Observer Data Supports Sustainable U.S. Fisheries

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Council Member Training
October 17, 2019
National Observer Program

Mission
Provide a formalized mechanism for NOAA Fisheries to address observer issues of national importance and develop policies and procedures to ensure that NOAA Fisheries observers and observer programs are fully supported. The policies must reflect the diverse needs of regional observer programs while enhancing data quality and achieving consistency in key areas of national importance.

Objectives
• Coordinate the National Observer Program Advisory Team (NOPAT)
• Communicate and advocate the mission of the National Observer Program and each regional observer program
• Develop and support national standards and policies to create high quality, cost effective, efficient, and productive observer programs
• Characterize and qualify the activities and resources of NOAA Fisheries observer programs and advocate for full support
Responsibilities of National Observer Program

Advisory Team (Steering Committee)
  • Sets overall priorities, policies, and budget

Safety Advisory Committee
  • Provides guidance to the NOPAT to ensure the well-being and safety of observers

Program Management Office
  • Manages day-to-day operations, policy development, budgets, briefings.
  • Chairs/Co-Chairs:
    - Electronic Technologies Working Group
    - National Bycatch Report Steering Committee
    - National Observer Program Advisory Team

Deploy 950 observers / >75,300 sea days / 53 fisheries
Regional Observer Program Responsibilities

- Sampling protocols and observer coverage levels
- Safety training
- Observer deployment
- Observer debriefing
- Data management
- Data analysis
Responsibilities of Deployed Observers

Collect fishery dependent data
- Fishing effort, gear type and location
- Biological samples (length, sex, maturity and age structures)
- Supports in season management of fisheries

Monitor fishing activities and support vessel safety compliance
- Magnuson-Stevens Act (MSA)
- Marine Mammal Protection Act (MMPA)
- Endangered Species Act (ESA)
- US Coast Guard commercial fishing vessel regulations
Commercial Fishing Effort Data

For every observed haul/set collect:

• Date and time of fishing activity
• Latitude and longitude of gear deployment and retrieval
• Depth of catch
• Gear type and mesh measurements
• Vessel characteristics
  ➢ Type, permit number, length
• Vessel catch estimates
Observer At-Sea Duties

- Samples from incidentally caught marine mammals and endangered seabirds (MMPA and ESA monitoring)
- Fishing effort and total catch estimates
- Species composition on individual hauls/sets
- Discarded catch data (Bycatch)
  - Non-target species
  - Prohibited species
Biological Sampling

• **Sex and Length**
  – Random sample of fish from within species composition sample
  – Sample size dependent on predominant species and area

• **Age (otoliths or vertebrate)**
  – Random sample from within sex and length sample
  – Sample size dependent on predominant species and area
Observer Coverage and Deployment

• Coverage rates vary by regional program and funding availability

• Deployment through government contract or directly with Industry

• Each deployment length is variable
  Multiple gear types (fixed gear, trawl gear, mesh size)
  Vessel size (<30 to >200 Ft LOA)
Atlantic Ocean and Gulf of Mexico 2019 coverage

- NE Groundfish Gillnet/Trawl: Approx. 15%
- NE Scallop Dredge: 5-20% based on permit type & area fished
- Mid-Atlantic Large & Small Mesh Trawl: <10%
- Herring Trawl (incl. Pair Trawl): 20%
- Mid-Atlantic Coastal Gillnet/Pot/Seine: <10%
- Atlantic Pelagic Longline: <10%
- S Atlantic Shark Driftnet: 38%
- Atlantic Shark Bottom Longline: Approx. 5%
- Shrimp Otter Trawl: 2%
- GOM Reef Fish: 1% combined

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North Pacific (Alaska) 2019 coverage

Bering Sea/Aleutian Islands/ Gulf of Alaska cooperatives: 100%

Bering Sea/Aleutian Islands/ Gulf of Alaska Groundfish & Halibut Trawl/Longline/Pot: 17-30%
Pacific Coast and W Pacific 2019 coverage

West Coast Trawl Catch Shares
100%

West Coast Groundfish
Non-Catch Share Fisheries
Approx. 3-8, 40%, based on permit type

Hawaii/American Samoa
Pelagic Longline: HI, 20% for tuna, & 100% for swordfish
American Samoa, 20% tuna

CA Pelagic Longline
(3 vessel): 100%

CA Large-Mesh Drift Gillnet: 19%

CA Deep Set Bouy (EFP): 40%
Electronic Technologies in U.S. Fisheries

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October 17, 2019
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VMS Program in U.S. Fisheries

Program Basics

• > 4,000 vessels
• Satellite-based communications
• Operates all the time, in real-time
• Location, hail in/out, catch reporting
• Data confidentiality requirements

How it is used

• Monitoring closed areas and transiting
• Effort and quota monitoring
• Validating other data sources
• Port arrivals for sampling programs
Observer Technologies in U.S Fisheries

Existing Technologies

• Efficient, timely, and legible
• Customization and adaptation
• Auto-calculation and sync to databases
• Front-end error checks and validation

Future Development

• Barcoding and GPS integration
• Application-driven sampling
• Bluetooth with scales
• Species ID and image collection
Electronic Reporting in U.S. Fisheries

Commercial and For-Hire Fisheries

- Vessels, processors, and dealers
- Long history of paper programs
- Councils - NE, MA, SA, GM, WP, & Pac
- Different requirements and participation
  - NE ~200 (out of 2,100) all commercial vessels
  - SE ~500 (out of 840) Gulf of Mexico snapper/grouper
  - PI ~10 (out of 165) Hawaii deep-set longline

Recreational Fisheries

- Data *must* be validated
- Angler *must* participate
- Participants *must* report all catch from all trips
U.S. Electronic Monitoring Programs

Electronic monitoring (EM) is being piloted and implemented across the U.S. to expand and improve fisheries-dependent data collection, while reducing costs and increasing the timeliness of information. EM is used to audit logbook data, monitor compliance with discard requirements, and collect information on discards and bycatch. The programs on this map are listed in three categories: implemented and under regulation (bold); pre-implementation, under an exempted fishing permit (EFP), and/or being considered by their respective Fishery Management Council (plain); and pilot projects (italics).

For more information, visit fisheries.noaa.gov/national/fisheries-observers/electronic-monitoring.
Video Review - Overview

Videos displayed during presentation
Applications of Electronic Monitoring

Scientific data collection – support stock assessments, bycatch reporting, ecosystem research

Management – real-time monitoring (individual vessel quotas, catch limits), auditing logbook reporting

Compliance monitoring – verify catch retention, access to closed areas, increased accountability

Additional Uses
- sustainability certifications
- improved traceability
- value-added products
- data monetization
Electronic Monitoring Challenges

Onboard vessel – Catch handling, species ID, weight estimation

Costs & logistics – Transmission, review, and storage

Regulatory – Writing regulations for changing technologies

Data Infrastructure – New data in older systems

Analytical – Developing standards, comparing old with new

Policy development
  • Access and ownership
  • Video retention requirements
  • Confidentiality

Other – Outreach and communication, scope creep
Electronic Technologies (ET) Policy Directive

2013
• Encourage the adoption of ETs, be effective and efficient, meet all needs
• Consider a combination of technologies, including electronic monitoring (EM)
• Utilize open source code and standards
• NOAA Fisheries will assemble guidance and best practices
• Consider funding options, NMFS and industry to coordinate on costs

2019
• Added observer technologies
• Annual updates (rather than biannual)
• New guidance on updating Regional ET plans
• Clarified objectives and definitions
Procedural Directive on Cost Allocation for EM

- Sampling – Hardware, video review and storage
- Administrative – Program support, provider certification/auditing, data analysis, and storing Federal records

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<thead>
<tr>
<th>Function</th>
<th>Cost Responsibility</th>
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<tr>
<td>Sampling</td>
<td>• Industry&lt;br&gt;• NOAA Fisheries - fees collected from industry&lt;br&gt;</td>
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<td>- EX: North Pacific landings fee&lt;br&gt;• NOAA Fisheries for specific Federal programs&lt;br&gt;</td>
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<td>- EX: ESA, MMPA, SBRM&lt;br&gt;• NOAA Fisheries&lt;br&gt;• NOAA Fisheries - fees collected from industry&lt;br&gt;</td>
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<td>- EX: West Coast cost recovery program</td>
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Third-Party Data Retention Procedural Directive

- Current – Retained indefinitely
- Future – Procedural directive and guidance to Regions
- Process – Comments due Dec 31, 2019, final policy in 2020

The monitoring period often extends beyond the close of a fishery as data are collected, processed, and analyzed.

1. Fishing Year (12 Months)
2. Monitoring Period (Variable)
3. Minimum Retention Period (12 Months)

Full Recordkeeping Period

Day 1
Minimum Retention Period Starts

Day 365
Minimum Retention Period Ends
Federal Records Retention Schedule

National Archive and Records Administration (NARA)

- Current - Retain with observer records (indeinitely)
- Future – New retention schedule for video and images
- Process - NARA publishes an FR notice, 45-day public comment period

[Diagram showing the process of fishing season and monitoring, with phases labeled 1. Creation, 2. Maintenance & Use, 3. Disposition, and timeline for fishing year and monitoring period, leading to a 5-year retention period.]
Electronic Technologies Progress in 2019

Policy Development

- Policy Directive for Electronic Technologies (final)
- EM Cost Allocation Procedural Directive (final)
- Third-Party Video Retention Requirements (draft)
- Retention Schedule for Federal Records (draft)

National EM Guidance and Best Practices

- EM program design
- Minimum standards and best practices
  - Vessel systems
  - Video review and data management
  - Data standardization and uses
- EM case studies
- Status of EM-related policies
Regional ET Implementation Plans

Guidance and template out to Regions in June

- Regional 5-year vision and priorities
- Council actions, research, development, and pilot projects
- Data integration and interoperability (e.g., One touch reporting)
- Impediments to implementation and resource needs
- Tables to track progress for EM, ER, VMS, observer technology, etc.
- EM costs and transition plans

Communication and outreach

- NOAA will formally announce this initiative
- Engage and coordinate with all stakeholders
- Encourage cross-regional planning

Final updated ET plans publish in late June 2020
In the year 2024......