



**NOAA**  
**FISHERIES**

# Electronic Monitoring in North Pacific Fisheries

Anna Henry  
Fishery Analyst  
NPFMC

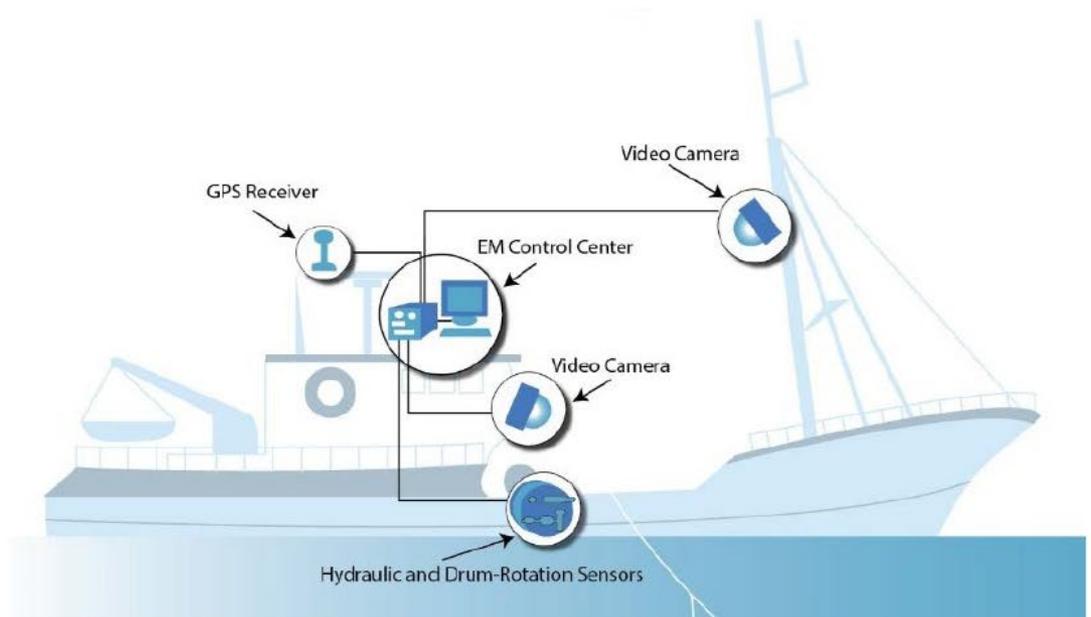
Josh Keaton  
Monitoring Branch Chief  
NMFS Alaska Region

Alaska Board of Fisheries March 10, 2023



# What is Electronic Monitoring (EM)

Use of video and/or sensor technology to aide with monitoring goals in fisheries



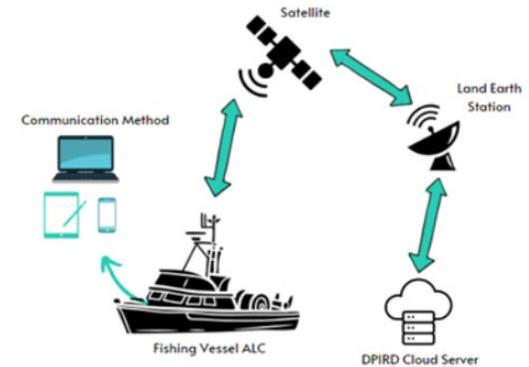
# How is EM being used in Alaska?

Vessel monitoring system (VMS)

EM to support at-sea observers

EM for catch estimation

EM for compliance monitoring

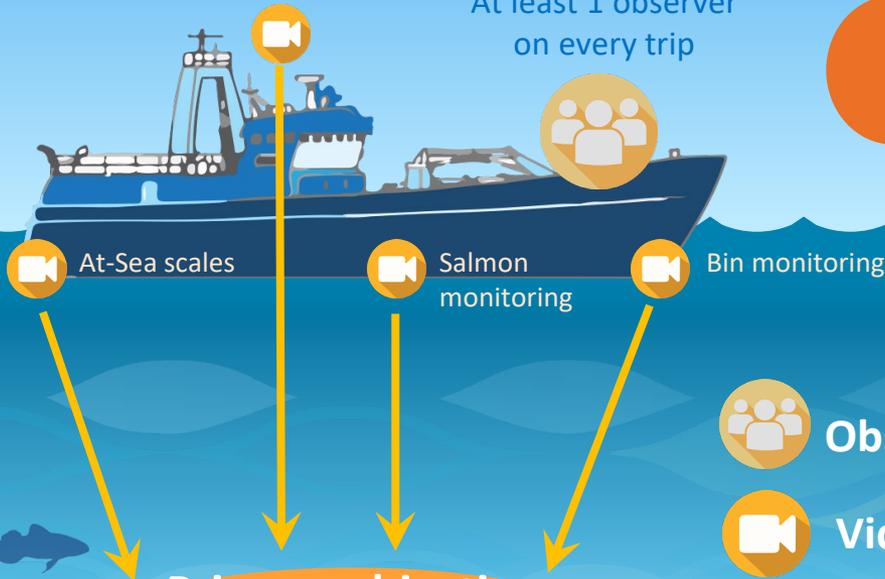


# Electronic Monitoring (EM) in Alaska

Halibut deck sorting

At least 1 observer  
on every trip

## Video monitoring for compliance on catcher processor vessels



**Primary objective:  
Monitor compliance  
combined  
with full observer  
coverage**



**Observers on boat for all trips and deliveries**



**Video monitoring for compliance**

- At-Sea scales weigh all catch at-sea. Video monitoring evaluates scale tampering.
- Bin monitoring ensures no pre-sorting prior to observer sampling.
- Salmon monitoring ensures observers can sample salmon for prohibited species catch limits.
- Halibut deck sorting ensures observers are present if deck sorting occurs so they can sample halibut for prohibited species catch limits.



**65** Catcher/Processor vessels  
110-365 feet in length



**4** Fisheries: Amendment 80; GOA  
Rockfish Program; AFA pollock;  
BSAI Freezer longline Pacific cod

Version: October 2019



**NOAA  
FISHERIES**

# Electronic Monitoring (EM) in Alaska

## Electronic monitoring on small fixed gear vessels



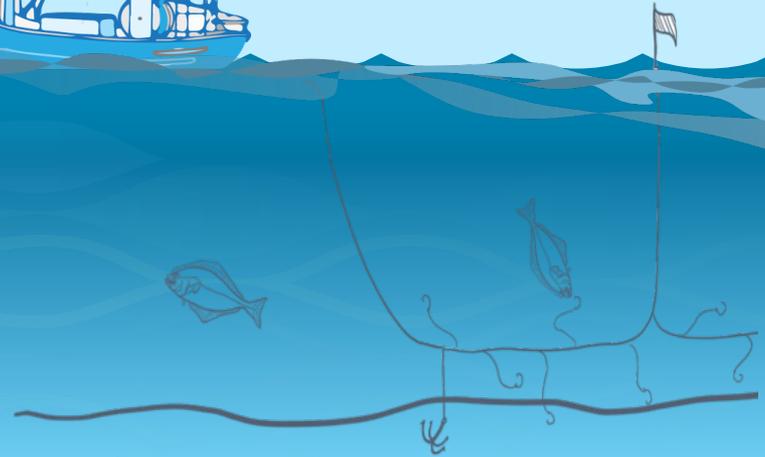
Primary objective: Catch estimation



## Electronic monitoring for catch and discard information

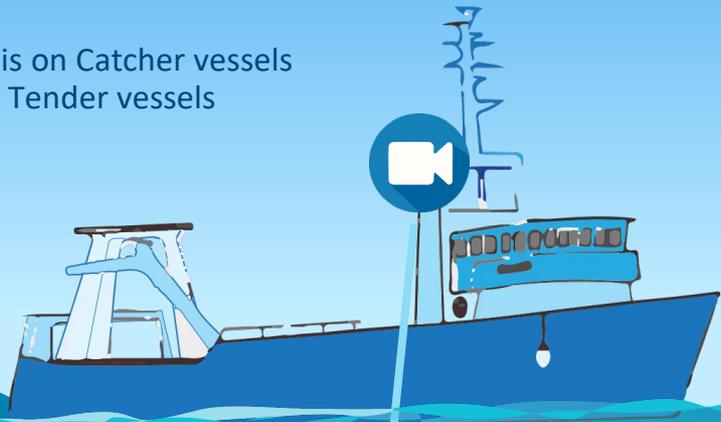
- EM provides catch and discard information.
- Vessels chose to have EM on their boats instead of observers.
- Trips are randomly selected for monitoring.
- Data collected from EM is used with observer data to estimate catch of the entire partial coverage fixed gear fleet.

**168** Catcher vessels participating  
**1258** out of total boats



# Electronic Monitoring (EM) in Alaska

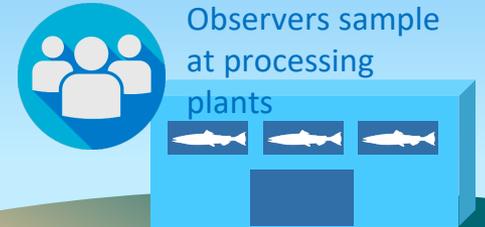
EM is on Catcher vessels and Tender vessels



**49** Catcher vessels  
**9** (BS & GOA)

**Primary objective:  
Monitor compliance**

## EFP 2020-2024: EM for compliance on pelagic trawl vessels



Observers sample at processing plants



Observers in processing plants randomly sample deliveries to collect catch and biological data

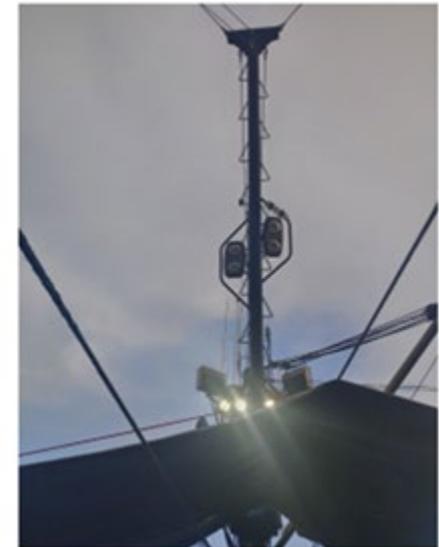


Electronic monitoring for compliance

- EM compliance monitoring to ensure maximized retention of all species and verify self-reported data of any discard events.
- Catch and discard information from landing reports and logbooks.

# Electronic Monitoring Benefits

- **Improved coverage-** More trips, multiple views, no breaks
- **Accountability-** Verification of catch
- **Cost efficiency-** Program design
- **Additional data collection**
- **Safety/comfort-** Fewer people onboard
- **Covid-** Cameras don't contract or transmit viruses



# Electronic Monitoring Challenges

- **Onboard vessel** – Catch handling, care of system
- **Costs & logistics** – Transmission, review, storage
- **Regulatory** – Writing flexible regulations
- **Biological data collection**- shoreside sampling
- **Other** – Outreach, communication, social dynamics



# Considerations for an EM Program

- Define fishery monitoring objectives. What is the goal?
- Does the catch handling on the vessels work for the specific type of EM?
- How timely do you need data and how will it be transmitted?
- Will it be voluntary? Will the fleet adopt it?
- Costs and funding – equipment purchase, data transmission, video review, data storage
- Who administers the program and who has access to the data?



# Council Process for Trawl EM

## 1. Council identified priority (2018)

Developing EM for use in pelagic trawl catcher vessel fisheries

## 2. Council formed Committee (2018)

Trawl EM Committee- industry participants, EM providers, agency representatives, stakeholders

## 3. Pilot project phase (2018-2019)

Testing EM systems to assess EM data quality, timeliness, and costs as compared to observers

## 4. Exempted Fishing Permit (EFP) (2020-2024)

Evaluate the efficacy of EM systems and shoreside observers for pollock

## 5. Council analytical process (2021-2023)

1. Initiated analysis, approved purpose and need and alternative set, 2. Initial review, 3. Final action

## 6. NMFS implementation of regulated program (expected 2025)



# Lessons Learned

- Clear and timely communication between all parties is critical.
- Strong education and outreach programs need to be in-place and regularly delivered to all participants.
- EFP process was invaluable for identifying and resolving issues.
- Committee process was helpful to facilitate communication, public participation.
- Importance of stakeholder involvement and buy-in



# Thank you!

