



NOAA FISHERIES

National Observer Program

Fisheries Monitoring

The successful management of fisheries and effective decision-making about our shared ocean resources requires accurate, timely, and cost-effective data collection. For decades, accounting for what fishermen keep and what they discard has been accomplished by combining information from logbooks, shoreside interviews, and observers—specially trained independent biologists who deploy on fishing vessels to collect a broad range of data.

Over recent years, electronic monitoring (i.e., video cameras and gear sensors) and reporting (i.e., submitting information electronically) have been increasingly adopted to collect catch data as well. Both observers and EM play important—but distinct—roles.

LEARN MORE

National Observer Program
[www.fisheries.noaa.gov/
topic/fishery-observers](http://www.fisheries.noaa.gov/topic/fishery-observers)

Electronic Technologies
[www.fisheries.noaa.gov/
topic/fishery-observers/
electronic-monitoring](http://www.fisheries.noaa.gov/topic/fishery-observers/electronic-monitoring)

Fisheries Data Collection: Observers and Electronic Monitoring

KEY ATTRIBUTES

Deploying observers and electronic monitoring systems requires resources for full implementation, and both approaches to data collection present benefits for fishing vessels. These resources and potential benefits include:

Observers

- Are biologists who have completed three weeks of rigorous scientific and statistical training, and collect data alongside the captain and crew.
- Require onboard accommodations.
- Review safety equipment via a checklist prior to deploying, which can identify outdated or expired equipment.
- Provide knowledge of first aid and emergency safety procedures.
- Interact with captains and crew to obtain trip- or haul-level information.
- Provide trip information and catch data in a timely manner, usually upon landing.



Electronic Monitoring

- Requires hardware installation.
- Can operate 24/7 in most conditions, but requires proper maintenance, especially during a fishing trip.
- Collects multiple visual records and data points for analysis.
- Typically requires shoreside review of images to produce usable data.
- May require adaptation of operating procedures, fishing practices, and catch handling to capture images.
- Eliminates the need for berthing accommodations for observers, and does not require review of safety checklists.



DATA ELEMENTS COLLECTED

Catch	Observers	Electronic Monitoring
Bycatch, Length*, Aggregate Weight*, Individual Weight*, Species or Species-Complex ID*, Catch Condition, Disposition	✓	✓
Biological Samples, Discard Disposition Reason, Protected Species Interaction/Sighting**	✓	
Fishing Operations		
Timestamps, Positional Data, Vessel Activity, Vessel Identifier, Event Unique Identifier, Gear Sensor Data, Crew Catch Handling	✓	✓
Intended Target Species, Crew Profiles, Operation Costs, Mesh Size or Other Gear-Related Metrics to Evaluate Fishing Effort	✓	
Other		
Weather and Environmental Data, Economic Data	✓	

**EM systems can collect these data if catch is handled appropriately, using additional equipment not required by many EM programs (e.g., measuring strips, scales).*

***Limited protected species interaction and sighting information may be available from some EM systems.*