018.

ER: Groundfish Electronic Logbooks

PSMFC has recently received $100,000 for this project. PSMFC has developed Microsoft access data entry programs that can be used to as basis of E-logbook for trawlers. Converting this program to a web-enabled program would allow this program to be placed on a laptop and the laptop to capture data without being connected to the internet. The captain would use it at sea, capture the data, and then upload the data when at shore. This logbook and application can also be used for the sablefish fishery. Similarly, a disconnected application can be used for remote buyers of trawl and fixed gear fish. This project will add the trawl catch shares program and the sablefish tier fishery, and help achieve the goals of the WCR/Council's Regional Electronic Technologies Implementation Plan. It will also fulfill the WCR's commitment to the Council to implement a federal logbook in the sablefish fishery (the Council and NMFS have not yet decided on a timeframe for this action).

EM: Cost Analysis

Cost estimates for all gear types show that EM can be a cost savings. However, these estimates are based on expenditures by PSMFC and may not be representative of the costs that could be expected in a third-party system. The Council and industry have recently become concerned that these costs may underestimate the likely costs to industry. At the April 2017 meeting, the Council and industry asked NMFS to investigate additional cost saving measures, such as reducing the amount of video reviewed, to generate more realistic cost estimates. We will be working on these items this summer, but are unlikely to satisfy the industry's desire for better third-party cost estimates due to limited information and the confidentiality of the information that is available.

EM: Groundfish Electronic Monitoring Statistical Research

PSMFC has recently received $100,000 to analyze EM data for purposes of supporting upcoming regulations concerning the whiting, bottom-trawl, and fixed-gear fisheries. Subprojects include comparison of observer to EM data for those trips that carried observers in the 2015 EFP, analysis to support less than 100% video review, analysis that supports the development of EM auditing standards for when the responsibility for video review is transferred to the industry, comparisons of retained catch on whiting trips to fish tickets to verify captains' estimates of cod-end capacity, and developing new camera/sensor/fish handling processes that reduce the amount of video recording needed and improve estimates of catch**.**

EM: Pacific Groundfish Total-Catch Accounting using Electronic Monitoring on Fixed-Gear Vessels

PSFMC has recently received about $50K for this project. Vessels participating in the Pacific Groundfish Trawl Catch Share Program are required to have 100 percent monitoring, but the cost of human observers at-sea and human compliance monitors dockside continues to climb. As these costs transition from federal subsidies to industry funding, the industry seeks less costly and more flexible methods to monitor catch and bycatch. EM with video cameras on fishing vessels has proven a viable, potentially cost saving, alternative for monitoring discards for the fixed-gear fleet, but vessels are still required to use a dockside catch monitor. Dockside monitoring generates logistical issues when vessels land at small ports and contributes to the high cost associated with the current catch monitoring program. This project will test the viability of EM as a data source for total catch accounting at-sea and dockside for fixed gear vessels as part of the West Coast Catch Share Program. In other words, can EM serve as replacement for both a human observer on the vessel and the human compliance monitors that observe a vessel's offloads into the fish plant?

EM: Renewal of Groundfish EM EFPs for 2017

The WCR renewed this EFP program and issued (new or renewed) EFPs to 45 vessels, including 24 whiting, 14 bottom trawl, and 7 fixed gear vessels. The research priority will be to see if revised retention policies can allow for IFQ species to be discarded. EFPs will continue until replaced by implementing regulations.

EM: WCR/GARFO EM Study Group

In August 2017, the WCR hosted an internal NMFS workshop that included representatives from some of the other regions. The workshop also included NOAA General Counsel attorneys from HQ, WCR, AKR, and OLE. Issues discussed included: confidentiality, differences in implementation, council/industry views, and costs (WCR presented a cost analysis of the WCR EM program).

EM: Swordfish Management and Monitoring Plan

This plan, which the Council is still developing, could include EM and may be discussed at the upcoming Council meetings. A recent drift gillnet EM research project was cancelled due to lack of industry participation.

ER: HMS and Coastal Pelagic Species (CPS) Implementation Plan

WCR has recently received funds to explore with the States and PSMFC the development of draft implementation for electronic logbook and fish tickets for the West Coast HMS and CPS fisheries.

ER: IFQ Electronic Reporting

The NMFS Northwest Fisheries Science Center is working on adapting an IFQ accounting system for use with smartphones and tablets. This project is nearing completion.

ER: Recreational Logbook

All of the Sportfishing Association of California (SAC) vessels are now using the electronic logbook with no major problems. The e-logbook went live in August 2015 and has improved speed the speed of logbook submission. Effects on logbook compliance have not yet been analyzed. There will be an effort made to increase use of the e-logbook system to the commercial passenger fishing vessels (CPFVs) in central and northern California. The increased submission speed should increase the accuracy of preliminary catch and effort estimates.

ER: Tribal E-tickets

The Northwest Indian Fisheries Commission is developing an e-fish ticket system for tribal fisheries in the Pacific Northwest.

Policy Directive Metrics to Report

The number of FMPs with defined fishery-dependent data collection monitoring goals:
0 out of 4 possible

> WCR has four FMPs: Salmon, HMS, Coastal Pelagic Species, and Pacific Groundfish. Although these FMPs have data reporting and collection requirements including observer coverage, none of the FMPs have fishery dependent data collection monitoring goals. Generally, our current management of these fisheries has 100% state fish-ticket requirements. For some fisheries there are required federal or state logbooks. Both the HMS and groundfish fisheries have observer programs. In the groundfish fishery, there are mandatory requirements for carrying observers in the catch-shares fisheries (100% in shorebased IFQ and mothership catcher boat fleet and 200 percent in the mothership and catcher-processor fleets.) The groundfish IFQ requirements include 100 percent monitoring of offloads by compliance monitors.

The number of FMPs reviewed to identify fisheries where the adoption of additional electronic technologies would be appropriate for achieving data needs:
4 out of 4 possible

> In the development of the Regional Electronic Technologies Implementation Plan for West Coast Fisheries, all FMPS were reviewed to identify fisheries where adoption of additional electronic technologies would be appropriate for achieving data needs. The Implementation Plan includes electronic fish tickets for all FMP fisheries, electronic logbooks for some fisheries, and use of electronic monitoring for some fisheries.

For fisheries where additional electronic technologies are identified as appropriate, the number of FMPs with electronic technologies incorporated into fishery-dependent data collection programs:
2 out of 4 possible

> The Pacific Groundfish FMP currently requires electronic fish tickets be submitted by first receivers for all IFQ landings. As a data quality control mechanism, compliance monitors also file fish tickets electronically. These tickets are compared to determine how the IFQ vessel

accounts should be debited. The HMS FMP has a voluntary albacore e-logbook program. Vessel monitoring systems (VMS) are implemented in both Pacific Groundfish and HMS fisheries.

Updated Cost Analysis

Estimates of EM Program Costs –Industry Perspective:

NMFS and PSMFC prepared estimated costs for bottom trawl and non-whiting midwater trawl based on 2016 EFP data, summarized in Table 1.

The video review cost estimates decreased substantially for bottom trawl from 2015 to 2016. The video review costs for bottom trawl were $163/sea day in 2015, and are estimated at $88.06/sea day in 2016. This may be due to the fact that captains and crew, and video reviewers are more practiced at sorting and reviewing, respectively, resulting in faster review rates (review rates were 0.68 in 2015 and 0.49 in 2016).

Increased effort by bottom trawl vessels in the EFP in 2016 also resulted in lower costs per sea day for equipment and field services, as these fixed costs were spread over more sea days. For bottom trawl vessels, total cost per sea day of EM is estimated at $365.22 per sea day, down from $500 per sea day in 2015. The total per sea day EM costs for non-whiting midwater trawl vessels is estimated at $806.67 in 2016. This is substantially higher than the $500 per sea day estimated cost for an observer. This high cost is driven by the few number of sea days by this fleet in the EFP in 2016, which resulted in fixed costs being spread over fewer days. This is seen in the $262.47 per sea day equipment cost and $513.52 per sea day service cost. The $513.52 per sea day cost is based on a conservative estimate of $300,000 total annual cost for field services divided equally among the 46 vessels in the EFP. If the $300,000 were split equally among sea days instead, then per sea day service costs would be equal among all vessels and total field service cost for a vessel would be driven by the number of days a vessel fished. Different service providers may divide this cost among participants differently, and estimates using both methods are provided to illustrate the potential range of costs. Using the equal per sea day fee of $150.45 for field services instead results in a total cost of $443.60 per sea day for non-whiting midwater trawl, and a cost savings of $6.40 per sea day with camera costs and $268.87 without camera costs. Since non-whiting midwater trawl trips have quick review rates, even faster than whiting trips, and comparable trip characteristic to the whiting fishery, it would be expected that with more effort (more sea days to defray the fixed costs) non-whiting midwater trawl vessels would see a similar cost savings to whiting vessels. It should also be noted that there are few vessels that fish exclusively in the non-whiting midwater trawl fishery. Most vessels in the EFP fished both bottom trawl and nonwhiting midwater trawl or both whiting and non-whiting midwater trawl. Therefore, examining the fixed costs on a non-whiting midwater trawl trip by itself may not accurately reflect the actual costs for vessels in this portion of the fishery. The fixed costs would also be defrayed by a vessel's sea days in the bottom trawl and whiting fisheries.

Table 1. Summary of Per Sea Day Costs for EM vs. Observer

	Bottom Trawl	Non-whiting Midwater Trawl
# of vessels	9	6
Avg annual sea days per vessel	40.1	12.7
Avg review minutes per haul	64	9
Avg review rate	0.49	0.17
Avg review hours per trip	6.30	0.40
EM Per Sea Day Costs		
Equipment cost[a]	$83.13	$262.47
Review cost[b]	$88.06	$4.98
Data storage cost[c]	$31.39	$25.70
Service & maintenance fees[d]		
Split equally among vessels	$162.64	$513.52
Split equally among days	$150.45	$150.45
Total Per Sea Day Costs		
EM cost per sea day[f]	$365.22	$806.67
Observer cost per sea day	$500	$500
EM Savings Per Sea Day		
With camera cost	$134.78	($306.67)
Without camera cost	$217.91	($44.20)

Attached is the EM Cost Template which provides information on overall Agency and Industry Perspective. Note that costs of electronic reporting are not reported, as they are currently viewed as very minimal.

Table 2. EM Program Cost Template for reporting program costs and cost share. Include FTE and contractor costs.[1]

Camera-based Electronic Monitoring WCR-2016 Groundfish EFP EM Cost Estimates for whiting, fixed gear, and bottom trawl fleets combined. Regs are still under development.	Total Cost	% Government cost share?	% Industry cost share?	NMFS budget line (e.g., FRM, catch shares, NOP, etc)
Planning (technical system design, vessel monitoring plans, support system design)[1]	$150,000	100%		Catch Shares
Specifications setting				
Technical software system design QA/QC, metadata, integration				
Commercial off- the shelf/3rd party developer option				
Regulation development and implementation	$150,000	100%		Catch Shares
Hardware[2]	0			
Camera(s)				
Sensors				
Media/storage				
Government IT infrastructure				
Software, database dev., software licenses				
Field Support[3]	$200,000		100%	Industry
Installation				
---Labor				
---Wiring, connections, etc				
Training (labor, materials, travel)				
Maintenance/Repair/Replacement				
Help Desk				
Data Communications & Reporting[4]				
At sea				
Shoreside				
Government IT infrastructure				
Data Retrieval	$10,000		100%	Industry
Data Validation				
Data Analysis[5]	$200,000			Catch Shares
Software				
---development				
---license				
Labor	$200,000			Catch Shares
System maintenance				
Data Storage/Archiving	$200,000	100%		Catch Shares
On board				
On shore				
Government IT infrastructure	$200,000			Catch Shares
Other (specify)				

Table 2 footnotes:

1. Estimated by cost of WCR FTE $150,000

[1] Provide reference for the program, including brief description and a citation to the implementing rule

2. Unit costs for cameras are about 10-13K including sensors. Hard drives are $75 each, boats have 4 hard drive units -two come with the purchase of equipment, two other purchased separately. There may be a few additional vessels entering into the 2016 EFP, they will have to pay for this equipment. During 2015, no new equipment purchased.
3. Industry currently in negotiations with one company, this is an estimate-most likely paid out NFWF Grant. May not be able to report actual number because of confidentiality.
4. This is an estimate based on the cost to submit a hard drive is $15 per trip. Depending on fleet, hard drive can hold 1 to 5 trips
5. Based on two reviewers and includes data validation and associated software.