*Science, Service, Stewardship*

# OVERVIEW OF PREVIOUS EM STUDIES

**NOAA FISHERIES SERVICE**
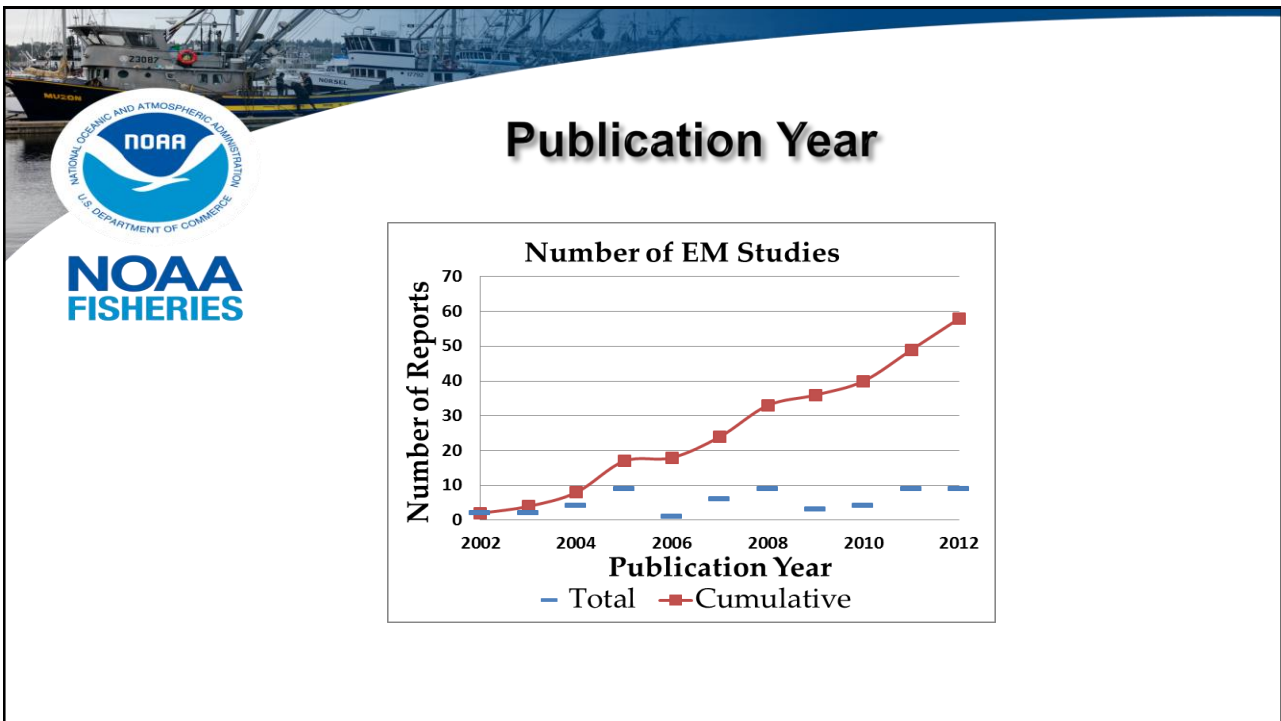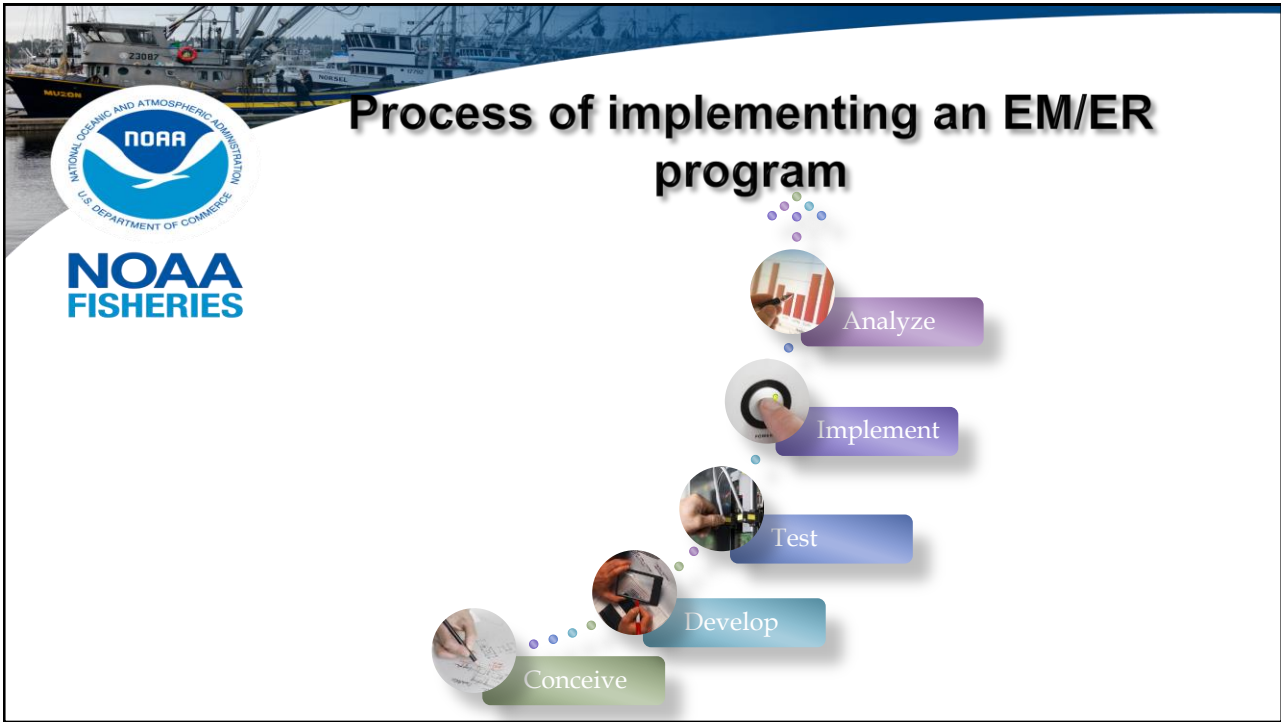
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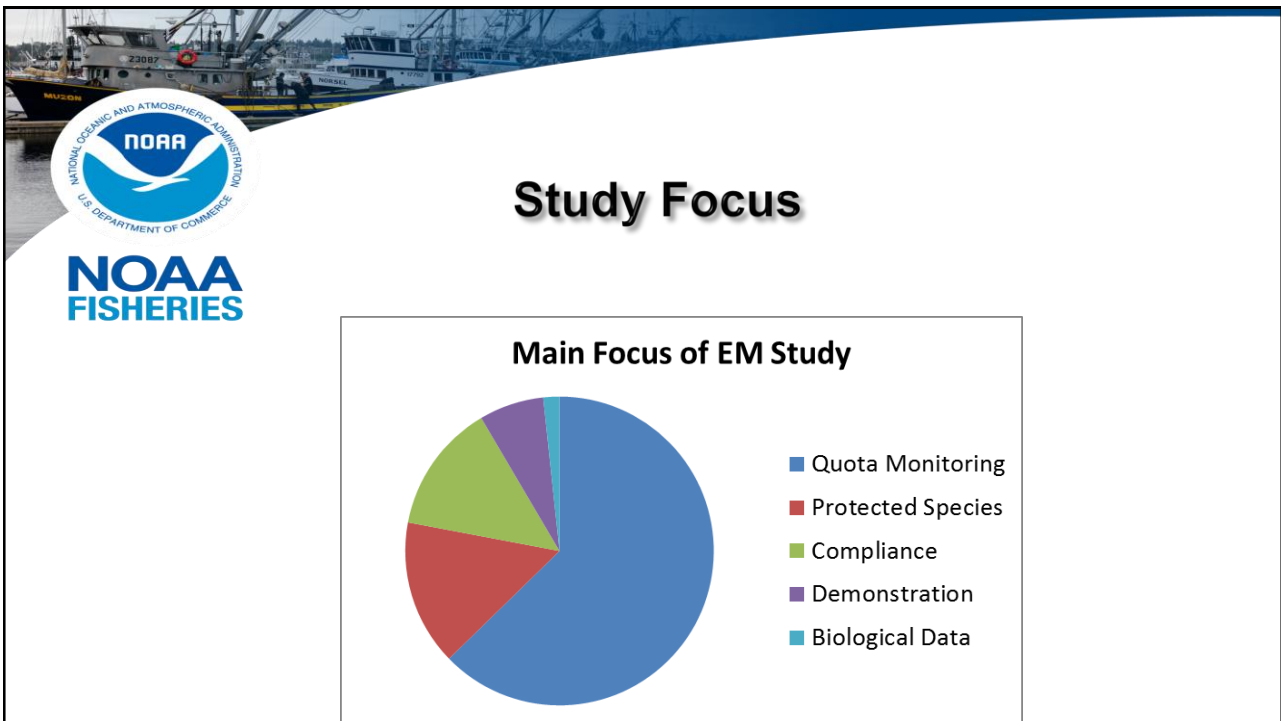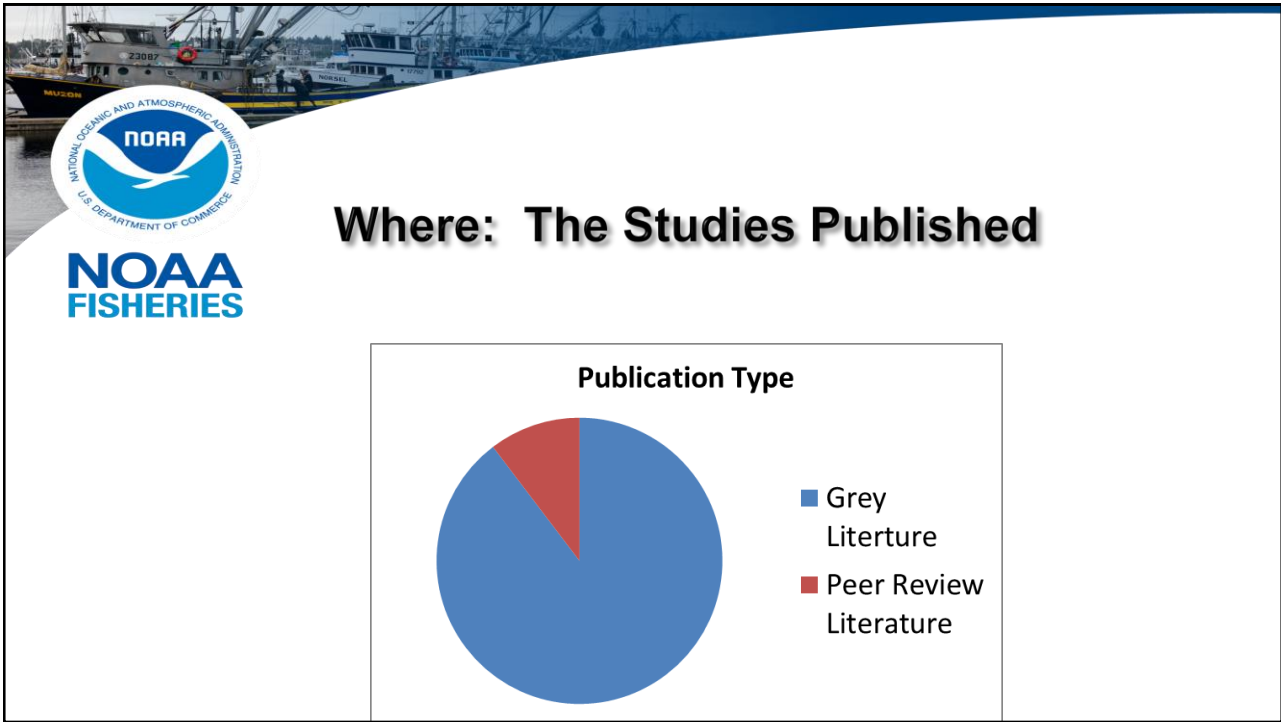
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## Presentation Outline

- Background Information
- Previous EM studies
- Results from 2014.

**NOAA FISHERIES**

# Process of implementing an EM/ER program

Analyze

Implement

Test

Develop

Conceive

# Publication Year

**Number of EM Studies**

Number of Reports

Publication Year

– Total  ■ Cumulative

# Where: The Studies Published

### Publication Type

- Grey Literture
- Peer Review Literature

# Study Focus

### Main Focus of EM Study

- Quota Monitoring
- Protected Species
- Compliance
- Demonstration
- Biological Data

Species?

Number of Studies
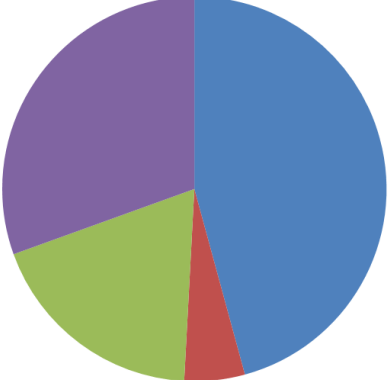
- All Species
- Select Group
- Single species



Data?

Number of studies

- Enumerated species data for retained and discard
- Enumerated non-specified retained and discard
- Enumerated retained catch
- Proided no enumeration of catch

## Recommendations

> Must have a clear objective to develop a successful program

> Must have Industry support and motivation to make it work

> Deploy the necessary set of tools to collect and validate information
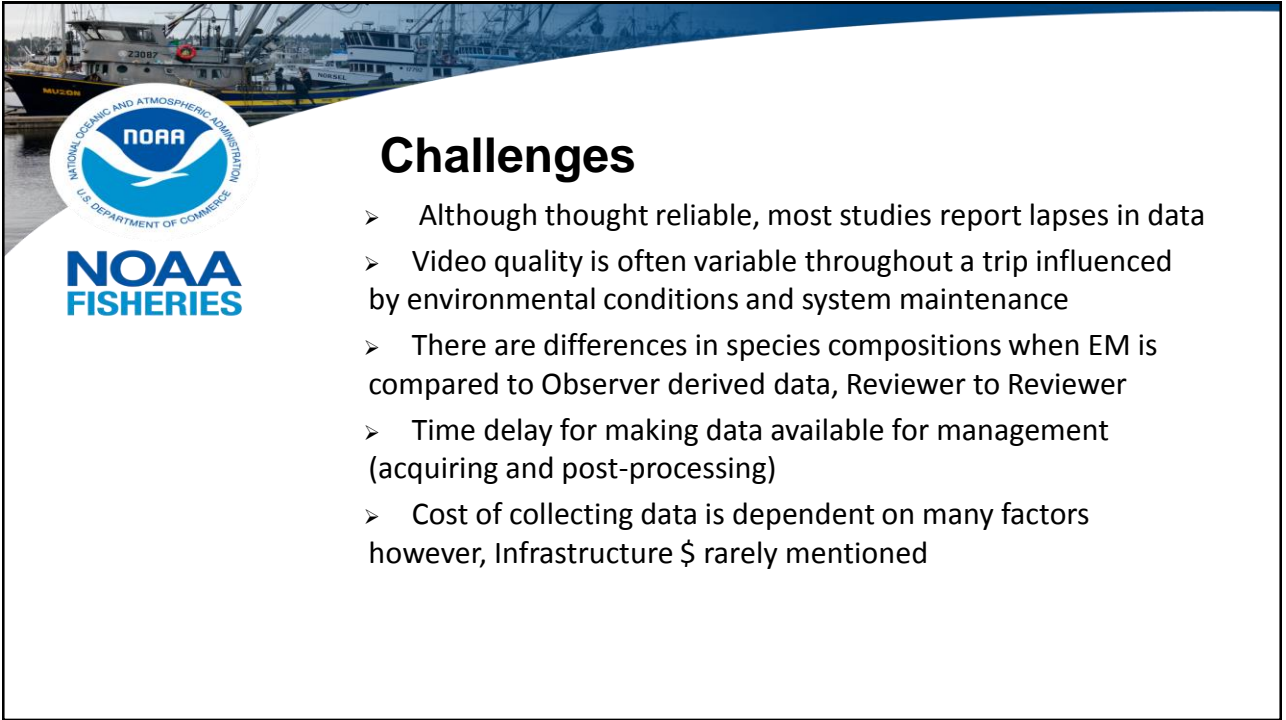
> Develop infrastructure first to support

## Towards Implementation
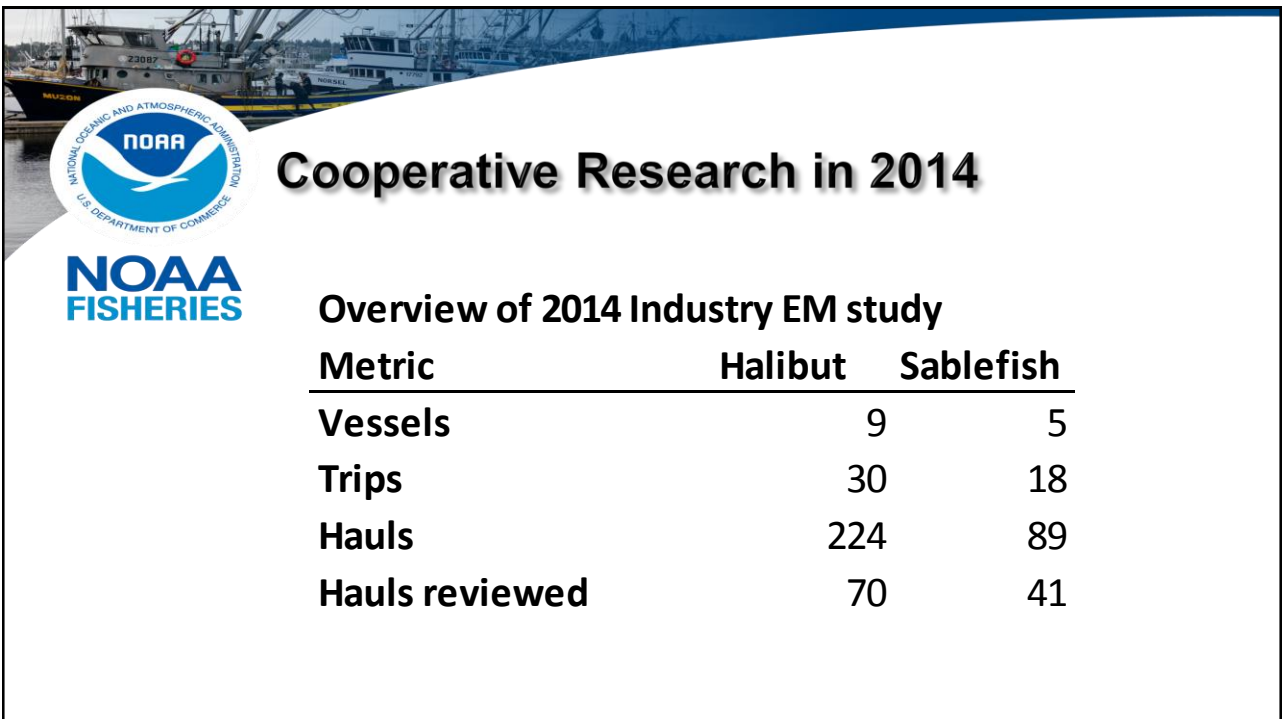
•Strategic Plan clearly lays out objectives and a path forward.

•Effective tool for a variety of monitoring objectives and supported by the fishing (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).

•Developing a new suite of tools and incorporating

## Challenges

➢ Although thought reliable, most studies report lapses in data

➢ Video quality is often variable throughout a trip influenced by environmental conditions and system maintenance

➢ There are differences in species compositions when EM is compared to Observer derived data, Reviewer to Reviewer

➢ Time delay for making data available for management (acquiring and post-processing)

➢ Cost of collecting data is dependent on many factors however, Infrastructure $ rarely mentioned
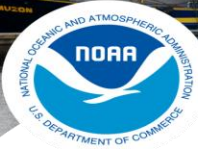
## Cooperative Research in 2014

**Overview of 2014 Industry EM study**

| Metric | Halibut | Sablefish |
|---|---|---|
| Vessels | 9 | 5 |
| Trips | 30 | 18 |
| Hauls | 224 | 89 |
| Hauls reviewed | 70 | 41 |

## Cooperative Research in 2014

| Image Quality (# of Hauls) | | | % of Hauls | |
| --- | --- | --- | --- | --- |
| Metric | Halibut | Sablefish | Halibut | Sablefish |
| High | 37 | 21 | 53% | 51% |
| Medium | 31 | 19 | 44% | 46% |
| Poor | 2 | 1 | 3% | 2% |

**Number of trips with incomplete video data**

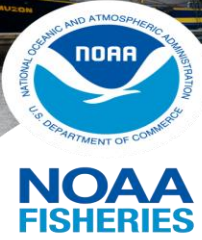| Metric | Halibut | Sablefish | Halibut | Sablefish |
| --- | --- | --- | --- | --- |
| Every Haul affected | 6 | 1 | 20% | 6% |
| Some hauls affected | 4 | 3 | 13% | 7% |

## Cooperative Research in 2014-2015

**Electronic Monitoring Logging System (EMLS)**
- Provides for data entry of EM data
- Integrates data into NORPAC
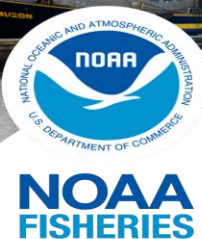- Allows integration into Catch Accounting System

## Cooperative Research in 2014-2015

**Developed a Stereo Camera and Camera Chute systems designed specifically for fishery data collection**
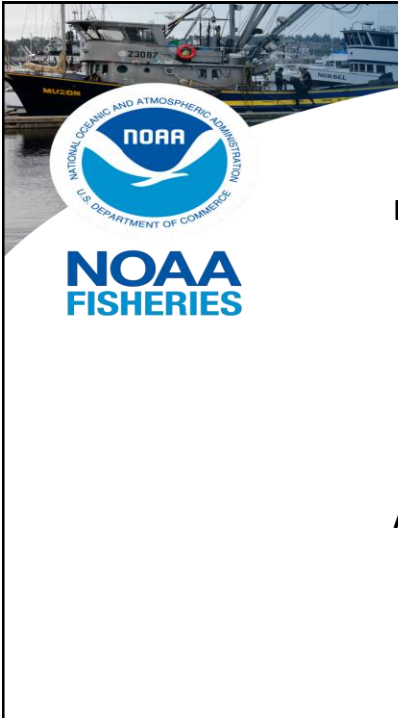
- Support automation for capturing specific catch events
- Supports collection of high quality images of fish
- Supports automation of length composition

## EM Projects Planned in 2014-2015

**Application Development**

- GUI interface for camera control and calibration
- Improve automation of catch events
- Automation of species identification and classification
- Automated capture of Meta data
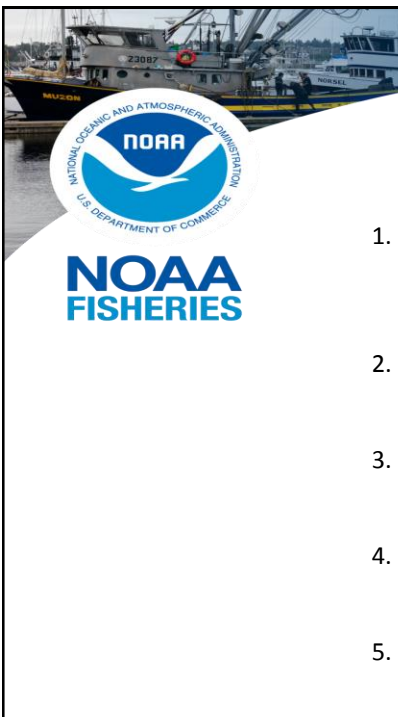- Improve GUI for data entry

2/3/2015

## EM Projects Planned in 2014-2015

**Integrate sensor data into e-logbook application**
- Provide automated detection of set and haul positions.
- Simplify and automate e-logbook data entry
- Provide greater precision and improve data quality

**Automate delivery of e-logbook data**
- Provide automated delivery of e-logbook data when within wireless range
  - Cell phone
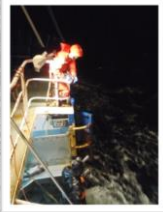  - Wireless networks

## 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 (self reported and trip completeness) and improve catch estimation.

3. Base data collection system where a camera system could be "plugged in"

4. Provides population trend data to support stock assessments (Sablefish) **where total time** is known.

5. It can be automated and is cost effective.

# 2014 Observer Program

Changes to support sustainable fisheries



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# What is Required for Discard Estimation?

- Provide reliable information on
  - Species composition
  - Species weight
  - Disposition
  - Location
  - Effort

- A way to validate data
  - Self reported or video
  - Trip completeness
  - Image quality