1.4. Definition of Sector as Three Entities

“The NE multispecies Fishery Management Plan (FMP) defined a sector as a group of three or more persons, none of whom have an ownership interest in the other two persons in the sector. This criterion has been fulfilled with permit number 250547 under the distinct ownership of Robert Michael Inc.; permit number 152709 under the distinct ownership of Isaac C. Molt; and permit number 250716 under the distinct ownership of Dana Hammond.”

This amendment adds the following in this operations plan under “Service Providers” contained in “2.2.2. Electronic Monitoring Program”:

Services Providers

“New England Marine Monitoring
350 Commercial St.
Portland, ME 04101
Primary Contact: Mark Hagar, mark@nemarinemonitoring.com”

This amendment strikes all language in this operations plan at Section 2.2.6. “Discards” contained in “2.2. Monitoring” and replaces it with the following:

2.2.6. Discards

“The Sector manager (or his/her designated representative) will derive stock specific discards for each trip. The methodology for calculating discards will vary by monitoring type.

For vessels enrolled in an ASM program:

If the trip is observed by either an at-sea monitor or a Northeast Fisheries Observer Program (NEFOP) observer, discards will be derived based on data collected during that trip and will account for all hauls (observed and unobserved) on that trip. For unobserved trips taken by vessels enrolled in an ASM program, discards will be derived using the NOAA Fisheries-provided discard rate resulting from the NOAA Fisheries method to estimate ‘in-season’ discard rates, which may not include data from research trips or sector trips using certain exemptions.

For vessels enrolled in a maximized retention EM program:

If the trip is observed by a Northeast Fisheries Observer Program (NEFOP) observer, discards will be derived based on data collected during that trip and will account for all hauls (observed and unobserved) on that trip. For trips taken
by vessels enrolled in a maximized retention EM program without a NEFOP observer onboard, discards will be derived using the NOAA Fisheries-provided discard rate resulting from the NOAA Fisheries method to estimate 'in-season' discard rates, which may not include data from research trips or sector trips using certain exemptions. In-season discard rates for allocated groundfish stocks will be set to zero at the start of the fishing year, consistent with maximized retention EM requirements. In-season discard rates for unallocated groundfish stocks will be based on NEFOP data for the fishery.

For vessels enrolled in an audit model EM program:
If the trip is observed by a Northeast Fisheries Observer Program (NEFOP) observer, discards will be derived based on data collected during that trip and will account for all hauls (observed and unobserved) on that trip. If the trip is observed using electronic monitoring, discards will be derived based on data collected during that trip to account for observed hauls only. For unobserved trips or hauls taken by vessels in an audit model EM program, discards will be derived using the vessel’s self-reported discards as adjusted based on the vessel’s historical reporting accuracy.”

This amendment adds an additional paragraph to this operations plan contained in “2.5. Confidential Data Statement” containing the following language:

“The undersigned also hereby authorizes the release of information to the sector’s electronic monitoring provider(s) that may be considered to be confidential or privileged by the Magnuson-Stevens Act or other federal law associated with the limited access Northeast multispecies permit with the Moratorium Right Identifiers (MRIs) enrolled in the sector’s electronic monitoring program. Specifically, NOAA Fisheries is authorized to release vessel trip report data associated with the vessel, such as vessel name; vessel permit number; sail date/time; land date/time; Trip ID number; number of hauls; number of sub-trips; and other trip-related data for the purpose of facilitating trip tracking and management as required by contract and regulation.”

This amendment strikes all language in this operations plan at Section 2.6.1 “15. Redfish Exemption” contained in “2.6. Exemption Requests”.

This amendment strikes all language in this operations plan at Section 4.1. “Consolidation and Redistribution of ACE” contained in “4. CONSOLIDATION OF ACE AND REDIRECTION OF EFFORT” and replaces it with the following:

“In FY 2020, 33% of the permits enrolled in the Sustainable Harvest Sector I for FYs 2021 and 2022 are attached to vessels actively fishing for NE multispecies. For FYs 2021 and 2022, the Sustainable Harvest Sector I has 30 permits currently enrolled. Of those, 11 permits are anticipated to actively fish for NE multispecies in FYs 2021 and 2022. While these numbers may change, the Sustainable Harvest Sector I expects that, compared to FY 2020, there would be no change from the consolidation that previously occurred among the members during FY 2020. The member permits that are not attached to active NE multispecies vessels in FYs 2021 and 2022 are the same permits that did not fish in FY 2020. In most cases, a member who owns multiple permits fished the ACE (or DAS if in the common pool) of all those permits on fewer hulls and will now continue to fish the ACE contributed by all those permits on fewer hulls, resulting in little additional consolidation.”
This amendment strikes the following in this operations plan at Section 6. “APPENDIX 1: SHS1 BOARD OF DIRECTORS”:

Marshall Alexander

And, adds the following under the section “APPENDIX 1: SHS1 BOARD OF DIRECTORS”:

“(vacancy)”

Finally, this amendment amends “Appendix 4: EM Programs” to replace the existing language in “The Northeast Fisheries Electronic Monitoring Program” section with the following language:

Appendix 4: EM Programs

“EM Program Standards

EM Program Duration

- A vessel must opt into an EM program for an entire fishing year, with the following exceptions:
  - A sector may allow a vessel a single opportunity to opt in/out of EM at any time during a fishing year. A sector must have both an approved ASM and EM plan included in its operations plan to offer its member vessels this flexibility if the vessel intends to continue fishing during the remainder of the fishing year. A vessel that opts in/out of EM mid-year should expect a transition period to accommodate changes to PTNS and other data systems, during which time it may continue fishing under its current monitoring program.
  - VMPs are approved by gear type. A vessel enrolled in an EM program is expected to acquire an approved VMP for all groundfish gear types used by the vessel. A vessel owner or operator that chooses to switch gear types (e.g., gillnet to trawl) mid-year must work with their service provider to reconfigure the EM system if necessary, and develop and submit a revised VMP for approval. Depending on the extent of the changes and assuming the vessel’s sector also has an ASM contract, the vessel may be temporarily categorized as an ASM vessel until the VMP authorizing the use of the new gear type is approved. Trips taken by the vessel during this time would be assigned an ASM. If the vessel’s sector does not hold an ASM contract, the vessel would not be authorized to fish until the revised VMP is approved.

EM Requirements

- The EM system must be operational on every sector EM trip taken by a vessel. A vessel may not fish a sector EM trip without an operational EM system onboard, unless:
  - Issued a waiver by NMFS: In the event that a vessel’s EM system is not operational as required, the vessel operator should troubleshoot the issue as described in the vessel’s VMP. If the vessel operator and/or EM service provider staff are unable to resolve the issue, they must notify NMFS and request a waiver through PTNS. Waivers will be granted at NEFSC’s discretion.
  - Assigned an ASM: A vessel enrolled in an EM program that intends to fish with a gear type that it does not have an approved VMP for will be assigned an ASM. If the vessel’s
sector does not hold an ASM contract, the vessel would not be authorized to fish until the revised VMP is approved.

- The EM system must be operational for the entire duration of the trip.
- Vessels must conduct a system check prior to departing on a sector trip. Instructions for completing a system check, and guidance for troubleshooting issues, should be included in the vessel’s VMP.
- No person may tamper with, disconnect, or destroy any part of the EM system, associated equipment, or data recorded by the EM system.

**Vessel Operator Requirements**

- A vessel using EM may still be selected for NEFOP or NEFOP Limited coverage and must carry a NEFOP or NEFOP Limited observer if selected. The NEFOP program is necessary to collect biological data and satisfy Standardized Bycatch Reporting Methodology, Marine Mammal Protection Act, and Endangered Species Act requirements. The EM system must be operational and the vessel operator and crew must comply with catch handling protocols when carrying a NEFOP or NEFOP Limited observer.
- The EM system, associated equipment, vessel trips reports, VMP, and other records must be available for inspection upon request by NOAA Fisheries staff.
- A vessel operator must ensure the EM system is fully operational during a sector trip, including:
  - Maintaining power to the EM system at all times for the duration of the trip.
  - Ensuring the EM system has adequate memory and/or spare hard drives to record the entire fishing trip.
  - Ensuring the system is functioning; camera views are unobstructed and clear in quality; and catch and discards may be viewed, identified, and quantified as necessary.
- A vessel operator and crew must comply with the NMFS-approved VMP at all times.
- A vessel owner or operator must submit all EM data for all EM sector trips to the EM provider in accordance with program requirements (e.g., method and timing):
  - Each trip’s EM data must be submitted to the EM service provider within 7 calendar days following completion of the trip.

**Vessel Monitoring Plan Requirements**

- A vessel electing to use EM as part of the sector’s EM program may work with the sector’s approved provider to develop a vessel- and gear-specific VMP for NMFS approval. If a vessel intends to fish with EM on May 1, the VMP must be submitted to NMFS for approval a minimum of 30 calendar days in advance of the fishing year. Otherwise, the VMP must be submitted to NMFS for approval a minimum of 10 business days prior to a vessel’s intended start date.
- A vessel must have a NMFS-approved VMP to use EM for a given gear type on a sector trip. At a minimum, the VMP must incorporate these EM Program Standards by reference, and the following sections (below). Further details on the required information can be found in the VMP guidance template in the Resources Available to Sectors section:
  - General vessel information, including gear type;
  - List of contacts;
  - EM system components and specifications;
  - Vessel reporting requirements;
  - Vessel operator responsibilities;
    - System operations and maintenance;
- Catch handling requirements; and
- Dockside monitoring requirements (if applicable);
  - EM system malfunction protocols; and
  - Troubleshooting guide.

- A copy of the approved VMP must be on board the vessel and accessible at all times.
- The captain and crew of a vessel must abide by catch handling protocols, and all other requirements of the VMP, at all times on a sector trip. The captain and crew of a vessel must sort catch and process any discards within the view of the cameras in a manner consistent with the VMP.
- Substantial modifications to the VMP must be approved by NOAA Fisheries prior to fishing. A vessel that intends to modify its fishing practices mid-year and requires VMP modifications must allow for a transition period to accommodate VMP review and approval by NOAA Fisheries.

Dockside Monitoring Requirements (Applicable to maximized retention EM vessels only)

- The vessel operator must notify the DSM program of its intention to sail prior to beginning a sector EM trip. The notification schedule (e.g., upon sailing or in advance) and method (i.e., text, VMS) will depend on the nature of the vessel’s activity (e.g., day boat vs trip boat vessels) and will be described in the vessel’s VMP.
- The vessel operator or dealer must provide an offload time to the DSM program in advance of landing. The advance notice of landing and offload schedule will be dependent on the nature of the vessel’s activity (e.g., day boat vs trip boat vessels) and will be defined in the vessel’s VMP. The standard advance notice is as follows:
  - 4 hours for day boat vessels.
  - 48 hours for trip boat vessels.
  - For trip boat vessels, the vessel operator or dealer will provide the DSM program with a hail weight for the total catch of allocated groundfish 24 hours prior to offload.
- The vessel operator, crew, and dealer must offload all allocated groundfish in the presence of the DSM. The vessel operator and crew may not begin offloading unless a DSM is present or they have received a waiver from the DSM program.
  - In the event that a DSM is not available to observe an offload, the vessel operator may request a waiver by contacting the DSM coordinator. Waivers may be granted at the NEFSC’s discretion.
- All fish below the minimum size must be offloaded before other fish that meet the minimum size and must be provided to the dockside monitor at the sampling station.
- The vessel operator and crew must retain all allocated groundfish categorized as LUMF and sort it separately from any sublegal catch to facilitate data collection by a dockside monitor.
- The vessel operator and crew or dealer personnel must separate sublegal allocated groundfish catch by species. The vessel operator and crew may NOT combine sublegal and terminal legal-sized market category catch for any species.
- The vessel operator must allow the DSM access to the fish hold immediately following the offload in order to confirm all allocated groundfish were offloaded. A vessel representative must observe/accompany the DSM during the hold inspection. The vessel representative must provide support for the DSM to safely embark and disembark the vessel (e.g., ladders/steps/assistance etc.).
• The primary dealer is required to retain all sublegal allocated groundfish catch in order to be weighed and sampled by the DSM.
• Dealers are required to clearly mark all containers containing sublegal catch to facilitate tracking, and are required to provide settlement documents to the DSM program for any allocated groundfish forwarded to secondary dealers.
• Dealers must report landings of all fish, including those below the minimum size.
• Dealers are required to provide DSMs with access to facilities equivalent to what is provided to the dealer’s staff, including: A safe sampling station, with shelter from weather, for DSMs to conduct their duties and process catch; access to bathrooms; and access to facilities for washing equipment with fresh water.
• Dealers must provide settlement documents to the DSM program for any allocated groundfish forwarded to secondary dealers.

EM Program Roles and Responsibilities
Below is a description of the rules and requirements applicable to a sector EM program.

Sector Responsibilities
• A sector that wishes to use EM to meet monitoring requirements for any of its member vessels must contract with a NMFS-approved EM service provider.
• For fishing year 2022, NMFS will administer a DSM program to support maximized retention EM vessels. In future years, a sector that wishes to use maximized retention EM to meet monitoring requirements will be required to contract with a NMFS-approved DSM service provider.
• If a sector opts to include both an ASM program and an EM program(s) in its sector operations plan, then it must submit a list detailing which member vessels will be enrolled in each program in advance of the fishing year.
  o In the event that a member vessel wishes to switch programs mid-year, the sector must notify NMFS of the change in writing.

Vessel Owner/Operator Responsibilities
• A vessel must have an operational EM system in order to fish in an EM program. In order to facilitate this, a vessel owner/operator may need to provide an EM service provider with vessel access to provide the following services:
  o Support development of the VMP;
  o Install the EM system and associated equipment;
  o Train the vessel owner/operator on EM system use; and
  o Provide technical support and field services as needed.
• A vessel must complete one burn-in trip after equipment installation, and before enrollment in the sector’s EM program, that demonstrates the vessel’s EM system is fully operational (i.e., the system is working properly, camera views are adequate, and the captain and crew are familiar with and capable of complying with the catch handling requirements). A vessel may need to complete additional burn-in trips to sufficiently demonstrate the EM system is fully operational. Additional information on burn-in trips is available in the VMP Development and Guidance document.
Burn-in trips may also be required for annual renewals or for certain VMP system modifications.

- A vessel must adhere to EM program requirements and follow catch handling protocols as described in the VMP at all times on EM sector trips. Noncompliance with EM program requirements (e.g., catch handling inconsistent with the VMP) may affect a vessel’s eligibility to participate in the EM program.

Additional Monitoring and Reporting Requirements

- A vessel enrolled in an EM program must notify its intent to sail in the PTNS at least 48 hours prior to departure, consistent with existing requirements.
- A vessel enrolled in an EM program must carry a NEFOP or NEFOP Limited observer when selected for coverage, consistent with existing requirements.
- A vessel enrolled in an EM program must submit VTRs electronically (eVTR). The eVTRs must include an estimated total weight of each discarded groundfish species, consistent with existing requirements.

At-Sea Requirements

- The vessel operator and crew onboard a vessel enrolled in an EM program must maintain cameras’ operability and functioning throughout the trip to ensure visibility (e.g., power, cleanliness).
- The vessel operator and crew onboard a vessel enrolled in an EM program must follow catch handling requirements as described in the VMP, including but not limited to discarding all species at designated discard control points on the vessel. Additionally:
  - Vessels participating in the audit model EM must process all groundfish discards using methods approved and outlined in the VMP (e.g., place groundfish discards on a measuring strip in view of cameras prior to discarding).
  - Vessels participating in maximized retention EM must retain all allocated groundfish categorized as LUMF and sort it separately from sublegal catch to facilitate data collection by a dockside monitor.
- The owner or operator of a vessel enrolled in the EM program must submit:
  - The eVTR for the trip to GARFO in a manner consistent with existing VTR requirements; and
  - All EM data for the trip to the EM service provider within 7 calendar days following completion of the trip.

EM Service Provider Responsibilities

- An EM Service Provider contracted by a sector is responsible for developing a VMP(s) for that sector’s member vessel(s) enrolled in the EM program, in collaboration with the owner(s)/operator(s). VMPs should be submitted to NMFS for approval using VMAN.
- An EM service provider is responsible for providing field and technical support services. This includes managing EM systems, installation, maintenance, hard drive retrieval (if applicable), and technical support. Field and technical support services should be available 24 hours a day/7 days a week.
- An EM service provider must submit an application to NMFS to be approved as an EM service provider. NMFS will solicit applications annually. Further details on the application process can be found at § 648.87(b)(4).
An EM service provider must provide evidence of adequate insurance (copies of which shall be provided to the vessel owner, operator, or vessel manager, when requested) to cover injury, liability, and accidental death to cover EM provider staff who provide services to vessels; vessel owner; and service provider. Based on prior insurance coverage levels it has approved, NMFS has determined such insurance to be adequate if it meets at least the following provisions and conditions:

- Sufficient commercial general liability insurance and workers compensation insurance to cover the EM provider staff who provide services to vessels, vessel owners, and the EM provider; and
- A current insurance certificate.

Video reviewer training is conducted by NMFS personnel. Interest in (or requests for) training must include a justification of need and a firm commitment to a number of seats. The minimum size for a training class is 8 and the maximum class size is 16 (total candidates). NMFS may waive the class size depending on program needs. Training will include reviewers employed by multiple vendors. Refresher training is conducted when data logs or protocols change. Video reviewer training is infrequent; however attendance is mandatory.

An EM service provider must provide the following information pertaining to EM video reviewer candidates to NOAA Fisheries 30 working days before the beginning of the training:

- A list of the individuals attending;
- A copy of each person’s resume;
- Reference checks (name of individual providing the reference, association with the video reviewer, contact information (phone number, email), and information about the EM reviewer’s past performance);
- Security checks must be initiated (NOAA Fisheries will provide Form 65-7 Request for Security Assurance);
- A copy of each candidate’s transcripts; and
- Supporting documentation to verify candidates.

An EM service provider must provide a notification of new video review hires to NOAA Fisheries two weeks prior to the contractor/employee(s) projected start date for US Citizens. The notification requirement for all Foreign Nationals is a minimum of 30 days. The following information must be provided for each contractor/employee: Full name, phone number, and electronic mail address. NOAA Fisheries understands that a new hire list may change frequently before the start of training; however, a final list of candidates must be provided to NOAA Fisheries one week prior to the start of training. NMFS retains the right to reject any EM video reviewer proposed by the EM service provider if his or her qualifications or do not meet the standards or their work has been performed at an unsatisfactory level on previous projects, or if their behavior on other projects has been disruptive.

EM video reviewer candidates must meet standards required by NOAA Fisheries consistent with EM regulations:

- A high school diploma or legal equivalent.
- All video review candidates employed by an EM service provider must undergo a training session with NMFS and be tested prior to certification (see § 648.87(b)(4)(iv)). Video review candidates must meet all training standards and maintain these standards as certified video reviewers. Candidates must demonstrate their ability to collect accurate data, including the aptitude to accurately identify fish species by successfully completing and maintaining the Species Identification Verification Program.
requirements as specified by NMFS. Video reviewers may be required to attend refresher training sessions, at the discretion of NMFS, to maintain certification(s).

- All video review staff employed by an EM service provider must follow NEFSC-established video review protocols. A link to complete documentation of the video review protocols can be found in the Resources Available to Sectors section.
- EM provider staff must not have been decertified as an at-sea monitor, or an observer, due to problems with data quality or standards of conduct, in any NOAA Fisheries observer program. An EM provider staff’s references of previous employment as NOAA Fisheries approved at-sea monitors or observers shall be verified by the EM provider to satisfy this requirement.
- Absence of fisheries-related convictions, based upon a thorough background check;
- Independence from fishing-related parties including, but not limited to, vessels, dealers, shipping companies, sectors, sector managers, advocacy groups, or research institutions to prevent conflicts of interest. This means EM provider staff may not have direct financial interest, other than the provision of monitoring services, in the fishery, including, but not limited to:
  - Any ownership, mortgage holder, or other secured interest in a vessel or processor involved in the catching, taking, harvesting or processing of fish;
  - Any business selling supplies or services to any vessel or processor in the fishery; and
  - Any business purchasing raw or processed products from any vessel or processor in the fishery.

- To ensure data quality and completion of the EM reviewer training and certification process, following completion of training, an EM video reviewer’s first three reviews and the resulting data shall be immediately reviewed, edited and approved after each trip by NOAA Fisheries prior to any further trip reviews by that EM reviewer. During the EM reviewer’s first three deployments their data must be received, edited, and the EM reviewer must be “cleared” by NMFS to review on their next trip. This notification will be sent via e-mail to the EM provider. The EM reviewer may not review additional trips until the e-mail notification has been sent by NMFS. If the data quality is considered acceptable, the EM reviewer would become certified. NMFS may require additional training trips (beyond three) if the data quality is not considered acceptable enough for certification. If the data quality is not considered acceptable at any point during the initial reviewers the EM reviewer would not be certified by NMFS.

- An EM video reviewer’s ability to work will be based on his or her certification, which involves continual data quality assessments and recertification. If an EM reviewer does not adhere to NMFS protocols or meet standards they may be placed on pre-probation, probation or decertified, as described in the NMFS policy statement regarding certification (Section J, Attachment 26, ASM At-Sea Monitor Performance Monitoring, Review, Probation and Decertification).

- An EM service provider must use NOAA Fisheries data systems in the management of EM data, including but not limited to:
  - An EM service provider must submit all required data elements for a trip (i.e., groundfish discards and other information) as described in the Video Reviewer Guidance document via an EM Detail File.
  - An EM service provider must submit EM Detail Files to NOAA Fishery Monitoring via the NEMIS API. Data must be formatted according to the API specifications. The API documentation describes the data file format, the data structure, and all annotation
codes required for data submission to the API. The API documentation is provided in a commonly used standardized format;

- An EM service provider must use the NOAA Fishery Monitoring Web Portal to manage EM data, including but not limited to tracking: Trips, video review status, video review staff certifications, and more;
- An EM service provider must use NOAA’s VMP software, VMAN, for VMP submittals, approvals, and updates; and
- An EM service provider must sign a non-disclosure agreement to access government databases and systems.

- An EM service provider must ensure all EM data is collected and transmitted in a manner that ensures data integrity and protects confidential business information.
  - An EM service provider must securely store EM data for a period of time as specified by NMFS’ policy directive. An EM service provider must retain and store the raw EM data, reports, and other vessel EM trip records for a period of 12 months after catch data is finalized for the fishing year. NMFS will notify providers of the catch data finalization date for each year, typically occurring in July of the following year. EM data must be stored securely, whether on hard drives, local servers, or via cloud storage services. EM data must be released to NMFS personnel and authorized officers, or as otherwise authorized by the owner of the vessel.

- An EM service provider must provide NMFS, and its authorized officers and designees, access to all EM data immediately upon request.

- An EM service provider must provide NMFS with all software necessary for accessing, viewing, and interpreting the data generated by the EM system, including submitting the agency’s secondary review data to the API and maintenance releases to correct errors in the software or enhance software functionality.
  - An EM service provider’s software must support a “dual user” system that allows NMFS to complete and submit secondary reviews to the API.
  - An EM service provider’s software must allow for the export or download of EM data in order for the agency to make a copy if necessary.
  - An EM service provider must provide a software training for NOAA Fisheries staff.

- An EM service provider must provide the following to NMFS upon request:
  - Assistance in EM system operations, diagnosing/resolving technical issues, and recovering lost or corrupted data;
  - Responses to inquiries related to data summaries, analyses, reports, and operational issues;
  - Access to video reviewers for debriefing sessions;
  - Technical and expert information, if EM data are admitted as evidence in a court of law. All technical aspects of a NOAA Fisheries-approved EM system may be analyzed in court for, inter alia, testing procedures, error rates, peer review, technical processes, and general industry acceptance. To substantiate the EM system data and address issues raised in litigation, an EM service provider must provide information, including but not limited to:
    - If the technologies have previously been subject to such scrutiny in a court of law, a brief summary of the litigation and any court findings on the reliability of the technology.
- A copy of any contract between the EM service provider and sectors requiring EM services;
  - EM data and other records specified in the regulations.

- An EM service provider must provide feedback to vessels following a trip on the vessel operator and crew’s catch handling and camera maintenance. The EM service provider must also provide a copy to NMFS upon request.

- An EM service provider must notify NMFS via an incident report submitted in the NOAA Fishery Monitoring Web Portal within 24 hours after the EM service provider becomes aware of any of the following:
  - Any information, allegations, or reports regarding possible harassment of EM program staff (e.g., video reviewers, technicians, dockside monitors);
  - Any information, allegations, or reports regarding possible EM system tampering;
  - Any information, allegations, or reports regarding EM service provider staff conflicts of interest; and
  - Any other information pertaining to noncompliance with program requirements, as specified by NMFS.

- Performance issues may affect a provider’s eligibility for approval as an EM service provider and/or individual EM video reviewer certifications.

**NMFS Responsibilities**

NMFS is responsible for the following:

- VMP review and approval.
- Review and approval of EM service provider applications.
- Data and formatting standards of EM programs.
- EM data collection training for service provider staff.
- Selecting trips for the service provider to review.
- Data quality, assurance, and integrity of EM data. This includes data validation and audits, conducting a secondary review on a subset of trips to monitor the EM service provider’s performance, and providing feedback to the EM service provider.
- Providing feedback on vessel reporting via the sector manager regarding reviewed trips. Feedback forms will be distributed on a weekly basis via Kiteworks.
- Video and data storage when it takes possession of a copy of EM data as an agency record.
- For the audit model program, NMFS is also responsible for:
  - Conducting the audit, whereby the eVTR submitted by the vessel operator is compared to the EM Detail File submitted by the EM service provider.
- For the maximized retention program, NMFS is also responsible for:
  - Administering an agency-run DSM program in support of a maximized retention EM program (Fishing year 2022 only).
NOAA Fisheries Audit Model EM Program

Program Goal

The goal of the audit model EM program is to use cameras to validate the groundfish discards reported on a vessel’s eVTR for use in catch accounting.

Description of the Audit-Model Process

Under this model, the vessel operator and crew adhere to catch handling protocols for all sector EM trips (based on whether the vessel has an approved VMP for a given gear type). The vessel operator and crew hold groundfish discards on a measuring board and under a camera prior to discarding, and discard other species in view of cameras at designated discard control points. The vessel operator estimates the total weight of groundfish discards on an eVTR, and submits the video footage to the EM service provider. The EM service provider reviews trips selected for audit and develops an independent estimate of groundfish discards for the trip. The EM data is compared to the eVTR for the purposes of catch accounting.

- During each sector EM trip taken by a vessel, the EM system records all fishing activity onboard the vessel. The vessel captain and crew sort, measure, and discard fish within view of the cameras and in accordance with catch handling protocols.

- The captain and crew must adhere to the following catch handling requirements:
  - Legal-size groundfish must be kept and sublegal-size groundfish must be discarded, consistent with regulations;
  - Sublegal-size and unallocated groundfish must be sorted by species and measured (e.g., on a measuring board) within view of cameras prior to being returned to the sea. A more complete description of measuring protocols is included in the VMP guidance template. VMP measuring protocols may vary by vessel.
    - Groundfish flounders must be placed on a measuring strip on both the dorsal and ventral sides to ensure proper identification. If flatfish are grouped by species and measures, only the first five fish should be measured on both sides for identification;
    - When discarding wolffish, the vessel operator or crew member may opt not to measure the fish if doing so would present a safety risk; and
    - If the vessel encounters a high volume of discards, the captain and crew may employ:
      - A subsampling methodology. If there are more than 20 discards of a given species (e.g., haddock), the vessel operator and crew may measure 20 fish at random and discard the rest one at a time so as to allow the video reviewer to count the total number of fish; or
      - A volumetric estimate methodology, if approved by NMFS. NMFS is currently working with EM vessels to develop volumetric protocols.
  - LUMF may be discarded, if authorized by the vessel’s sector LOA. LUMF should be displayed in view of the measuring camera prior to discarding. The estimated weight of LUMF (i.e., present weight, not estimated whole weight) should be reported by the vessel operator on the eVTR.
  - Non-groundfish species should be discarded at designated discard control points, consistent with the vessel’s VMP.
The vessel operator must estimate the total weight of discarded groundfish on the eVTR. The operator must create a new eVTR sub-trip each time the vessel changes statistical area, gear category, or mesh size.

NMFS selects sector trips for audit when it receives the eVTR for a trip. Trips will be randomly selected and each trip has the same probability of being selected for audit. The fishing year 2022 rate of audit will be announced in fall 2021.

The sampling unit selected for audit will be a complete trip.

A list of trips selected for audit are loaded into the NOAA Fishery Monitoring Web Portal on a weekly basis. EM service providers must access the primary selection list via the Web Portal.

The EM service provider must complete the primary video review, which includes:

- Review of all raw sensor and image data to confirm completeness of trip;
- Review of sensor data to annotate start and end times, start and end locations, and identify the number of hauls;
- Review hauls to annotate catch and generate the EM Detail File according to specifications; and
- Submit the EM Detail File to the NEMIS API.

The EM service provider should complete the primary video review and submit the EM Detail Report within 10 business days of the trip selection.

NMFS will compare the EM Detail File submitted by the EM service provider to the eVTR submitted by the vessel using the following business rules:

- Minimum requirements for use in catch accounting:
  - Sub-trip is fully observed;
  - Number of efforts match; and
  - Less than 10 percent of annotated catch is unidentified (“fish, nk”).

- If the minimum requirements are met, the groundfish discards reported on the EM Detail File and the eVTR will be compared to support NMFS’s delta model. If the minimum requirements are not met, an alternative data source (i.e., adjusted VTR, discard rate) is used to account for the trip’s groundfish discards.

NMFS will use the delta model for catch accounting. The delta model is a vessel- and species-specific estimation of the precision and accuracy of a vessel’s self-reported discards. The delta model is used to adjust the vessel’s self-reported discards to account for over- or under-reporting of discard estimates. Additional guidance on discard catch accounting for EM audit model vessels is located in the Sector Report Guide: Appendix D (Link in the Resources Available to Sectors section) and a summary is included below:

- For trips that are not selected for review, the vessel’s self-reported discards, as adjusted by the delta model, will be used for catch accounting;
- For trips that are selected for review and meet the minimum requirements described above, the discards reported by the service provider in the EM Detail File are used for catch accounting;
- For trips that are selected for review and do not meet the minimum requirements described above, the vessel’s self-reported discards, as adjusted by the delta model, will be used for catch accounting. In instances of chronic poor performance that prevents adequate monitoring, a vessel may be assigned a discard rate.

After completion of the audit, a feedback report summarizing the results of the audit will be generated and distributed to the vessel via the sector manager. Reports will be distributed on a weekly basis.
Effective upon approval of Amendment 23 to the Northeast Multispecies Fishery Management Plan by NMFS, the Maximized Retention Electronic Monitoring model would become a tool for sector vessels to meet groundfish sector monitoring requirements in fishing year 2022.

**NOAA Fisheries Maximized Retention EM Program**

Under this model, the vessel operator and crew are required to retain and land all catch of allocated groundfish, including fish below the minimum size that they would otherwise be required to discard, on all sector EM trips. Unallocated groundfish and non-groundfish species must be handled in accordance with standard commercial fishing operations. Any allowable discards must occur at designated discard control points described in the vessel’s VMP. EM data from the trip will be reviewed by the EM service provider to verify that the vessel operator and crew complied with the catch retention requirements. A DSM will meet the vessel at port upon its return from each trip to observe the offload and collect information on the catch.

**Program Goal**

The goal of the maximized retention EM program is to verify compliance with catch retention requirements and collect information on allocated groundfish discards shoreside that would normally be collected at sea.

**Description of the Maximized Retention Process**

- During each sector EM trip taken by a vessel, the EM system records all fishing activity onboard the vessel. The vessel operator and crew sort fish and make any allowable discards within view of the cameras in accordance with the catch handling protocols described in the vessel’s VMP.

- The vessel operator and crew must adhere to the following catch handling requirements:
  - Retain and land all catch of allocated groundfish, including any sublegal-size catch;
  - Discard unallocated groundfish stocks (i.e., windowpane flounder, ocean pout, wolffish, Atlantic halibut) at designated discard control points;
  - Handle all other species in accordance with standard commercial fishing operations, including adhering to possession limits for halibut (i.e., one fish per trip) and non-groundfish species; and
  - Retain allocated groundfish categorized as LUMF. All LUMF must be kept and landed. LUMF must be sorted separately from sublegal-size groundfish catch.

- The vessel operator and crew must adhere to the following reporting requirements:
  - Communicate with the DSM to facilitate the data collection process at the end of each trip. This includes:
    - The vessel operator must notify the DSM program of its intention to sail prior to beginning a sector EM trip. The notification schedule (e.g., upon sailing or in advance) and method (i.e., text, VMS) will depend on the nature of the vessel’s activity (e.g., day boat vs trip boat vessels) and will be described in the vessel’s VMP.
    - The vessel operator or dealer must provide an offload time to the DSM program in advance of landing. The advance notice of landing and offload schedule will be dependent on the nature of the vessel’s activity (e.g., day boat vs trip boat...
vessels) and will be defined in the vessel’s VMP. The standard advance notice is as follows:

- 4 hours for day boat vessels.
- 48 hours for trip boat vessels.
  - For trip boat vessels, the vessel operator or dealer will provide the DSM program with a hail weight for the total catch of allocated groundfish 24 hours prior to offload.
  - The vessel operator must report any discard events on the eVTR, consistent with standard eVTR reporting requirements.

- The vessel operator and crew and the offloading dealer of a maximized retention vessel must accommodate the DSM program:
  - The vessel operator, crew, and dealer must offload all allocated groundfish in the presence of the DSM. The vessel operator and crew may not begin offloading unless a DSM is present or they have received a waiver from the DSM program.
    - In the event that a DSM is not available to observe an offload, the vessel operator may request a waiver by contacting the DSM coordinator. Waivers may be granted at the NEFSC’s discretion.
  - The vessel operator must allow the DSM access to the fish hold immediately following the offload in order to confirm all allocated groundfish were offloaded. A vessel representative must observe/accompany the DSM during the hold inspection. The vessel representative must provide support for the DSM to safely embark and disembark the vessel (e.g., ladders/steps/assistance etc.).
  - The vessel operator and crew or dealer personnel must separate sublegal allocated groundfish catch by species. The vessel operator and crew may NOT combine sublegal and terminal legal-sized market category catch for any species.
  - The vessel operator and crew must retain all allocated groundfish categorized as LUMF and sort it separately from any sublegal catch to facilitate data collection by a dockside monitor.
  - In the event of a truck offload, sublegal catch must be loaded into totes, sealed and tagged for inspection by DSM. Totes will be tagged on camera and opened by DSM at inspection site to prevent tampering.
  - In the event of multiple offloads, the vessel operator and crew must arrange for a DSM to be present at each one.

- Federally permitted NE multispecies dealers must process fish for vessels participating in a maximized retention electronic monitoring program consistent with and including, but not limited to, the following requirements:
  - Offload from vessels participating in the maximized retention monitoring program all fish below the minimum size specified at § 648.83 before other fish that meet the minimum size, sort the undersized fish by species, and provide the dockside monitor access to those at the safe sampling station.
  - Sort by species all unmarketable fish from other fish, when identifiable to species.
  - Clearly identify, mark, or label all containers with fish below the minimum size specified in § 648.83 as containing undersized fish, the fishing vessel from which they were offloaded, and the date of offloading.
  - Report all fish below the minimum size specified in § 648.83, and all unmarketable fish, as instructed by NMFS.
- Purchase sublegal fish from maximized retention vessels, if desired.

**Selection of maximized retention trips for review:**
- Sector EM trips are selected for review when NMFS receives the eVTR for a trip. Trips will be randomly selected and each trip has the same probability of being selected for review. For fishing year 2022, trips will be selected at a rate of 50 percent.
- The sampling unit selected for review will be a complete trip.
- A list of trips selected for review are loaded into the NOAA Fishery Monitoring Web Portal on a weekly basis. EM service providers may access the trip selection list via the Web Portal.
- The EM service provider completes the primary video review, which includes:
  - Review of all raw sensor and image data to confirm completeness of trip;
  - Review of sensor data to annotate start/end times and locations, and identify number of hauls;
  - Review hauls to annotate any discard events and generate the EM Detail File according to the specifications in the Video Review Guidance document; and
  - Submit the EM Detail File to the NEMIS API.
- The EM service provider should complete the primary video review and submit the EM Detail Report within 10 business days of the trip selection.
- NMFS will use the same catch accounting methodology used for ASM vessels to account for discards for the maximized retention EM program (i.e., observed trips and discard rates):
  - Trips observed by a NEFOP observer will be charged ACE based on actual discards, if any are recorded by the observer; and
  - Trips that are not observed by a NEFOP observer will receive:
    - A discard rate of zero for allocated groundfish stocks; and
    - A non-zero discard rate based on NEFOP data for unallocated groundfish stocks.
  - The maximized retention EM program will be assigned a separate discard rate strata from ASM vessels.
- NMFS will use dealer data to account for all landed catch with regards to catch accounting, including sublegal-sized catch. DSM data will be compared to dealer data to verify that dealers are accurately reporting sublegal catch.