

*Science, Service, Stewardship*



# B REPORTS

ADP

EM

**NOAA  
FISHERIES  
SERVICE**

AFSC-AKR



**NOAA**  
**FISHERIES**

# Presentation Organization

## Final ADP

- Observer Deployment Rate for 2014

## EM

- EM Accomplishments in 2013
- 2014 EM Projects
- Key Considerations for EM/ER



# 2014 Observer Deployment Rate



**NOAA**  
**FISHERIES**

## Funding Goals:

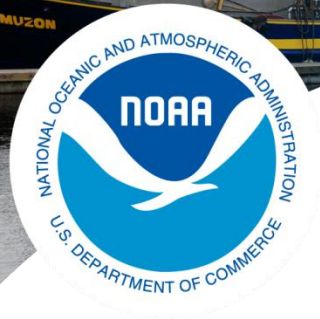
- 1) Stable Deployment Rates in 2013 and 2014
- 2) No Disruption in Observer Deployment

## Considerations

- 2014 Bridge Funding
  - a. Carry-over from 2013
  - b. NMFS Funding
- Estimated Industry Contribution
- 2015 Bridge Funding



## 2014 Selection Rate



**NOAA**  
**FISHERIES**

### **Trip Selection Vessels:**

**Number of Days 4,295**

**Selection Rate 0.16**

### **Vessel Selection Vessels:**

**Number of Days 1,223**

**Selection Rate 0.12**

### **Deployment Totals:**

**Number of Days 5,518 in 2014/2015**



**NOAA**  
**FISHERIES**

# Questions?



**NOAA  
FISHERIES**

# **Accomplishments in 2013**

**Completed Review of All EM Studies (2012)**

**2013 Pilot Project**

**Stereo Camera systems designed specifically for fishery data collection**

**Electronic Monitoring Logging System (EMLS)**

**Developing and Submitting Funding Proposals**



# Pressing rewind: A cause for pause on electronic monitoring in the North Pacific?

Farron Wallace, Craig Faunce, Martin Loefflad

- *NOAA Fisheries, Alaska Fisheries Science Center, Seattle, USA,*
- .

*2013 ICES Annual Science Conference  
Reykjavik, Iceland*

□ September 27, 2013

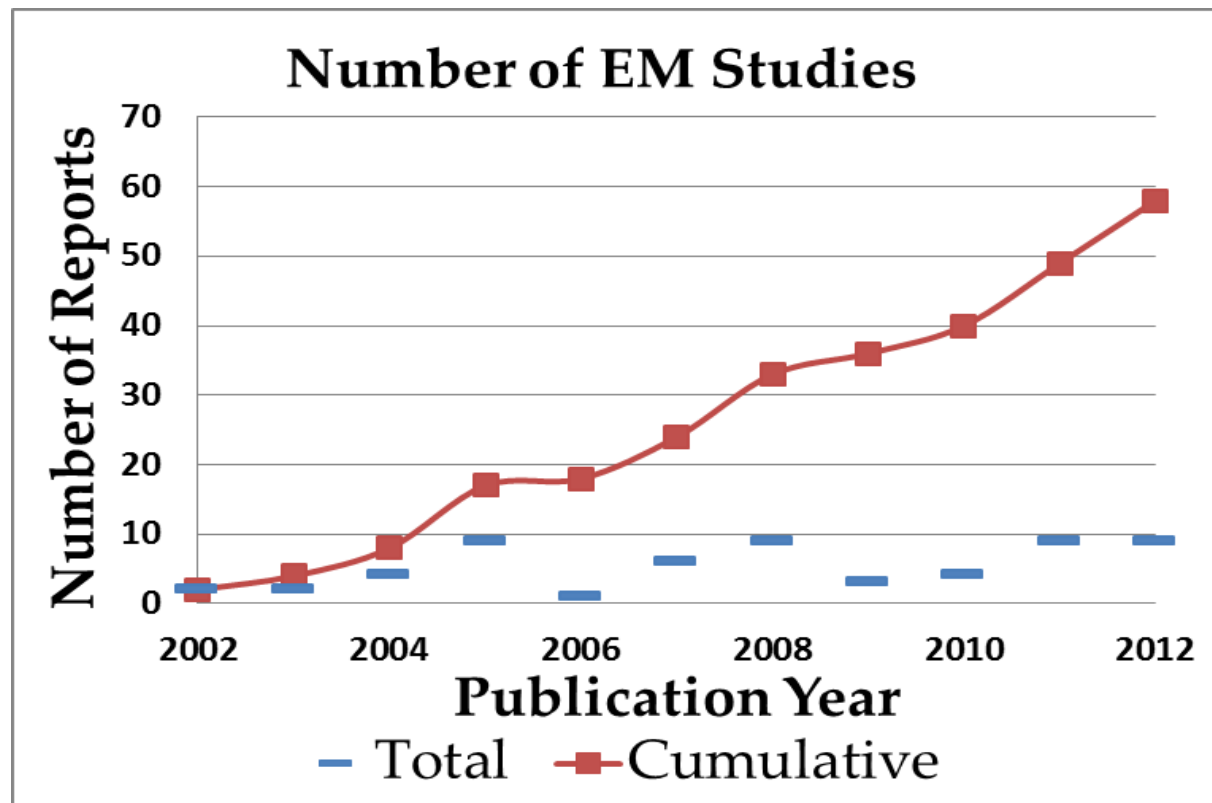




# Publication Year



**NOAA**  
**FISHERIES**







**NOAA**  
**FISHERIES**

## EM Cost Savings

- Is it cheaper compared to an Observer?

Yes: 33%

Potentially: 57%

No: 10%



## *Cause for pause Key Findings*



**NOAA  
FISHERIES**

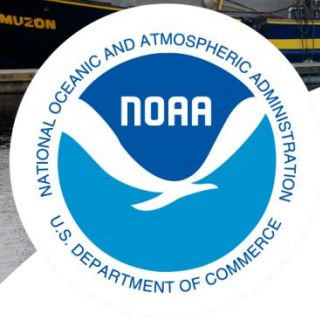
1. Principal Investigators from the service industry have designed, implemented and evaluated most EM studies
2. Peer review is rare
3. Studies report lapses in data
4. Video quality is variable throughout a trip
5. There are differences in species compositions when EM is compared to Observer derived data
6. Time delay in acquiring data
7. Cost of collecting data is dependent on many factors however, Infrastructure \$ rarely mentioned



**NOAA**  
**FISHERIES**

## Video Monitoring

- Current EM; Effective tool for a variety of monitoring objectives (i.e. at monitoring compliance in retention fisheries where species identifications and weights can be determined by dockside monitors.)
- We see great potential for catch estimation especially where the catch is brought on board individually (gillnet, longline, and jig). Require innovation.



# Common Misconceptions

NMFS AFSC does not have the expertise to develop/implement EM

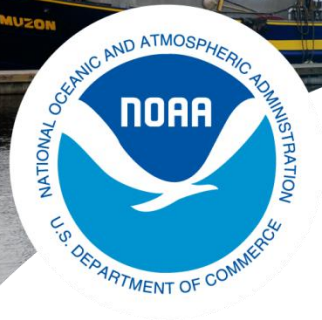
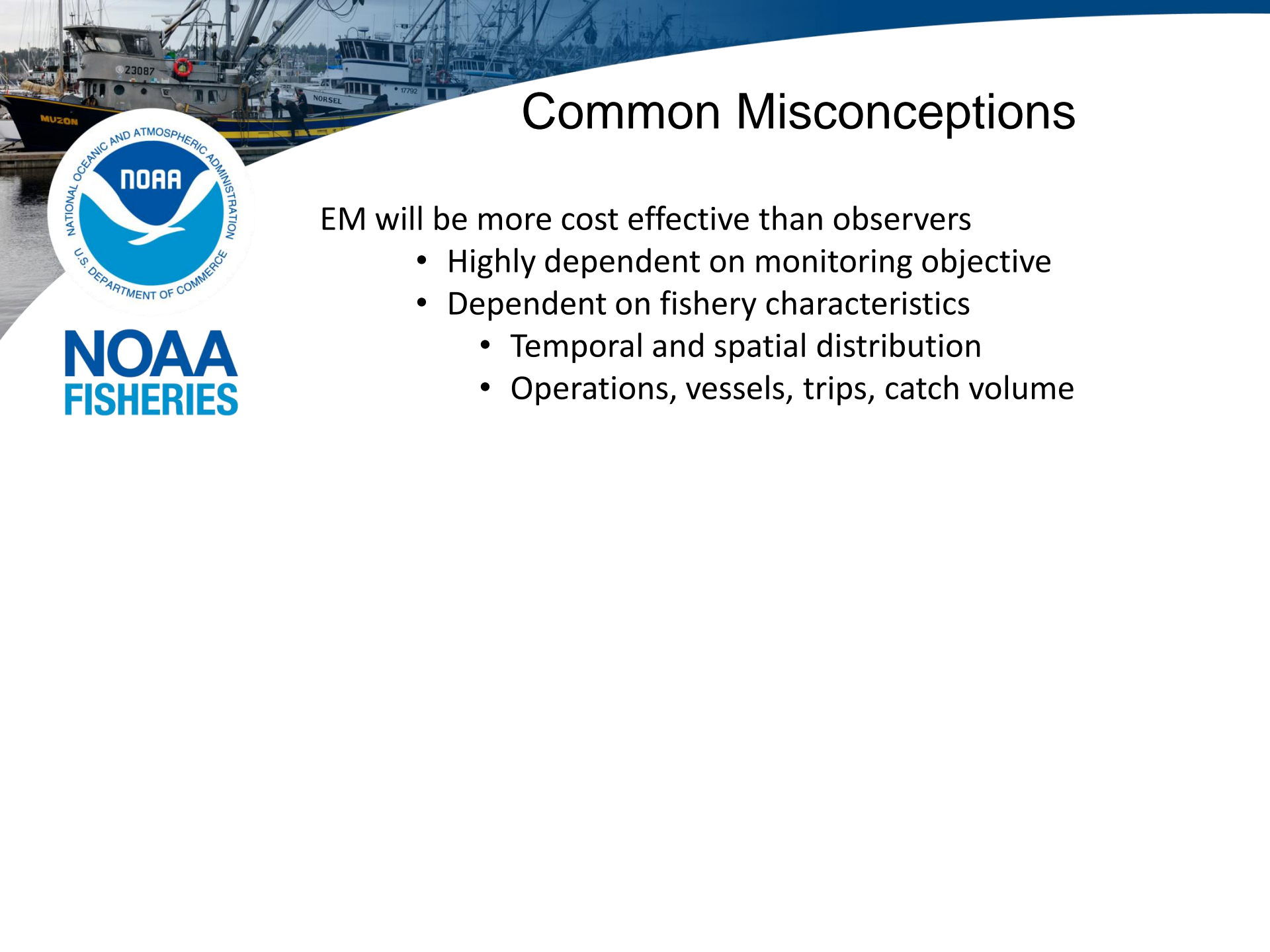
- Number EM projects already Implemented
- AFSC MACE Program

Video data can be used to estimate catch

- Inability to accurately identify species
- Difficult to obtain weights of discarded fish

EM can replace observers

- Observer collects many types of information that EM cannot
- Length of time required to obtain, review and extract all requisite information



**NOAA**  
**FISHERIES**

# Common Misconceptions

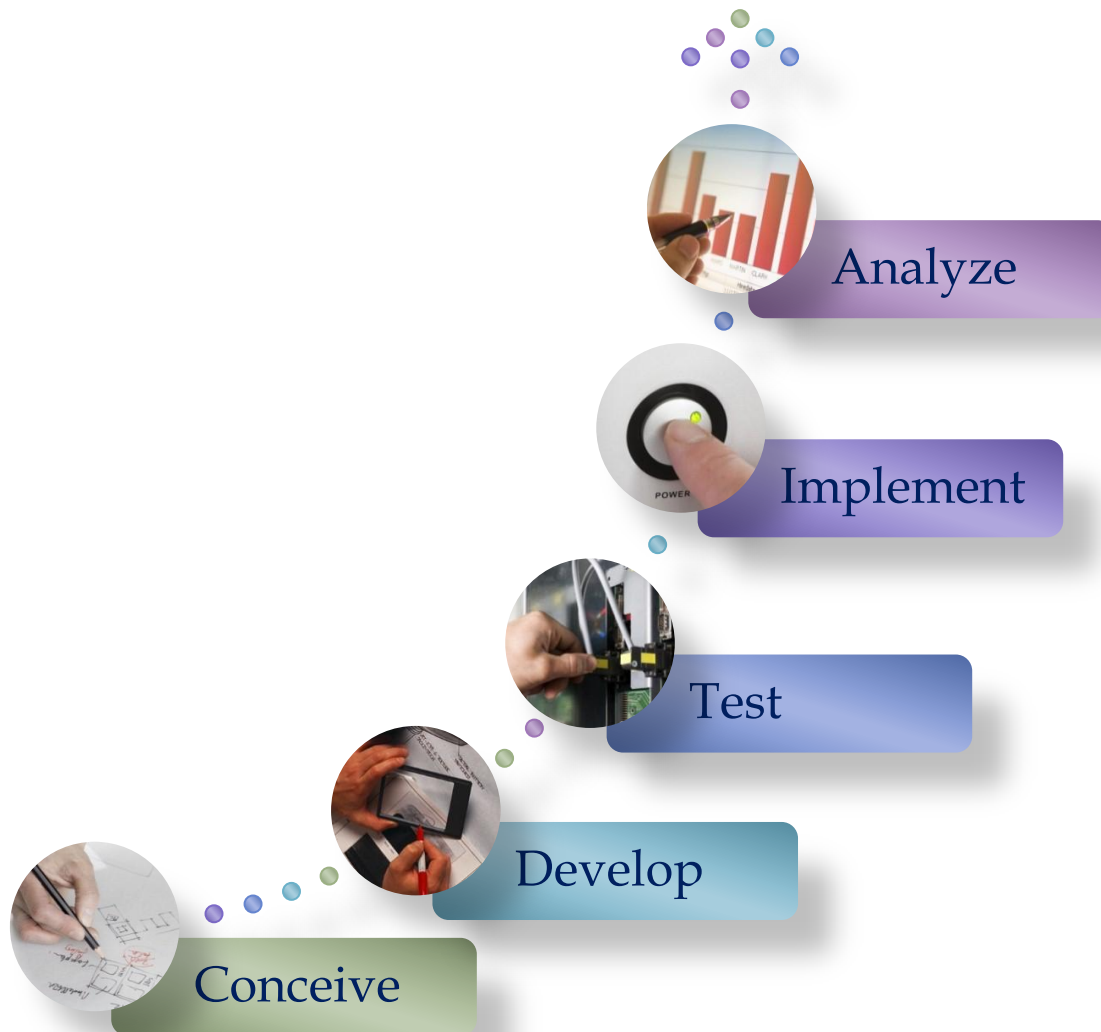
EM will be more cost effective than observers

- Highly dependent on monitoring objective
- Dependent on fishery characteristics
  - Temporal and spatial distribution
  - Operations, vessels, trips, catch volume



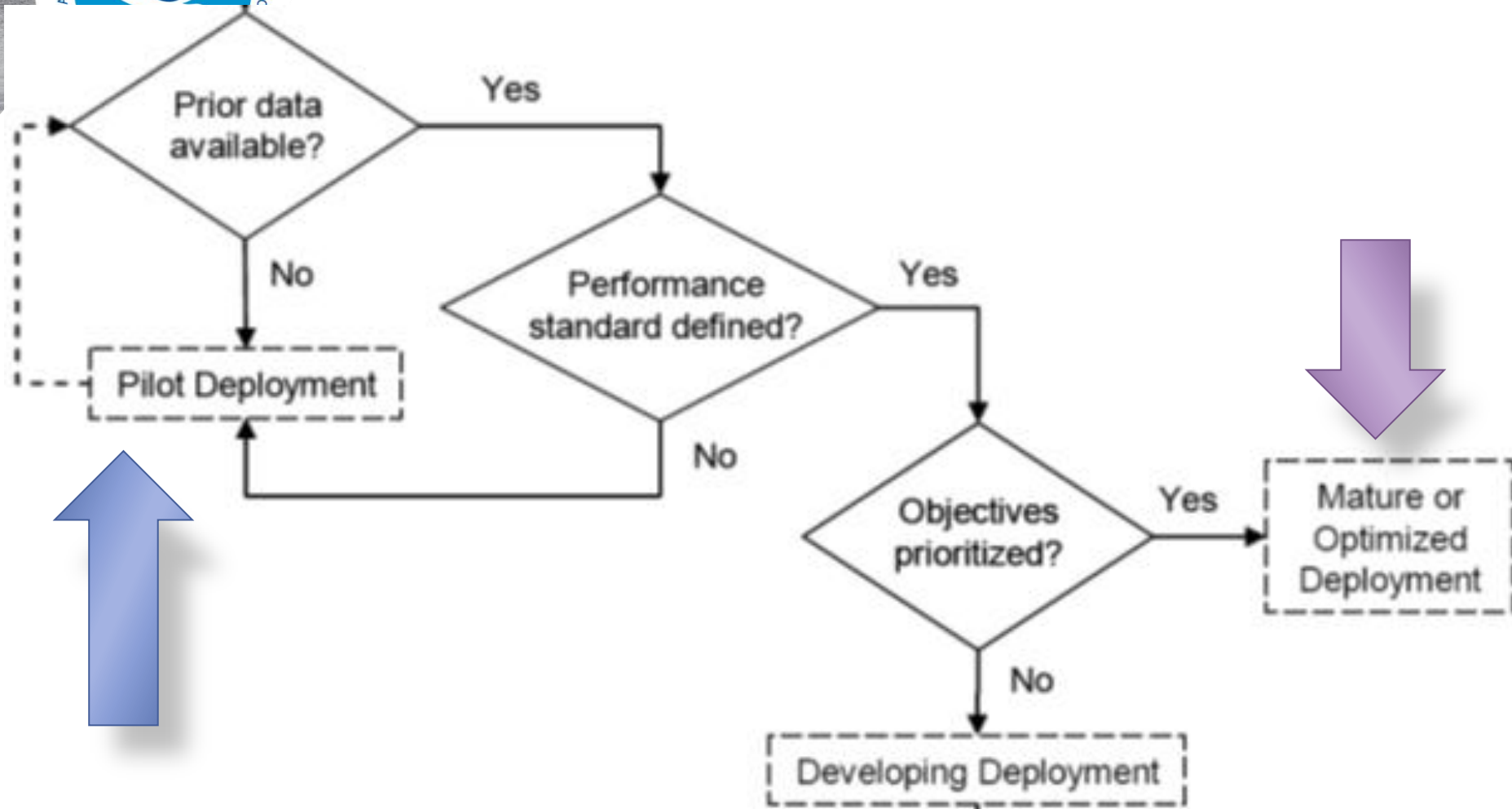
**NOAA**  
**FISHERIES**

# Process of Integrating EM/ER





# Implementation of EM

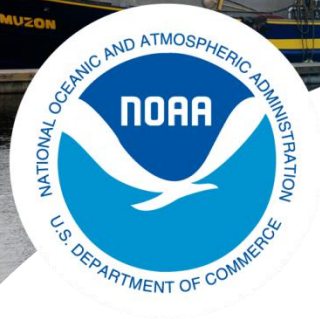






**NOAA**  
**FISHERIES**

**Questions?**



**NOAA**  
**FISHERIES**

## 2013-2014 EM Pilot Project

**Objective:** Develop a camera based EM tool that can reliably monitor fishing activities for an entire trip

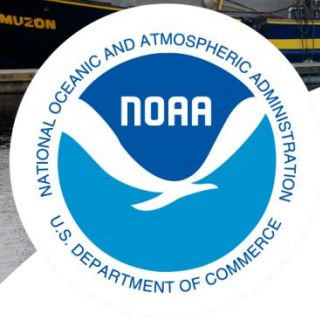
- Provide reliable information on catch disposition and effort.
- Provide information to validate self reported information.
- Provide information to evaluate vessel operator responsibilities.



# 2013-2014 EM Pilot Project

## What are the results from 2013?

- Total Participation 8 vessels or 1.5% of the fleet
- R&D improvement in video quality and reliability
- Have not finished post-processing data



**NOAA**  
**FISHERIES**

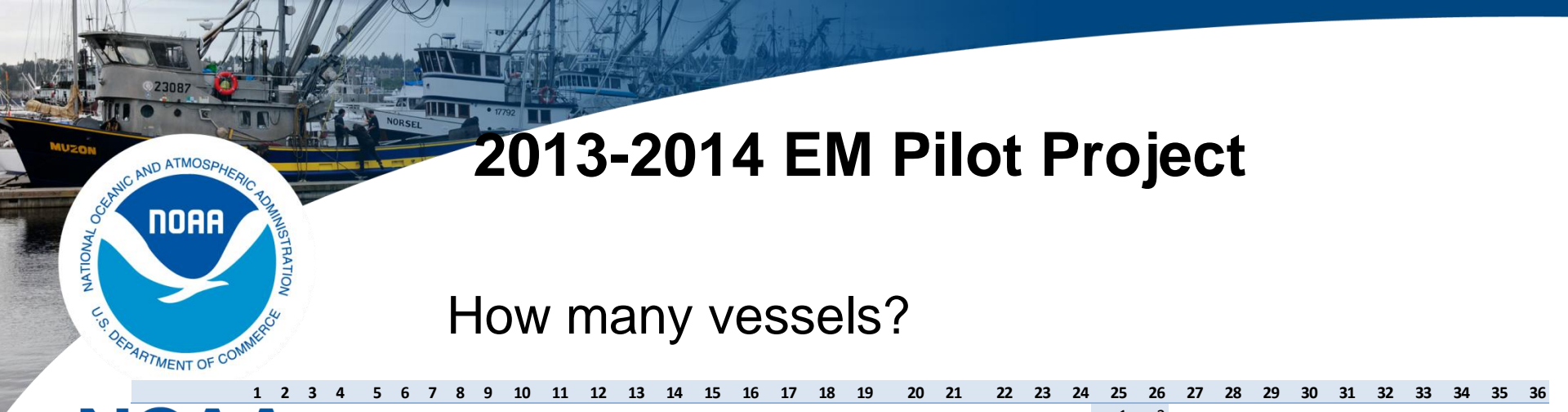
# 2013-2014 EM Pilot Project

## What's new in 2013?

- Provide conditional release from observer coverage for participating vessels
- Require filling out e-logbook

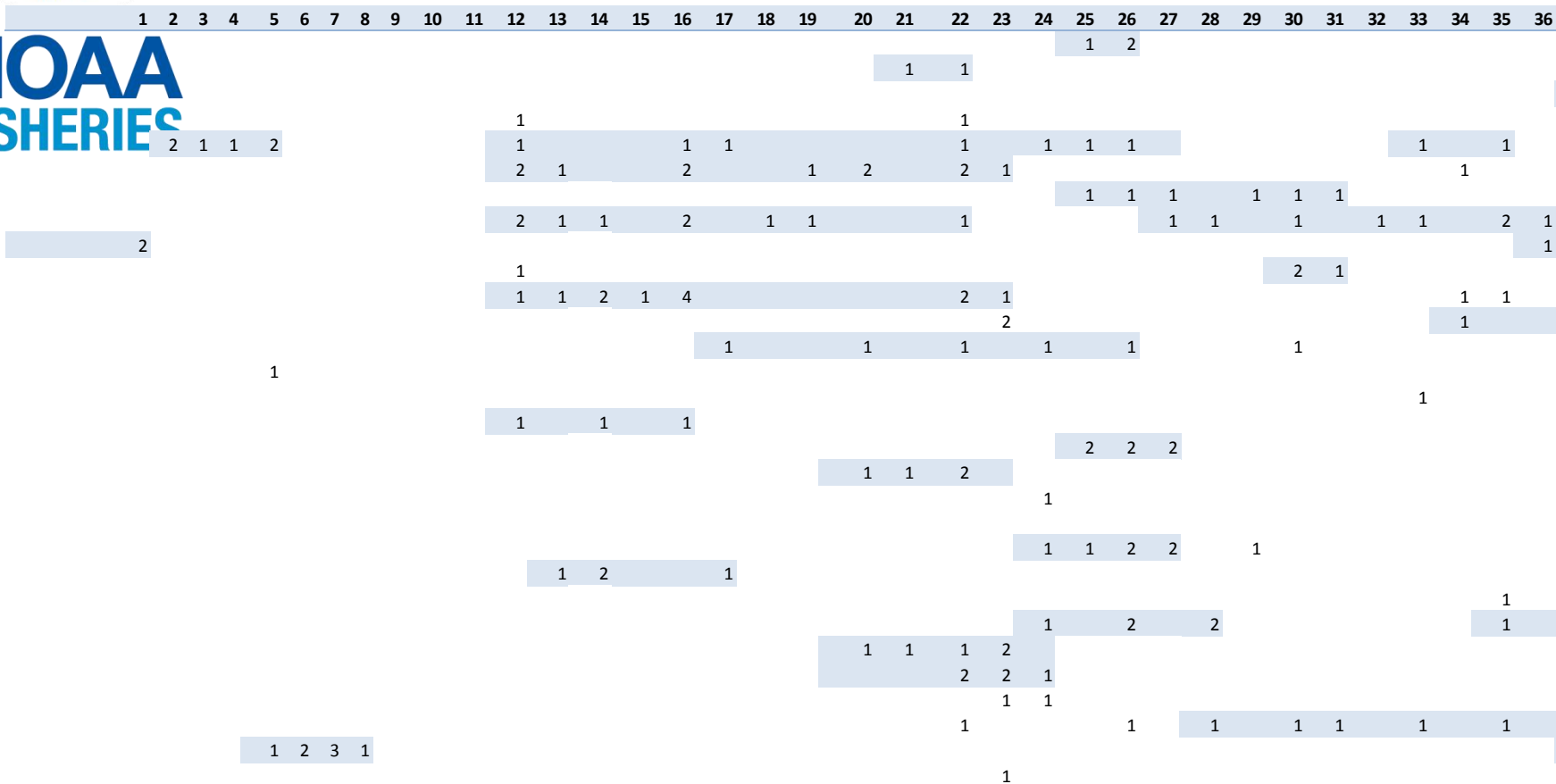
## How many vessels can we accommodate?

- Limited number of camera systems (15)
- Funding for 60 installations
- Dependent on fishing patterns of volunteer vessels
- Kodiak, Homer, Petersburg and Sitka



# 2013-2014 EM Pilot Project

# How many vessels?





**NOAA**  
**FISHERIES**

# Questions?



**NOAA**  
**FISHERIES**

# Behind the Curtain EM Accomplishments in 2013

## Electronic Monitoring Logging System (EMLS)

- Provides for data entry of EM data
- Integrates data into NORPAC
- Allows integration into Catch Accounting System





# Building Infrastructure

- Data Management (FIS Funding)



**Alaska Fisheries Science Center**

NATIONAL MARINE FISHERIES SERVICE - NOAA FISHERIES

[EMLS Home](#)

[Electronic Thumb Counter](#)

[Manage Camera](#) ▼

[Manage Longline Set](#)

[Manage Data](#) ▼

[farron.wallace](#)

[Logout](#)

Select Camera and Vessel



Select Trip



Select Haul

Select EM Camera and Vessel

[Go to EMS Home](#)

Cannot find camera vessel combination?

[Search in Deployment Records](#)

No data found.

[Next to Select Trip](#)



**NOAA**  
**FISHERIES**

# Behind the Curtain EM Accomplishments in 2013

**Developed a Stereo Camera systems designed specifically for fishery data collection**

- Support automation for capturing specific catch events

## **Supports Catch Estimation**

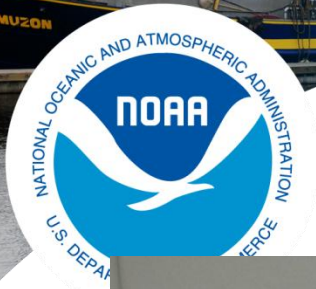
- Supports collection of high quality images of fish

## **Cost Efficiency**

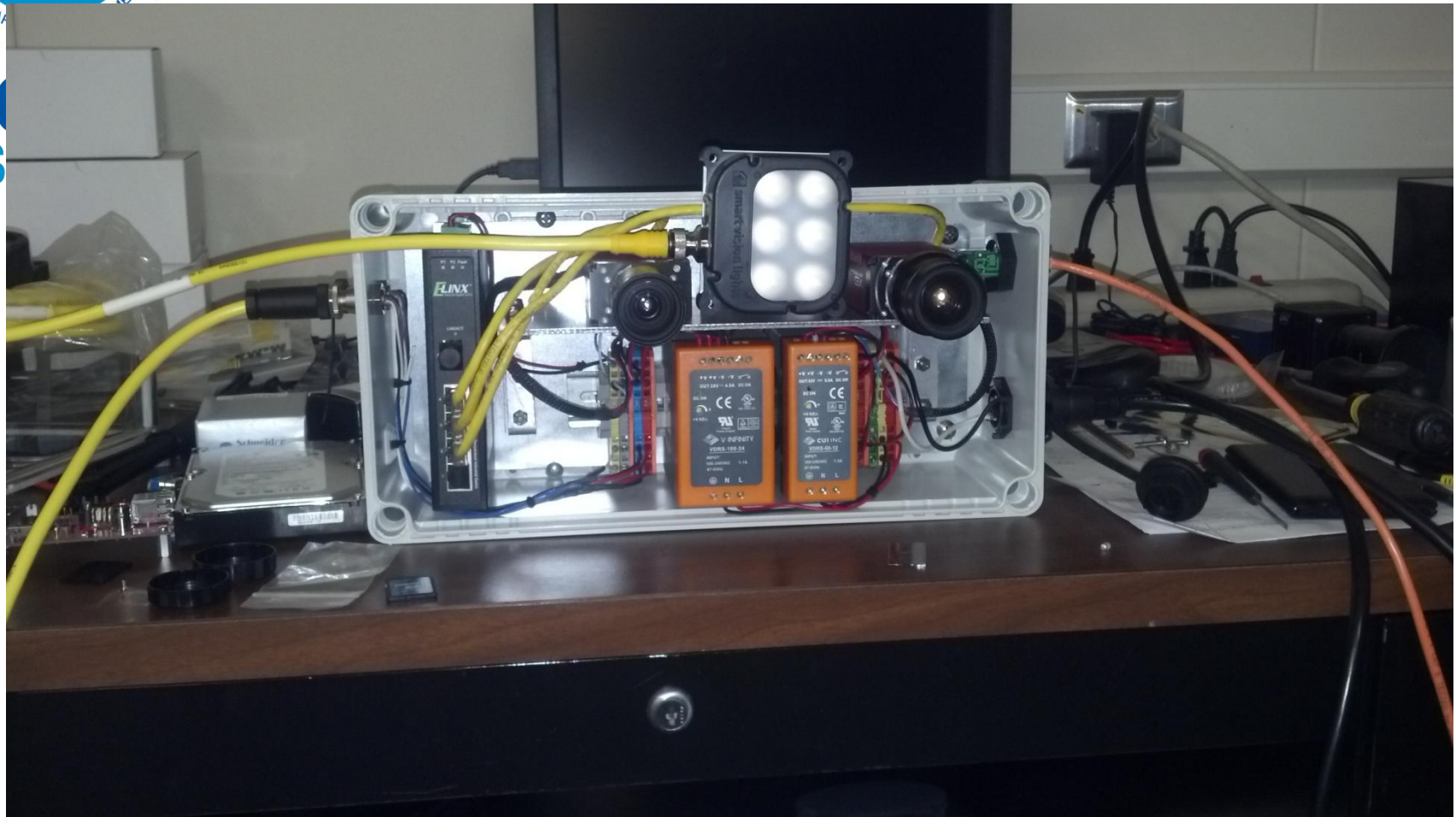
- Supports automation of length composition

# Building Tools

- Stereo Camera's (PSMFC Funding)

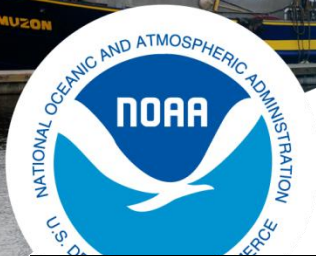


NO  
FIS



# Building Tools

- MACE

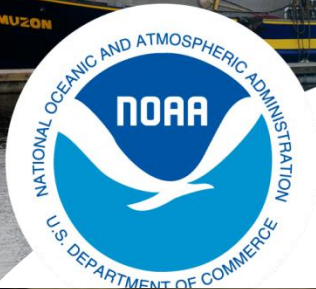






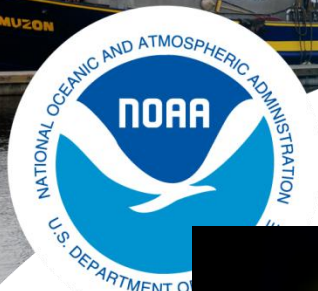
# Building Tools

- MACE



# Building Tools

- MACE



**NOAA**  
**FISHERY**





**NOAA**  
**FISHERIES**

# **Behind the Curtain EM Accomplishments in 2013**

**Developed and Submitted Numerous Funding  
Proposals in 2013 to support EM projects in 2014  
and beyond.**





# EM Projects in 2014



**NOAA**  
**FISHERIES**

- 1. Automated delivery of e-logbook data**
- 2. Develop/test stereo camera chute system  
(Partially Funded)**
- 3. Develop/test stereo camera catch monitoring  
system**
- 4. Application Development  
(Partially Funded)**
- 5. Integrating sensor data and e-logbooks  
(Unfunded at this time)**



**NOAA**  
**FISHERIES**

# Questions?



**NOAA**  
**FISHERIES**

# Key considerations for collecting scientific information using EM

## Quality Assurance

- Management plan to ensure integrity of the data

The System

## Quality Control

- Assess to quality of the analytical data

The Tools

## Clear Objective

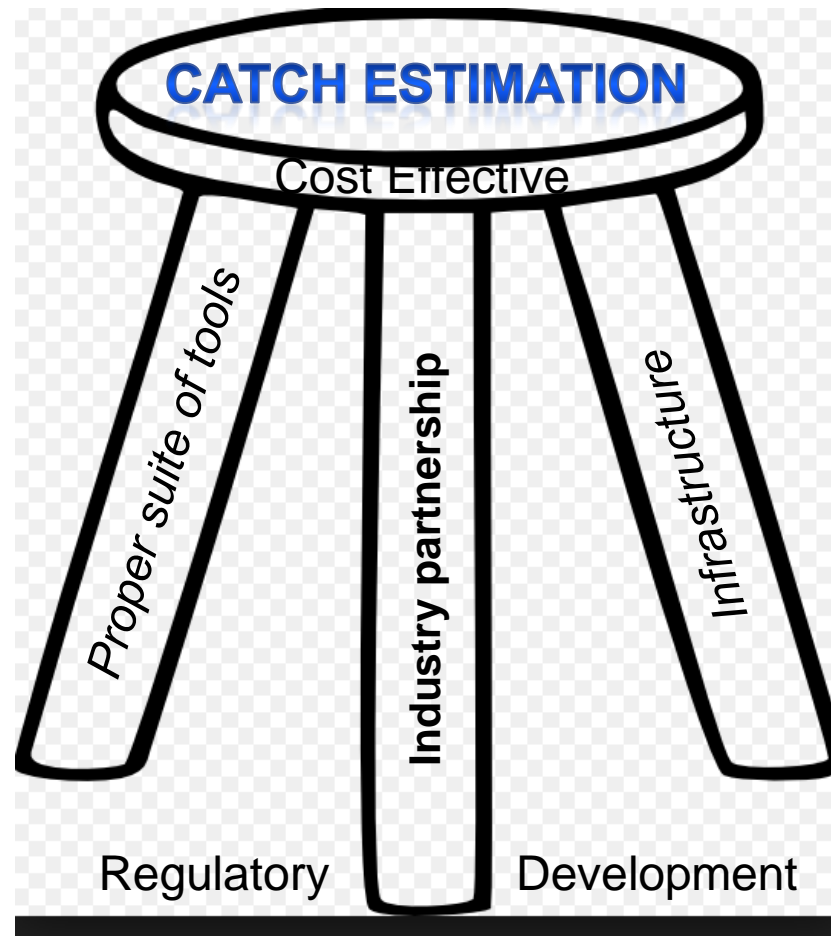
- Study design to collect and process the data

The Process

# Key considerations for implementing an EM program



**NOAA  
FISHERIES**





**NOAA**  
**FISHERIES**

# Building Partnerships

Outreach Meetings

Cooperative Research

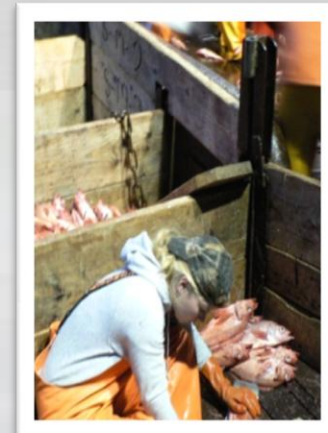
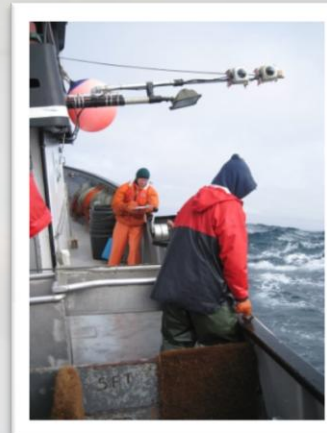
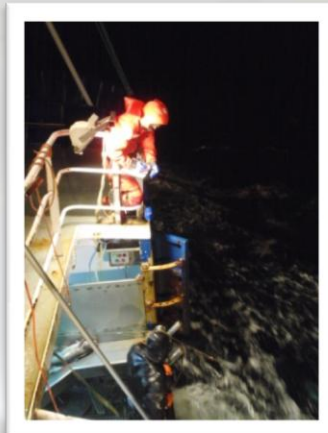
OAC?

Workgroup?

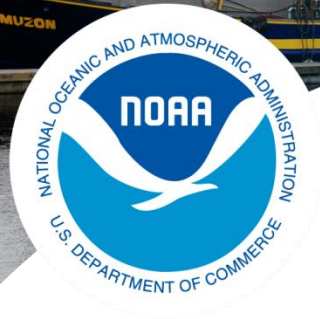


# 2014 Observer Program

Changes to support sustainable fisheries







# Why are *e-logbooks with sensors* important?

1. Serves as ER System that independently collects set, haul positions and effort for observed and unobserved vessels. (potential VMS replacement?)
2. Provides information to validate EM data and improve catch estimation.
3. Base data collection system where a camera system could be “plugged in”
4. Provides data to develop fisheries depended system for estimating CPUE **where total time** is known.
5. It can be automated and is cost effective.