Fishery Monitoring and Research Division Update

New England Fishery Management Council Meeting
September 29, 2022

Amy Martins, Deputy Division Chief
Outline

- Introduction: Mission and Organization
- Data Review Process
- At-Sea Monitoring
- Standardized Bycatch Reporting Methodology
- Summary of Coverage Accomplishments
- Cooperative Research Update
Introduction: Mission and Organization
FMRD Mission

- We collect information from commercial fisheries and support the use of that information to inform fisheries science and management
- We bring the fisherman’s perspective into the Federal process through collaboratively producing scientific information
- We strive to be a trusted presence among the fishing, scientific, and management communities
Management Team

Fishery Monitoring and Research Division Chief
Amanda McCarty
(on detail to Dept. of State)

Fishery Monitoring and Research Deputy Division Chief
Amy Martins

Fisheries Monitoring Ops Branch Chief
KB McArdle

Training and Data Quality Branch Chief
Ryan Shama
Acting Division Chief

Cooperative Research Branch Chief
Anna Mercer

Data and Info Systems Branch Chief
Josh Lee

Administrative Team
(Budget, Facilities)
Data Review Process
Process Overview

- **Collection** — Observer At-Sea Information System (OASIS) app, paper forms
- **Review**
  - Trip accounting — trips/samples received, confirmation/verification (e.g., sea days, permits)
  - Pre-edit — cursory review (specific fisheries)
  - Debriefing — data reviewed, corrected, and finalized; follow-up with observers
  - Species Verification Program — confirmation of species identification
  - Incidental Take — confirmation of species identification
  - Data entry — non-ASM paper logs entered
  - Auditing — final review, outstanding issues addressed, loading of trips for end users
  - Scanning — archiving of raw data (paper forms)
- **Number of Debriefers:** 14 currently; as low as 6 in 2021
Improving Data Processing Timelines

● Targets (pre-COVID)
  ○ Observer uploads - 48 hrs
  ○ Preliminary groundfish catch data - 7-10 days
  ○ Fully loaded audited Oracle data - 90 days (30 days for ASM)

● Data quality review process
  ○ Performed full review of process
  ○ Identified several long/short term technical/non-technical solutions
  ○ Implemented some (e.g., consolidating audits); working on others (e.g. updating and consolidating legacy systems)

→ These solutions were not enough to get through the data backlog

● Solution: Optimized Review Process
Optimized Review Process (Feb 2022)

Purpose

- Redistribute effort to where it’s most needed
  - Focus limited resources on trips that need most attention
  - Clear the current data backlog
  - Put us in a good position to keep up with impacts of Amendment 23
- Flexible process that is adaptable to changes in:
  - Data landscape (Amendment 23, EM)
  - Unexpected challenges (e.g., debriefer attrition)
- Ensure reasonable workloads for data quality staff
Optimized Review Process

Tiered process

- All trips receive some level of review
- Tier 1 trips – still go through:
  - Automated audits (~1700 automated checks)
  - Incidental take
  - Age structures
  - Observer comments
- Tier 2 trips – status quo (deeper level of review by debriefers)
Optimized Review Process

Selection criteria for Tier 2 trips

- Most attention to:
  - Certification trips
  - Priority/probation status
  - First time on a gear type

- Some percentage of all remaining trips.

- Selection by observer to ensure that some amount of each observer’s data receives Tier 2 review

Also increased attention to:

- <120 days since certified
- >30 days since observer’s last trip on a certain gear type

Selection rates are flexible, with the goal to maximize Tier
Data Review Progress

- Late trips ↑ with the departure of several debriefers and following an increase of incoming trips and new observers (i.e., certification trips)
- Late trips ↓ with the implementation of Optimized Review Process in February 2022 and hiring of additional debriefers
Figures show number of days past program targets to finalize data for all trips from January 2020 through April 2022.
Additional Measures

- Consolidation and upgrading of legacy systems
- Data quality staff returning to the office, additional staff trained
- Data quality performance metrics
At-Sea Monitoring
## FY18-21 Funds Remaining for Industry

<table>
<thead>
<tr>
<th>FY Approp</th>
<th>Mechanism</th>
<th>Obligated</th>
<th>Remaining 22 Aug 2022</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2018      | Grant     | $6.3M     | $3.4M                 | Expires 6/30/2023 (1-year option to 6/30/2024)  
For industry reimbursement for human or electronic monitoring |
| 2019      | Contract  | $2.4M     | $0                    | Expired 9/30/2021 (spent all funds)  
For industry reimbursement for human or electronic monitoring |
| 2019      | Grant     | $1.7M     | $1.5M                 | Expires 2023 (1-year option to 6/30/2024)  
For industry reimbursement for electronic monitoring equipment and installation only |
| 2020      | Contract  | $2.1M     | $0                    | Expires 9/30/2022 (spent all funds)  
For industry reimbursement for human or electronic monitoring |
| 2020      | Grant     | $2M       | $1.9M                 | Expires 2023 (1-year option to 2024)  
For industry reimbursement for electronic monitoring equipment and installation only |
| 2021      | Contract  | $3.4M     | $2.7M                 | Expires 9/30/2023  
For industry reimbursement for human or electronic monitoring |
| **Total** | **17.9M** | **9.5M**  | **$6.1M**             | **$6.1M for monitoring reimbursement, $3.4M for EM equipment only** |
Amendment 23

- The final rule to implement Amendment 23 is currently in review. GARFO anticipates publication this fall with a 30-day delay in effectiveness, which means going operational this calendar year.

- To prepare for Amendment 23 implementation, FMRD has been rebuilding the ASM cadre with trainings provided through a contract with the Coonamessett Farm Foundation. We have returned to a full complement of data quality staff to prepare for the influx of data.
Coverage Update

- Target coverage was set at 99% on May 1, 2022, the start of the fishing year.

- Realized coverage mid-quarter for May 1 to August 15, 2022 is ~51% (54% through September). There is a spread in coverage across groundfish sectors (39-81% for the current quarter).
Coverage Update

● Challenges to meeting target coverage include:
  ○ The ability of approved ASM providers to recruit and retain trained ASMs.
  ○ General factors, including communication issues between providers and vessels, vessel placement on the Vessels of Concern list, Safety Deficiency Reports and refusals, and delayed implementation of a key coverage exemption as part of Amendment 23.

● Solutions:
  ○ Some sectors have contracted with more than one ASM provider, which has helped increase realized coverage levels.
  ○ New recruitment/retention strategies have been implemented by providers in order to reduce attrition.
Training Update

- Return to on-site instruction & full class sizes
  - Utilizing remote training opportunities where appropriate (e.g., EM)

- Coonamessett Farm Foundation ASM Training Program
  - Partnership with CFF to increase our training capacity
  - Currently holding 6th ASM training

- EM Reviewer Trainings Developed/Operational
Training Update

**Initial Trainings Output**

<table>
<thead>
<tr>
<th>Year</th>
<th>NEFOP</th>
<th>IFS</th>
<th>ASM</th>
<th>EM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>2018</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>2019</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>2020</td>
<td>50</td>
<td>25</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>2021</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>2022 (to date)</td>
<td>200</td>
<td>100</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>2022 (projected)</td>
<td>250</td>
<td>125</td>
<td>125</td>
<td>0</td>
</tr>
</tbody>
</table>

**Coonamessett Farm Foundation ASM Trainings 2022**

<table>
<thead>
<tr>
<th>Month</th>
<th>Graduated</th>
<th>Unused Seats</th>
<th>Not Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Mar</td>
<td>15</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Apr</td>
<td>20</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>May</td>
<td>25</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Jul</td>
<td>30</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Sep</td>
<td>35</td>
<td>17</td>
<td>18</td>
</tr>
</tbody>
</table>
Observer Certifications at Present

Total certifications: **140 (almost half are new)**

- ASM-certified: **54**
- NEFOP-certified: **35**
- IFS-certified: **29**
- EM-certified: **22**
Electronic Monitoring Update

At-sea monitoring requirements for sector vessels

“Electronic monitoring may be used in place of actual observers if the technology is deemed sufficient by NMFS for a specific trip type based on gear type and area fished, in a manner consistent with the Administrative Procedure Act.”

- **Approved Models**: Audit and Maximized Retention (MREM)
- **Participating vessels**: 39 vessels selected EM as monitoring tool
- **Service providers**: 7 vendors approved to supply EM services
- **Application**: 100% EM coverage (50% or less random sampling review rate depending on the EM model)
Electronic Monitoring Update

Funding initiatives to support EM programs have primarily focused on monitoring and equipment reimbursement.

- GARFO published an EM Cost Reimbursement policy for groundfish sectors in April 2021.
- Vessels that choose to use operational EM or an EM exempted fishing permit to meet sector monitoring requirements are eligible for reimbursement, while government funding is available.
- Any vessel interested in using EM in fishing years 2021 or 2022 is eligible to be reimbursed for any associated costs incurred in advance of joining an EM program.
Standardized Bycatch Reporting Methodology
SBRM Overview

- The SBRM Omnibus Amendment for all NEFMC and MAFMC FMPs was implemented in February 2008. A revised SBRM Omnibus Amendment was implemented in July 2015.

- The SBRM amendment requires an annual discard report utilizing information obtained from the NEFOP and IFS Programs for 14 federally managed species groups and sea turtles.

- Each year, discard estimates and variability are derived from the prior year data to inform observer coverage needs for the upcoming year.
SBRM 2022 Recap

- Because of impacts from the COVID-19 pandemic, no statistical analysis was conducted for SBRM year 2022.

- Instead, a decision was made to use the results of the 2020 SBRM statistical analysis and incorporate the 2022 budget information and the 2022 scallop compensation rate analysis for the observer sea day allocation for April 2022 through March 2023.

- Annual discard report and sea day schedule can be found at: https://www.fisheries.noaa.gov/resource/data/annual-discard-reports-northeast
SBRM Sea Days (Apr 2022 - Mar 2023)

- Total sea days needed: **7,803**
  - Sea days for agency-funded fleets (NEFOP): **6,481**
  - Sea days for industry-funded scallop fleets (IFS): **1,322**

- Total sea days available (based on funding): **5,907**
  - Agency-funded sea days: **3,844** (3,382 prioritized days + 462 non-prioritized days)
  - Industry-funded sea days: **2,063**
## NEFOP Coverage Summary 2022

<table>
<thead>
<tr>
<th>Coverage Type</th>
<th>SBRM Q1 (April 1 – June 30)</th>
<th>SBRM Mid-Q2 (July 1 – Aug 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBRM (NE)</td>
<td>289</td>
<td>324</td>
</tr>
<tr>
<td>SBRM (MA)</td>
<td>446</td>
<td>338</td>
</tr>
<tr>
<td>SBRM (PTNS NE)</td>
<td>195</td>
<td>154</td>
</tr>
<tr>
<td>SBRM (PTNS MA)</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td><strong>SBRM</strong></td>
<td>955</td>
<td>841</td>
</tr>
<tr>
<td>MMPA (NE)</td>
<td>44</td>
<td>45</td>
</tr>
<tr>
<td>MMPA (MID)</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>MMPA (PTNS)</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td><strong>MMPA</strong></td>
<td>87</td>
<td>75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1042</td>
<td>916</td>
</tr>
</tbody>
</table>
Upcoming SBRM Work

● SBRM 2023 kickoff: Sept 6, 2022

● Analyses:
  ○ 2023 Discard Estimation, Precision, and Sample Size Analysis for Fish
  ○ 2017-2021 Estimated Bycatch of Sea Turtles in Sink Gillnet Gear
  ○ 2021-2023 Three-Year Review of SBRM

● Additional deliverables:
  ○ 2023 SBRM Annual Discard Report with Observer Sea Day Allocation
  ○ 2023 Sea Day Schedule
  ○ 2023 Trip Selection Report
2018-2022 Coverage Accomplishments

Note: All fishing year 2022 accomplishments are partial, running from the beginning of the fishing year to August 15, 2022.
## SBRM 2018-2022 (Fishing year: Apr 1 – Mar 31)

### 2018

<table>
<thead>
<tr>
<th>Coverage Type</th>
<th>Tasked</th>
<th>Accomplished</th>
<th>% Accomplished</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBRM</td>
<td>6284</td>
<td>4552</td>
<td>72.4%</td>
</tr>
<tr>
<td>MMPA</td>
<td>393</td>
<td>312</td>
<td>79.4%</td>
</tr>
<tr>
<td>SBRM PTNS</td>
<td>999</td>
<td>1104</td>
<td>110.5%</td>
</tr>
<tr>
<td>MMPA PTNS</td>
<td>171</td>
<td>155</td>
<td>90.6%</td>
</tr>
<tr>
<td><strong>Total Days</strong></td>
<td><strong>7847</strong></td>
<td><strong>6123</strong></td>
<td><strong>78.0%</strong></td>
</tr>
</tbody>
</table>

### 2019

<table>
<thead>
<tr>
<th>Coverage Type</th>
<th>Tasked</th>
<th>Accomplished</th>
<th>% Accomplished</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBRM</td>
<td>5213</td>
<td>4812</td>
<td>92.3%</td>
</tr>
<tr>
<td>MMPA</td>
<td>370</td>
<td>259</td>
<td>70.0%</td>
</tr>
<tr>
<td>SBRM PTNS</td>
<td>1855</td>
<td>1546</td>
<td>83.3%</td>
</tr>
<tr>
<td>MMPA PTNS</td>
<td>176</td>
<td>172</td>
<td>97.7%</td>
</tr>
<tr>
<td><strong>Total Days</strong></td>
<td><strong>7614</strong></td>
<td><strong>6789</strong></td>
<td><strong>89.2%</strong></td>
</tr>
</tbody>
</table>

### 2020

<table>
<thead>
<tr>
<th>Coverage Type</th>
<th>Tasked</th>
<th>Accomplished</th>
<th>% Accomplished</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBRM</td>
<td>3784</td>
<td>650</td>
<td>17.2%</td>
</tr>
<tr>
<td>MMPA</td>
<td>294</td>
<td>11</td>
<td>3.7%</td>
</tr>
<tr>
<td>SBRM PTNS</td>
<td>1024</td>
<td>504</td>
<td>49.2%</td>
</tr>
<tr>
<td>MMPA PTNS</td>
<td>91</td>
<td>29</td>
<td>31.9%</td>
</tr>
<tr>
<td><strong>Total Days</strong></td>
<td><strong>5193</strong></td>
<td><strong>1194</strong></td>
<td><strong>23.0%</strong></td>
</tr>
</tbody>
</table>

### 2021

<table>
<thead>
<tr>
<th>Coverage Type</th>
<th>Tasked</th>
<th>Accomplished</th>
<th>% Accomplished</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBRM</td>
<td>2467</td>
<td>1904</td>
<td>77.2%</td>
</tr>
<tr>
<td>MMPA</td>
<td>140</td>
<td>78</td>
<td>55.7%</td>
</tr>
<tr>
<td>SBRM PTNS</td>
<td>781</td>
<td>755</td>
<td>96.7%</td>
</tr>
<tr>
<td>MMPA PTNS</td>
<td>35</td>
<td>45</td>
<td>128.6%</td>
</tr>
<tr>
<td><strong>Total Days</strong></td>
<td><strong>3423</strong></td>
<td><strong>2782</strong></td>
<td><strong>81.3%</strong></td>
</tr>
</tbody>
</table>
SBRM 2018-2022 (Fishing year: Apr 1 – Mar 31)

Tasked Sea Days by Category

Percent Accomplished by Category

- NE - SBRM
- NE - SBRM PTNS
- NE - MMPA
- MA - SBRM
- MA - SBRM PTNS
- MA - MMPA
- MMPA PTNS
- Total
ASM 2018-2022 (Fishing year: May 1 – Apr 30)

<table>
<thead>
<tr>
<th>Fishing Year</th>
<th>Target Coverage Rate</th>
<th>Realized Coverage Rate (NEFOP + ASM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>15%</td>
<td>14.5%</td>
</tr>
<tr>
<td>2019</td>
<td>31%</td>
<td>23.1%</td>
</tr>
<tr>
<td>2020</td>
<td>40%</td>
<td>11.6%</td>
</tr>
<tr>
<td>2021</td>
<td>40%</td>
<td>32.0%</td>
</tr>
<tr>
<td>2022</td>
<td>100%</td>
<td>51.4%*</td>
</tr>
</tbody>
</table>

*The current fishing year FY22 uses data from PTNS to estimate coverage. Fishing years 2018-2021 data come from GARFO’s SIMM.*
ASM 2018-2022 (Fishing year: May 1 – Apr 30)

Note: ASM average realized coverage rates are calculated as total observed trips over total eligible trips.
**IFS 2018-2022** *(Fishing year: Apr 1 – Mar 31)*

### Limited Access

<table>
<thead>
<tr>
<th>Fishing Year</th>
<th>VMS Trips</th>
<th>Observed Trips</th>
<th>Realized Coverage</th>
<th>Percent of Target Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>3403</td>
<td>372</td>
<td>7.8%</td>
<td>68.7%</td>
</tr>
<tr>
<td>2019</td>
<td>3908</td>
<td>316</td>
<td>9.2%</td>
<td>78.8%</td>
</tr>
<tr>
<td>2020</td>
<td>3445</td>
<td>104</td>
<td>3.6%</td>
<td>48.9%</td>
</tr>
<tr>
<td>2021</td>
<td>3187</td>
<td>189</td>
<td>5.4%</td>
<td>69.0%</td>
</tr>
<tr>
<td>2022</td>
<td>1316</td>
<td>86</td>
<td>5.1%</td>
<td>51.2%</td>
</tr>
</tbody>
</table>

### General Category

<table>
<thead>
<tr>
<th>Fishing Year</th>
<th>VMS Trips</th>
<th>Observed Trips</th>
<th>Realized Coverage</th>
<th>Percent of Target Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>5304</td>
<td>202</td>
<td>2.7%</td>
<td>48.8%</td>
</tr>
<tr>
<td>2019</td>
<td>5168</td>
<td>223</td>
<td>5.6%</td>
<td>108.9%</td>
</tr>
<tr>
<td>2020</td>
<td>4960</td>
<td>45</td>
<td>0.6%</td>
<td>11.7%</td>
</tr>
<tr>
<td>2021</td>
<td>4249</td>
<td>139</td>
<td>2.2%</td>
<td>54.7%</td>
</tr>
<tr>
<td>2022</td>
<td>4699</td>
<td>129</td>
<td>3.8%</td>
<td>65.0%</td>
</tr>
</tbody>
</table>

*Note: IFS realized coverage rates and percent of target achieved are calculated as averages of each area’s realized coverage and percent of target achieved.*
IFS 2018-2022 (Fishing year: Apr 1 – Mar 31)

**Limited Access**

**General Category**

- VMS Trips
- Observed Trips
- Realized Coverage
- Percent of Target Achieved
Industry Funded Monitoring 2021-2022

<table>
<thead>
<tr>
<th>Fishing Year</th>
<th>Total Vessels</th>
<th>Active Vessels</th>
<th>Total Trips</th>
<th>Eligible Trips</th>
<th>Observed Trips</th>
<th>Average Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>43</td>
<td>13</td>
<td>89</td>
<td>25</td>
<td>6</td>
<td>14%</td>
</tr>
<tr>
<td>2022</td>
<td>40</td>
<td>5</td>
<td>23</td>
<td>9</td>
<td>7</td>
<td>48%</td>
</tr>
</tbody>
</table>

*Note: IFM average realized coverage rates are calculated as an average of realized coverage for each vessel.*
Cooperative Research Update
Cooperative Research Overview

Cooperative research is the partnership between the fishing industry and the science community. We work together to improve our understanding of ocean ecosystems and support sustainable fisheries management.
Cooperative Research

How We Collaborate with Industry

- Conduct industry-based surveys
- Advance fishing gear
- Monitor ocean conditions
- Sample fish & shellfish
- Tag fish
- Learn from fishermen

How We All Benefit

- Robust ecosystem monitoring
- Sustainable fishing practices
- Healthy fish stocks
- Accurate ocean forecasts
- Effective technology for ocean conservation

Introduction | Data Review | At-Sea Monitoring | SBRM | Accomplishments
Active Programs

- Gulf of Maine Bottom Longline Survey
- Study Fleet
- Environmental Monitors on Lobster Traps (eMOLT)
- Industry-Based Biological Sampling Program
- Collaborative Shortfin Squid Research
- Special Projects:
  - National Trawl Advisory Panel (NTAP) Restrictor Rope Research
  - Shortfin Squid Electronic Size Monitoring
  - Evaluating Impacts from Offshore Wind Energy on Fishing Operations
  - Testing RFID Systems for Haul Tracking in Electronic Data Collection
NE Cooperative Research across the U.S.

- **National Cooperative Research Program Meeting (invitational)**
  - September 13-15, 2022
  - Narragansett Lab, RI

- **Mid-Atlantic Cooperative Research Summit (public)**
  - January 31, 2023
  - The Mariner’s Museum and Park, VA
  - [https://www.fisheries.noaa.gov/event/mid-atlantic-cooperative-research-summit](https://www.fisheries.noaa.gov/event/mid-atlantic-cooperative-research-summit)

- **New England Cooperative Research Summit (public)**
  - February 15, 2023
  - RI School of Design, RI
  - [https://www.fisheries.noaa.gov/event/new-england-cooperative-research-summit](https://www.fisheries.noaa.gov/event/new-england-cooperative-research-summit)
Questions?

Observer Program:
Katherine.McArdle@noaa.gov

Cooperative Research:
Anna.Mercer@noaa.gov
Supplementary Slides
Data Review Progress

- Late trips ↑ with the departure of several debriefers following an increase of incoming trips and new observers (i.e., cert trips)
- Late trips ↓ with the implementation of Optimized Review Process in Feb 2022 and hiring of additional debriefers
Figures show number of days past program targets to complete finalization of each month’s trip data from January 2018 through April 2022.