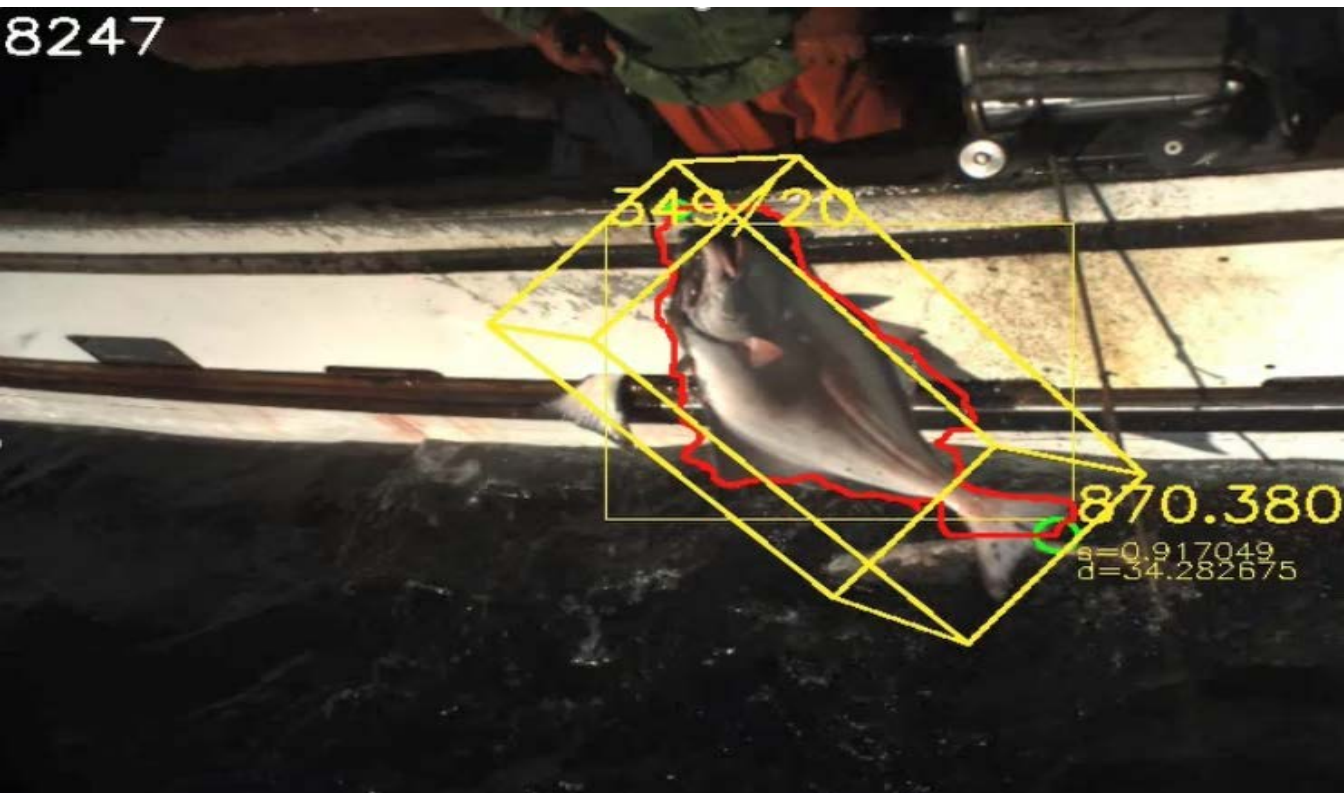




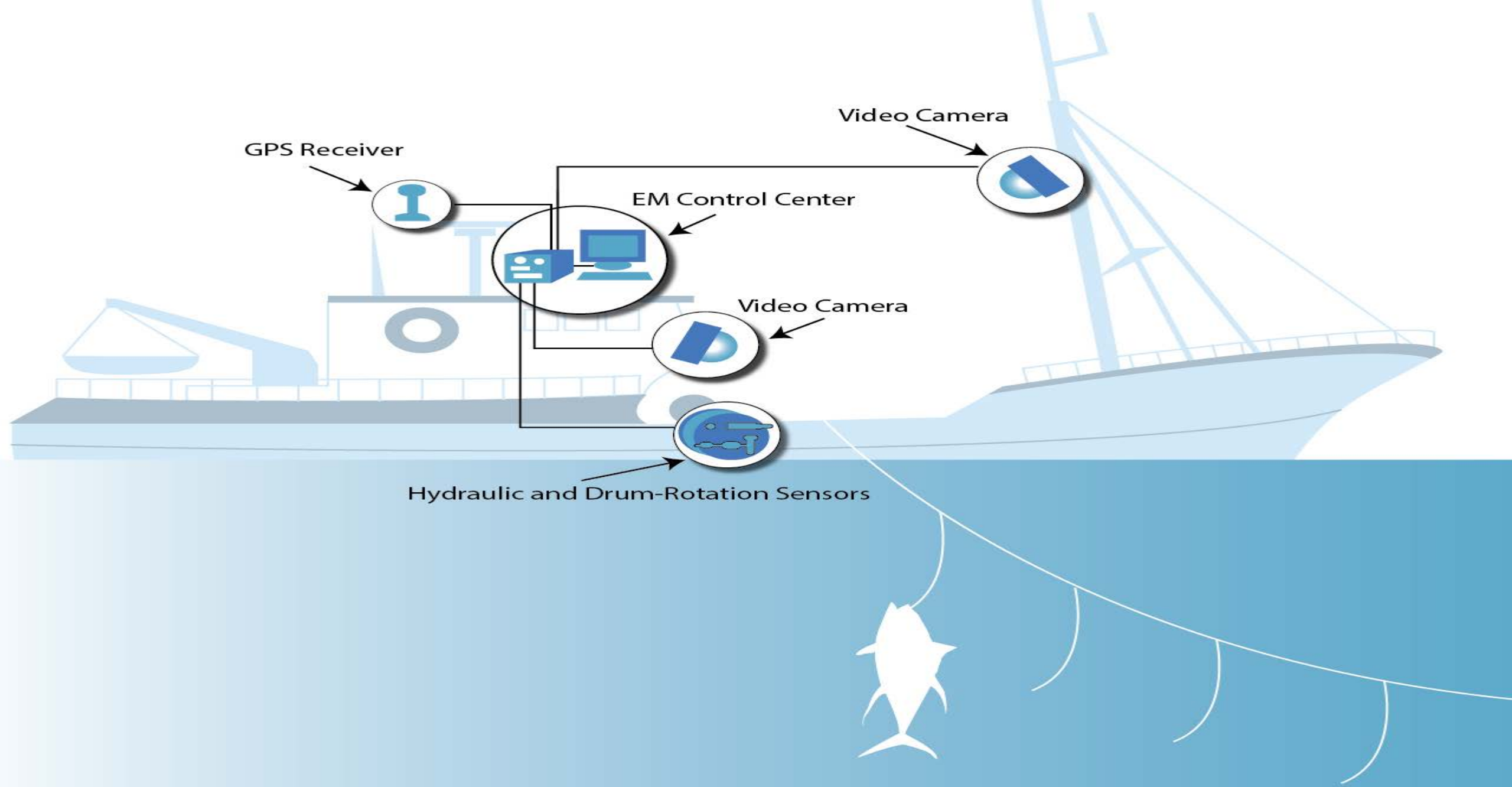
Overview of Electronic Monitoring in U.S Fisheries

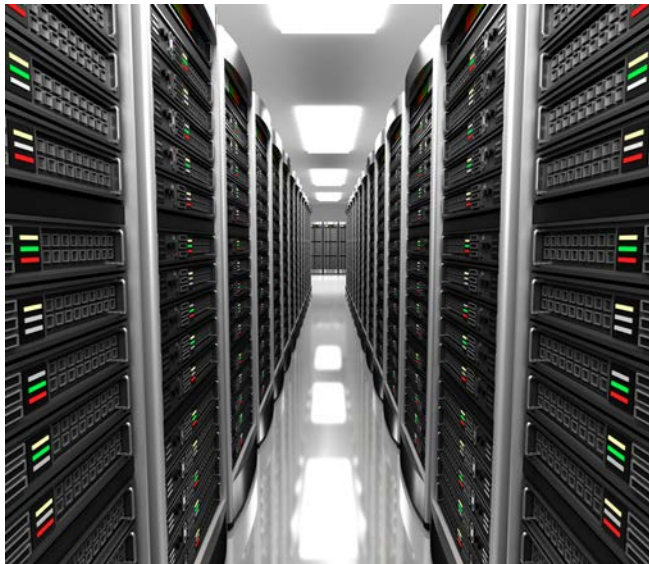
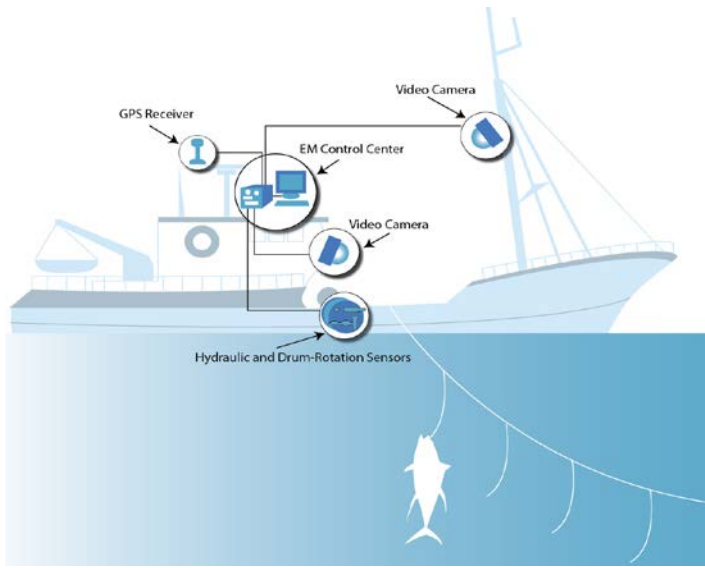
Brett Alger

Electronic Technologies Coordinator
Office of Science and Technology
NOAA Fisheries



February 12, 2020





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 considering by their respective Fishery Management Council (*plain*); and pilot projects (*italics*).

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

Alaska

- **Bering Sea and Aleutian Island (BSAI) Non-Pollock Trawl Catcher/Processor (C/P)**
- **Bering Sea Pollock Trawl C/P and Motherships**
- **Central Gulf of Alaska Rockfish Trawl C/P**
- **BSAI Pacific Cod Longline C/P**
- **Small Boat Fixed Gear (Longline and Pot)**
- *Pollock Trawl Catcher Vessels*
- *Halibut Deck Sorting Trawl C/P*

West Coast

- **Whiting Mid-Water Trawl**
- **Fixed Gear IFQ**
- **Non-Whiting Mid-Water Trawl**
- **Groundfish Bottom Trawl**
- **Nearshore Rockfish**

Pacific Islands

- *Pelagic Longline - Hawaii Deep and Shallow Set*

Greater Atlantic

- *Northeast Multispecies*
- *Herring Mid-Water Trawl*
- *Northern Gulf of Maine Scallop*
- *Northeast Multispecies For-Hire*

Atlantic Highly Migratory Species

- **Pelagic Longline**

Southeast

- *Snapper-Grouper*

2014 National Workshop – Key Takeaways

- Integrating EM/ER into monitoring programs should be a collaborative process
- Approach program design in a holistic manner
- Identify clear roles and responsibilities, but consider new models
- Setting clear, well defined program objectives is critical
- Identify, create and align incentives
- Think about costs upfront
- Data automation, integration and compatibility: a worthwhile investment
- Setting protocols and managing expectations about how data will be used upfront
- Pathways to implementation



2014 National Workshop – Information Needed

- Who owns the data?
- Who can collect and hold EM data?
- Examples of performance standards and data protocols
- Information to help data integration efforts
- Examples of flexible regulatory approaches
- Finding and accessing alternative sources of funding



2016 National Workshop - Elements of Success

- Strong leadership and vision by fishermen and managers
- Standing working groups all stakeholders
- Regular involvement with Councils
- Sustained funding mechanisms in North Pacific and West Coast
- Use of EM for catch monitoring
- Video access provided to fishermen
- Easing of logistical challenges for small vessels



2016 National Workshop – Best Practices

- Establish clear goals and objectives
- Collaborate with all stakeholders for trust-building and consistency
- Communicate regularly among stakeholders and, ideally, across regions
- Use shared, specific terminology
- Give time for programs to develop, including a pre-implementation period
- Use Exempted Fishing Permits (EFPs) for learning and program adaptation
- Build in flexibility to adapt to changing conditions and technologies
- Focus programs regionally as much as possible
- Link data elements to program objectives; maintain control of data access
- Invest in research to improve efficiencies
- Incentivize program improvement



2016 National Workshop – Challenges

- Building stakeholder buy-in
- Providing long-term funding and agency staffing
- Developing national guidance on data retention, confidentiality, and cost sharing
- Address data concerns: access, confidentiality, quality, cost of acquisition, combining multiple sources, connecting program design to data integration, distinguishing between video and derived data for records retention requirements
- Making EM cost-effective and provide transparency on program costs
- Funding research and development needed for technology development
- Positioning EM as part of integrated electronic reporting and monitoring systems



2016 National Workshop – Challenges

- Implementing in fisheries < 100% monitoring, complex gears (e.g., bottom trawl)
- Volatility in voluntary EM programs
- Expectations for low video review rates when observer coverage is low
- Incorporating EM data in stock assessments
- Using EM to validate anecdotal information
- Balancing between compliance and workability for fishermen
- Considering incentives for participation (e.g., closed area access)



2019 National Workshop – Challenges

- Data security, privacy, and enforcement
- EM program objective and opportunity costs
- Estimating and managing costs
- Evaluating EM program performance
- Develop system-level capacity and support regional exchange
- Articulate and pursue the full value proposition of EM
- Encourage and plan for innovation
- Apply consistent program management practices
- Improve transparency and communications
- Continue to invest in education
- Engage at-sea observers in EM program development



2019 National Workshop – Best Practices

- Invest in education and outreach with all stakeholders and the broader public
- Engage all parties early and regularly
- Convene working groups (e.g. Council committees) to provide diverse perspectives, enlist targeted expertise and explore specific issues
- Share experiences between regions and internationally
- Consider opportunities to learn from other industries/natural resource sectors
- Recognize linkages between EM program objectives, design, and cost
- Communicate developments in national EM policy



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

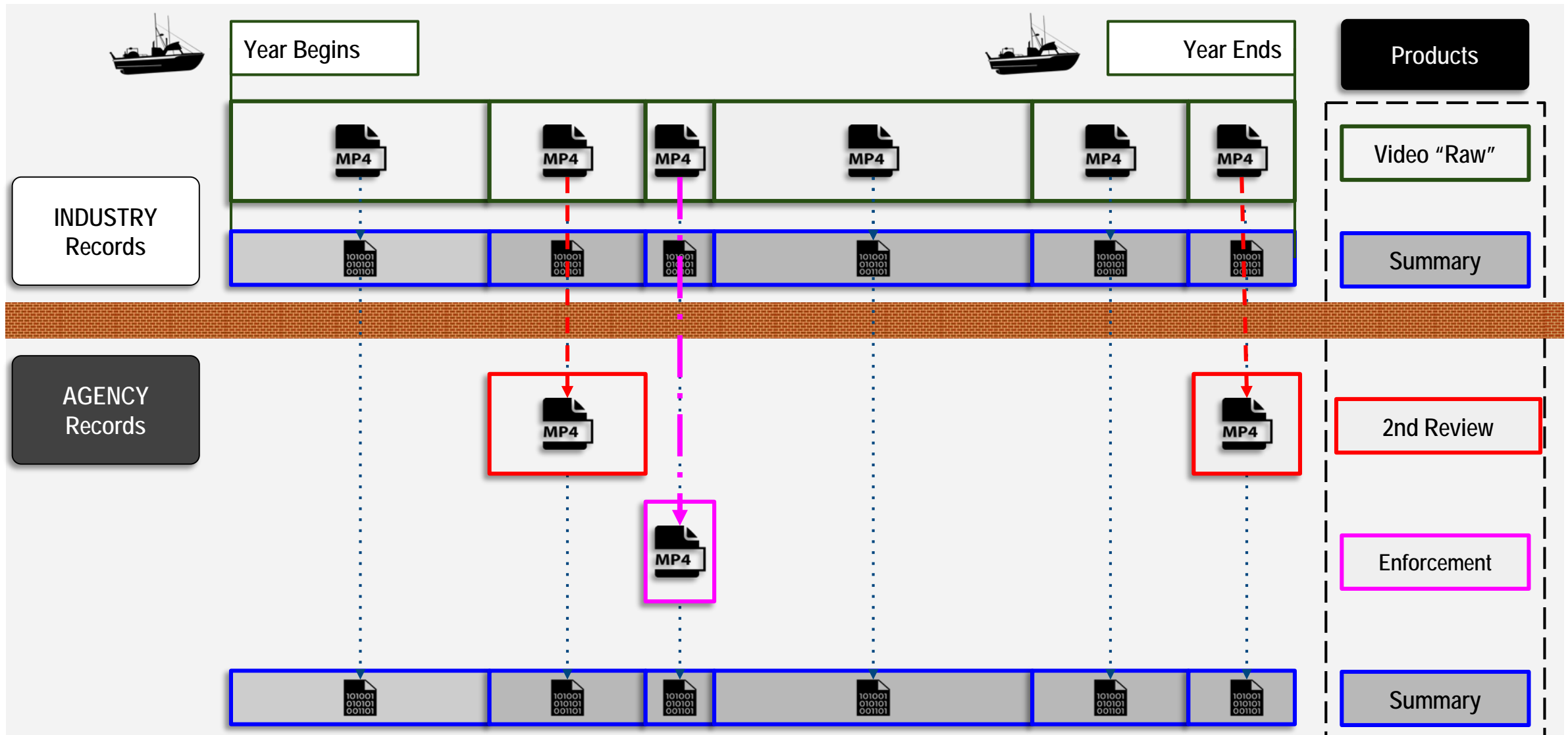
- Added observer technologies
- Annual updates (rather than biannual)
- New guidance on updating Regional ET plans
- Clarified objectives and definitions

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

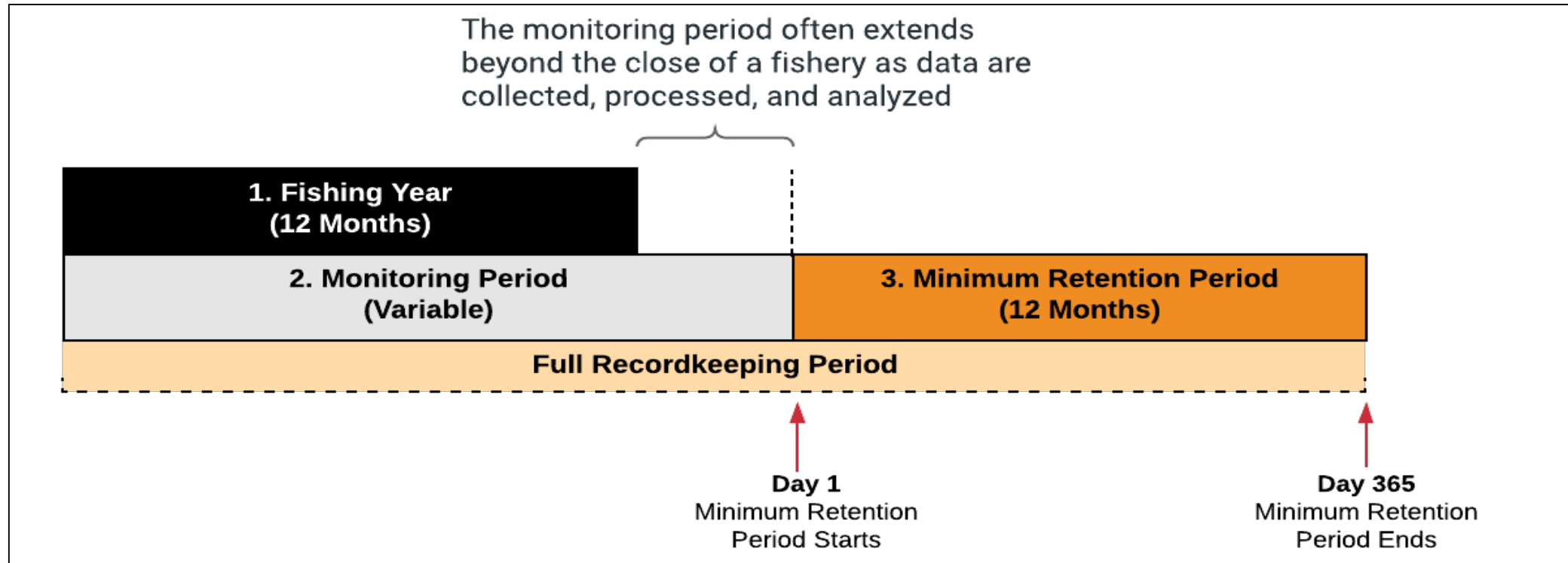
Function	Cost Responsibility
Sampling	<ul style="list-style-type: none">• Industry• NOAA Fisheries - fees collected from industry<ul style="list-style-type: none">- EX: North Pacific landings fee• NOAA Fisheries for specific Federal programs<ul style="list-style-type: none">- EX: ESA, MMPA, SBRM
Administrative	<ul style="list-style-type: none">• NOAA Fisheries• NOAA Fisheries - fees collected from industry<ul style="list-style-type: none">- EX: West Coast cost recovery program

Third-Party EM Model Explained



Third-Party Data Retention Procedural Directive

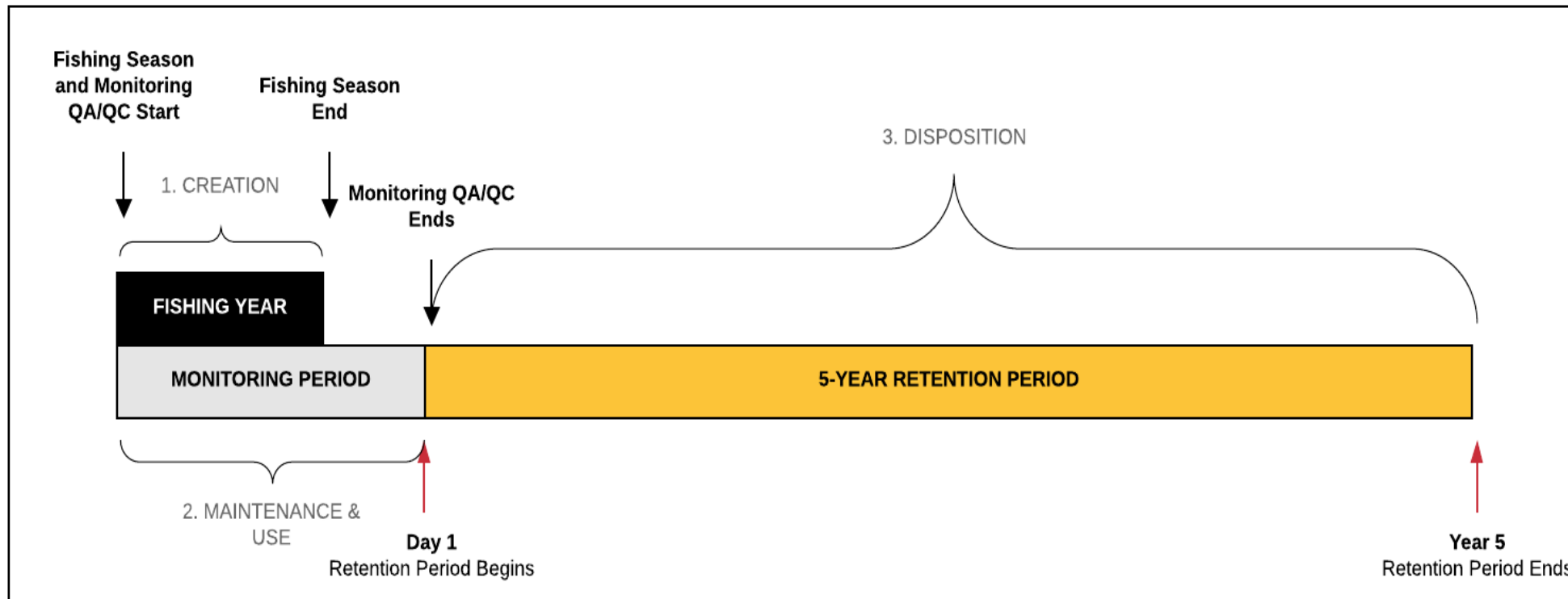
- Current – Retained indefinitely
- Future – Procedural directive and guidance to Regions
- Process – Comments due Dec 31, 2019, final policy in 2020



Federal Records Retention Schedule

National Archive and Records Administration (NARA)

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



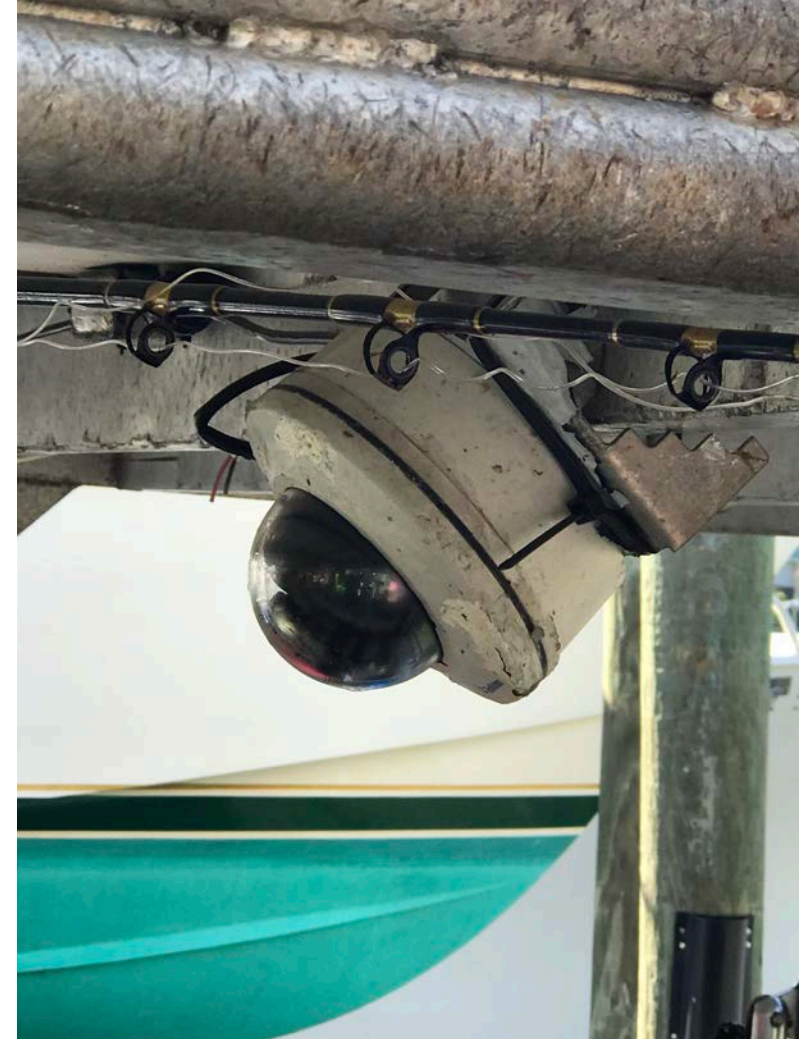
Electronic Technologies Progress in 2020

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

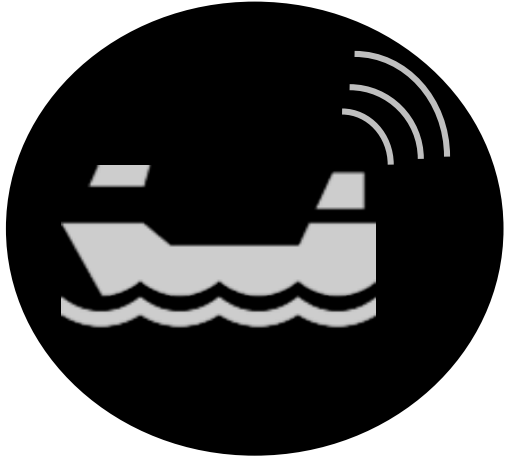
- Regional 5-year vision and priorities
- Council actions, research, development, and pilot projects
- Data integration and interoperability (e.g., One touch reporting)
- Impediments to implementation and resource needs
- Tables to track progress for EM, ER, VMS, observer technology, etc.
- EM costs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

Communication and outreach

- Engage and coordinate with all stakeholders
- Encourage cross-regional planning

Updated ET implementation plans --- June 2020

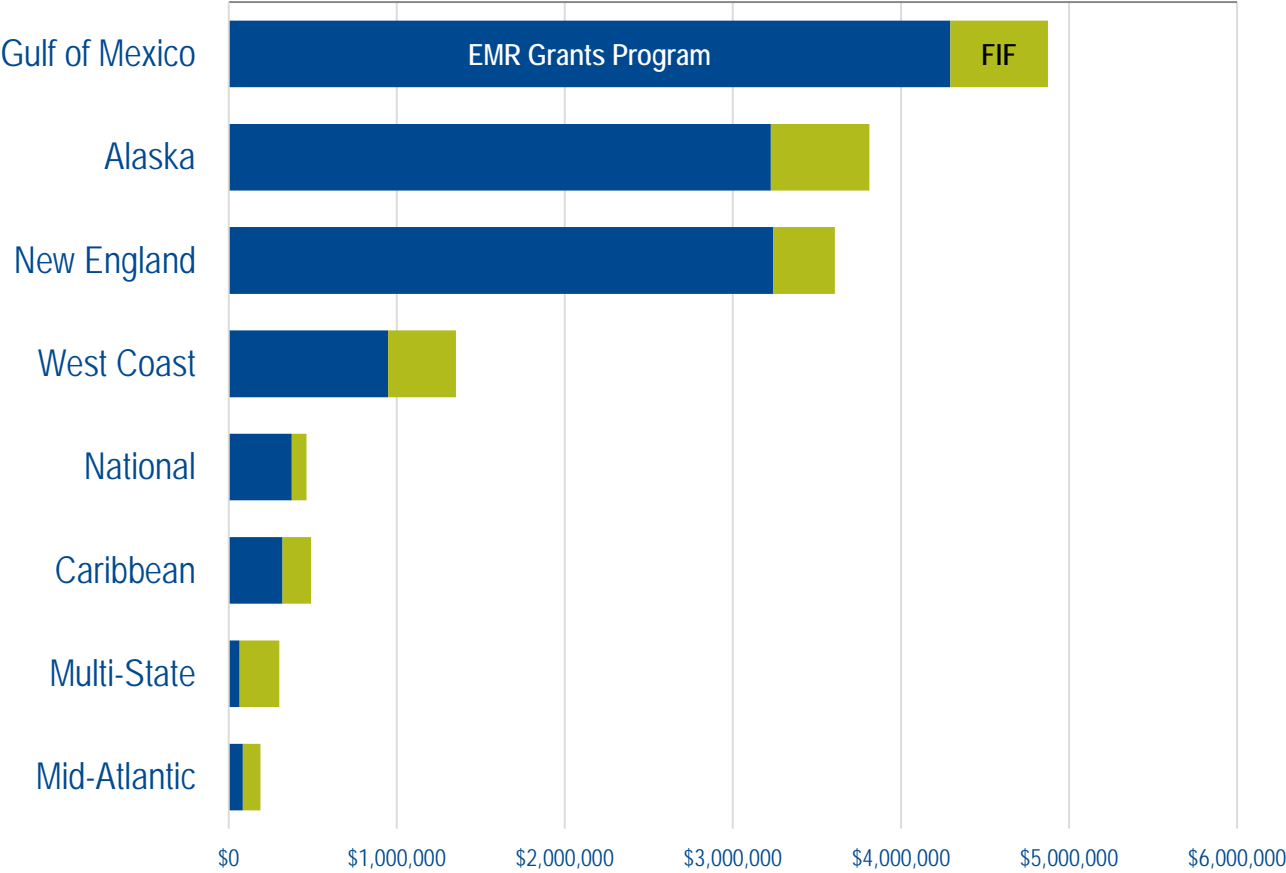
EMR GRANTS PROGRAM –PROGRAM PRIORITIES



1. **E-technology in fishery data collection** that supports fisheries conservation and management.
2. **Modernize data management systems** to reduce costs and improve the consistency, interoperability, quality and/or usability of information collected using e-technology.

EMR GRANTS PROGRAM –PROGRAM OVERVIEW

EMR Projects by Geography (2010 - 2018)



- Over \$18 million in direct funding
- Welcome proposals from all U.S. state and federal fisheries
- Past funding areas
 1. Electronic Monitoring
 2. Electronic Reporting
 3. Data Management
 4. “Other”

FIF = Fisheries Innovation Fund

EMR GRANTS PROGRAM – 2020 FUNDING OPPORTUNITY

- Anticipate releasing the Request for Proposal in Spring 2020 with proposals due in the Summer 2020
- Encourage applicants to seek out guidance from NOAA Fisheries contacts on needs and priorities in EMR or data management
- Minimum match of 1:1 non-federal contributions
- Questions? – Gray Redding (gray.redding@nfwf.org)

<https://www.nfwf.org/programs/fisheries-innovation-fund>

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