

Whiting Electronic Monitoring Program  
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Under an Exempted Fishing Permit sponsored by Midwater Trawlers Cooperative and United Catcher Boats, the majority of the West Coast whiting fleet has been utilizing electronic monitoring systems in lieu of human observers since 2015.

### West Coast Whiting

The whiting industry is a component of the West Coast trawl Groundfish fishery and is comprised of three sectors: catcher vessels that harvest and process fish on board (catcher processor sector), catcher vessels that deliver catch to at-sea processors (mothership sector), and catcher vessels that deliver catch to traditional land-based processors (Shorebased sector). The west coast whiting EM program covers the catcher vessels in the mothership and shoreside sectors.

The whiting fishery (also known as pacific hake) is very similar to the Alaskan pollock fishery. The two species are similar as are the fishing strategies. The goal in both fisheries is to get the fish into refrigerated seawater systems (RSW) quickly to maintain the highest product quality possible. Because there is very limited sorting at-sea, whiting is a maximized retention fishery where harvesters are allowed to retain prohibited species such as salmon and halibut along with their whiting. Scientific observers were deployed on whiting catcher vessels in the shoreside fishery about 20% of the time. Whiting vessels had also been testing a basic camera system between 2004-2010 to monitor slippage – the loss of fish from a vessel's cod end. CV's in the mothership sector were not required to carry observers since the fish never came onboard the vessel. The CP's and Mothership processing platforms were required to carry two observers at all time.

### West Coast EFP Development

In 2011 National Marine Fisheries Service (NMFS) implemented a catch share program for the West Coast Trawl Groundfish fishery. A major component of the program is personal accountability and associated catch accounting. In order to credibly maintain personal accountability, one-hundred percent monitoring of every fishing trip was required. The initial camera system being used by whiting vessels was regulated out of compliance and replaced by the human observer requirement. Observer coverage averaged about \$500/day per vessel. In

the first few years of the program, NMFS provided a partial reimbursement to help defray the expense of observer coverage.

Before the fishery was rationalized it was a derby-style fishery with a very short season – sometimes lasting only a few weeks. As described earlier, the observer coverage was sporadic. After rationalization, the race for fish was slowed down and the season length increased. The season currently begins on May 15<sup>th</sup> and lasts about six months. The number of days fished increased and the monitoring costs also skyrocketed. The whiting catcher vessels then began researching whether EM in place of human observers could be an effective and less expensive monitoring tool.

### **Exempted Fishing Permit**

In 2014 Midwater Trawlers Cooperative and United Catcher Boats co-sponsored an Exempted Fishing Permit. The purpose of the EFP was to determine whether utilizing cameras in lieu of human observers proved both cost effective and logistically effective while still providing 100% monitoring of catch and discards that adequately complied with the personal accountability requirements of the trawl rationalization program. Through a collaborative process, industry participants worked closely with NMFS staff, NMFS OLE, the EM provider (in this case Archipelago) and Pacific States Marine Fisheries Commission to design the program.

We are currently entering the fourth year of fishing utilizing the EFP. In 2015 22 whiting vessels used EM. That number has increased to 28 and encompasses the majority of catcher vessels that fish whiting.

The primary use of EM in the whiting fishery is to achieve compliance monitoring required for accountability of catch and discards, as opposed to the collection of scientific or biological information.

- Under the current program EM participants are required to complete detailed logbooks and the logbook is the primary catch reporting device for the program.
- The EM system is then used to audit the logbook and ensure proper recording of all discards.
- Following a trip, logbooks must be submitted to PSMFC within 24 hours of landing
- hard-drives must be submitted after every mothership trip and on every fifth shoreside trip.
- Pacific States enters the logbook data within one business day of receipt and logbook data is uploaded to the vessel catch accounting system nightly.

- Video is generally reviewed within two business days for whiting trips. The video is 100% reviewed to check for compliance with EFP rules and to collect discard weights and piece counts for comparison to logbooks.

### Results

Overall, Pacific States has reported close agreement between what video reviewers see and what fishermen record in the logbooks when estimating discards.

- In the shoreside fishery most discrepancies (97%) were less than 1,000 pounds difference, with nearly 50% of the trips having less than a 10-pound difference. To put that into perspective – the whiting fishery is a high-volume fishery with a TAC of over 431 million pounds of fish. An average shoreside tow is anywhere from 200,000 – 250,000 pounds.
- Similarly, in the mothership sector about 80% of the discrepancies were less than 1,000 pounds with 55% of those trips having less than 100-pound differences.
- In many cases, the skipper is overestimating the total amount of discards in order to not come up short when the video reviewer makes their estimate.

### Expenses

In 2015 and 2016 the EM EFP participants fished approximately 3,525 days and saved approximately \$1.45 million dollars using the EM systems versus what they would have spent using human observers.

Component	Who Pays	Notes
Camera System	Catcher Vessel	There was a grant from PSMFC to cover equipment costs for participants in year 1 – the six additional vessels that joined the EFP after year 1 had to cover the full cost of their equipment
Installation	Catcher Vessel	One-time installation cost paid to service provider
Maintenance	Catcher Vessel	Paid to the EM service provider as needed
Program Management Fee	Catcher Vessel	Paid to the EM service provider annually
Review	NMFS	NMFS is currently covering the cost of video review through a grant to PSMFC – this will change when the fishery moves to federal regulation in 2019 and the vessel will be responsible for covering these costs

Storage	NMFS	NMFS is currently covering the cost of video storage through a grant to PSMFC – this will change when the fishery moves to federal regulation in 2019 and the vessel will be responsible for covering these costs
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### Remaining Challenges

- In 2017 a large number of operational discards occurred that NMFS deemed violations of the EFP. The discards all occurred on camera and were all recorded in the logbooks by the skippers, and even though a vessel could make these discards using a human observer in the whiting fishery, NMFS determined that the amounts and types of discards could have been avoided (and thus should have been). Fourteen of the 28 vessels are being investigated for these discards. The industry is working with NMFS on amending the discard rules to allow additional operational discards as long as they are done on camera and do not undermine the catch accounting system.
- 3<sup>rd</sup> party video review – when the EFPs began and subsequent federal regulations were being drafted, the industry was interested in allowing the EM provider to become the 3<sup>rd</sup> party reviewer. After working with PSMFC for several years, the industry realized that PSMFC was not only proficient at the review, they were likely much less expensive than using the EM provider. We are currently working with NMFS and PSMFC to determine a way that the industry can continue to use PSMFC to review the video
- Storage time – there is a national debate on how much of the video needs to be stored and for how long. Storage of the video is estimated to be the most expensive component of the whiting EM program.
- Privacy issues – there is also a debate on who should have access to the video and for what purposes once the initial catch accounting compliance needs have been met

### Conclusion

- The EM system for the whiting fishery works as intended – the system is an effective compliance tool that supports the personal accountability and catch accounting components of the trawl catch share program
- Logbook estimates are very close to what the video reviewer records for discard events
- There have been no major equipment malfunctions that have required a vessel to cease fishing – all malfunctions have been either fixed while at-sea or different protocols are established with the blessing of PSMFC and NMFS so the vessel can continue to fish. For example – if a camera is not automatically turning on, the vessel operator can manually switch it on. If a camera deemed “critical” malfunctions it can be replaced with a non-

critical camera. These are all steps that the crew can take while working with technical support and PSMFC while at-sea.

- Cost savings to the fleet are huge – with close to \$1.45 million saved in 2015-2016
- There are still some issues to be ironed out with respect to operational discard definitions, 3<sup>rd</sup> party review, video storage, and who should have access to the video
- The industry has been able to work cooperatively with NMFS, NMFS OLE, PSMFC, the EM provider and each other to develop and refine the program over time