AMENDMENT 5 TO THE ATLANTIC HERRING FMP: CATCH MONITORING ALTERNATIVES

1.0 MEASURES TO ESTABLISH A CATCH MONITORING PROGRAM FOR THE ATLANTIC HERRING FISHERY

1.1 BACKGROUND

XXX

1.2 GOALS AND OBJECTIVES (CATCH MONITORING)

In general, the goals (numbered) and objectives (bulleted) of the catch monitoring program established in Amendment 5 are:

(1) To create a cost effective and administratively feasible program for provision of accurate and timely records of catch of all species caught in the herring fishery;

- Review federal notification and reporting requirements for the herring fishery to clarify, streamline, and simplify protocols;

(2) Develop a program providing catch of herring and bycatch species that will foster support by the herring industry and others concerned about accurate accounts of catch and bycatch, i.e., a well-designed, credible program;

- Avoid prohibitive and unrealistic demands and requirements for those involved in the fishery, i.e., processors and fishermen using single and paired midwater trawls, bottom trawls, purse seines, weirs, stop seines, and any other gear capable of directing on herring;
- Improve communication and collaboration with sea herring vessels and processors to promote constructive dialogue, trust, better understanding of bycatch issues, and ways to reduce discards;
- Eliminate reliance on self-reported catch estimates;

(3) Design a robust program for adaptive management decisions;

(4) Determine if at-sea sampling provides bycatch estimates similar to dockside monitoring estimates;

- Assure at-sea sampling of at-sea processors' catches is at least equal to shoreside sampling;
- Reconcile differences in federal and states' protocols for dockside sampling, and implement consistent dockside protocols to increase sample size and enhance trip sampling resolution.

1.3 MEASURES TO IMPROVE QUOTA MONITORING AND REPORTING

Increasing compliance with reporting will help to improve the accuracy of landings data and quota/TAC monitoring, which will lead to more effective management of the herring fishery. The Council is considering management measures to provide for real-time quota monitoring to the extent possible. The following subsections describe the measures that are currently under consideration/development to improve real-time quota monitoring, reporting, and compliance.

1.3.1 Modifications to Interactive Voice Response (IVR) Reporting Requirements

1.3.1.1 Background

Currently, vessels participating in the Atlantic herring fishery are required to call-in and report their herring catch on a weekly basis through the Interactive Voice Response (IVR) system. The IVR system is an automated, phone-based reporting method initially created for multispecies dealer reporting. It was later modified to include Atlantic herring catch reports in response to the need for real-time quota monitoring. The regulations specify that the owner or operator of any vessel issued a limited access Atlantic herring permit must submit an Atlantic herring catch report via the IVR system each week, regardless of how much herring is caught (including weeks when no herring is caught), unless exempted from this requirement by the Regional Administrator. In addition, the owner or operator of any vessel issued an open access permit for Atlantic herring that catches 2,000 pounds of Atlantic herring on any trip in a week must submit an Atlantic herring catch report via the IVR system for that week as required by the Regional Administrator.

The main reason for utilizing the IVR system in the Atlantic herring fishery is to monitor the Total Allowable Catch (TAC) limits set for the four herring management areas. As part of the Atlantic herring fishery specification process, each management area is annually assigned a TAC (in metric tons). Although vessels are also required to report catches with vessel trip report (VTR) forms, near real-time data is obtained through the IVR system allowing the TACs to be monitored. When the catch in a management area is projected to reach 95% of its specified TAC (or 92% in areas with research set-asides), the Regional Administrator enacts a closure for all directed herring fishing, and all vessels are restricted to a herring possession limit of 2,000 pounds to accommodate incidental catch.

The IVR system currently requires vessel owners/operators to submit herring catch reports through the IVR system even during weeks when the vessel may not have fished and/or may not have caught any herring. These are considered “negative reports,” i.e., reports of zero catch. NMFS supports the continuation of negative IVR reporting in the herring fishery and has indicated that other fisheries are moving towards implementing this requirement where applicable. Negative IVR reports ensure that catch/landings data are more complete and affirm an action relative to vessels’ fishing activity during any given week. Negative reports help to resolve potential problems with “missing” data; for example, if a vessel has been submitting herring catch reports through the IVR system and does not fish or catch herring for several weeks, the negative reports allow database managers to know that the vessel did not fish or catch

herring during those weeks, versus making assumptions about the vessel's fishing activity and/or applying a proxy level of catch for the vessel's missing reports. Data gaps must be addressed in a timely fashion in order to use the IVR system for real-time quota monitoring, so if negative reports are not filed, it is less clear whether the available data accurately characterize catch in the fishery for quota monitoring purposes.

During the scoping process and ongoing discussions regarding the development of Amendment 5, several possible modifications to the herring IVR reporting system have been proposed for further consideration. The intent of these measures would be to improve reporting compliance and the accuracy and timeliness of quota monitoring information.

In this amendment, it will be important to clarify and ensure, to the extent possible, that all catch is required to be reported. Management area TACs represent total allowable catch, which includes landings and discards. Monitoring the TACs in a timely an effective manner will require improved reporting and documentation of bycatch/discards in the fishery. Observer reports, confirmed by industry members, indicate that herring vessels (trawlers and purse seiners) sometimes release hauls for various reasons (too many fish to pump to vessel; fish too small, bycatch, etc). The amount of fish released should be reported as discard (through whatever mechanism determined in this amendment) and counted toward TAC monitoring, in addition to being reported on VTRs. Efforts should be made in this amendment to improve reporting of discards in the Atlantic herring fishery.

Current regulations for VTR reporting in Section 648.7 require vessels to submit the following information on VTRs: Vessel name; USCG documentation number (or state registration number, if undocumented); permit number; date/time sailed; date/time landed; trip type; number of crew; number of anglers (if a charter or party boat); gear fished; quantity and size of gear; mesh/ring size; chart area fished; average depth; latitude/longitude (or loran station and bearings); total hauls per area fished; average tow time duration; hail weight, in pounds (or count of individual fish, if a party or charter vessel), by species, of all species, or parts of species, such as monkfish livers, **landed or discarded**; and, in the case of skate discards, "small" (i.e., less than 23 inches (58.42 cm), total length) or "large" (i.e., 23 inches (58.42 cm) or greater, total length) skates; dealer permit number; dealer name; date sold, port and state landed; and vessel operator's name, signature, and operator's permit number (if applicable).

Current regulations for IVR reporting in Section 648.7 state the following for IVR reporting: The owner or operator of a vessel issued a permit to fish for Atlantic herring must report catches (retained and discarded) of herring each week to an IVR system, as specified in paragraphs (b)(2)(i)(A) and (B) of this section. The report shall include at least the following information, and any other information required by the Regional Administrator: Vessel identification, week in which species are caught, **pounds retained, pounds discarded**, management areas fished, and pounds of herring caught in each management area for the week. The IVR reporting week begins on Sunday at 0001 hrs (12:01 AM) local time and ends Saturday at 2400 hrs (12 midnight). Weekly Atlantic herring catch reports must be submitted via the IVR system by midnight, Eastern Time, each Tuesday for the previous week. Reports are required even if herring caught during the week has not yet been landed.

1.3.1.2 No Action Option

Under the no action option, no changes would be made to the current IVR call-in system. Current IVR reporting provisions are as follows:

- The owner or operator of any vessel issued a limited access herring permit must submit an Atlantic herring catch report via the IVR system each week, regardless of how much herring is caught (including weeks when no herring is caught), unless exempted from this requirement by the Regional Administrator.
- An owner or operator of any vessel issued an open access permit for Atlantic herring that catches 2,000 lb (907.2 kg) of Atlantic herring on any trip in a week must submit an Atlantic herring catch report via the IVR system for that week as required by the Regional Administrator.
- The IVR report shall include at least the following information, and any other information required by the Regional Administrator: Vessel identification, week in which species are caught, pounds retained, pounds discarded, management areas fished, and pounds of herring caught in each management area for the week. The IVR reporting week begins on Sunday at 0001 hrs (12:01 a.m.) local time and ends Saturday at 2400 hrs (12 midnight). Weekly Atlantic herring catch reports must be submitted via the IVR system by midnight, Eastern Time, each Tuesday for the previous week. Reports are required even if herring caught during the week has not yet been landed.
- Atlantic herring IVR reports are not required from Atlantic herring carrier vessels

1.3.1.3 Option – Require Trip-by-Trip IVR Reporting

Under this option, the following provisions would apply:

Limited Access Permit Holders (Categories A, B, C)

- All limited access permit holders (Category A, B, and C) would be required to submit an Atlantic herring catch report via the IVR system on a trip-by-trip basis.
- Negative reports would continue to be submitted on a weekly basis (status quo).
- Limited access permit holders also would be required to report a NMFS-specified trip identifier (ex., first page VTR serial number for the trip); this will establish a mechanism to more accurately match/link trips between the IVR, VTR, and dealer databases.
- Offloading to at-sea herring dealers (i.e., carriers that sell fish) would be considered the same as offloading to a shoreside dealer for the purposes of IVR reporting.

1.3.1.3.1 Sub-Options for Open Access Permit Holders (Category D)

Open Access Sub-Option 1:

- Open access permit holders would be required to submit an Atlantic herring catch report via the IVR system on a trip-by-trip basis for any trips on which herring is caught (landed or discarded).

- Negative IVR reports would not be required for open access permit holders.
- Open access permit holders also would be required to report a NMFS-specified trip identifier (ex., first page VTR serial number for the trip); this will establish a mechanism to more accurately match/link trips between the IVR, VTR, and dealer databases.
- Offloading to at-sea herring dealers (i.e., carriers that sell fish) would be considered the same as offloading to a shoreside dealer for the purposes of IVR reporting.

Open Access Sub-Option 2:

- Open access permit holders that possess a Letter of Authorization (LOA) to transfer Atlantic herring at sea would be required to submit an Atlantic herring catch report via the IVR system on a trip-by-trip basis for any trips on which herring is caught (landed or discarded). These permit holders also would be required to report a NMFS-specified trip identifier (ex., first page VTR serial number for the trip); this will establish a mechanism to more accurately match/link trips between the IVR, VTR, and dealer databases.
- Negative IVR reports (weekly) would be required for open access permit holders that possess a LOA to transfer Atlantic herring at sea. The current LOA would be revised to include this requirement.
- Open access permit holders that do not receive a LOA to transfer Atlantic herring at sea would continue to be subject to current (status quo) IVR reporting requirements (weekly reporting for vessels that catch 2,000 pounds of Atlantic herring on any trip in a week, negative reports not required).
- Offloading to herring carrier vessels would be considered the same as offloading to a shoreside dealer for the purposes of IVR reporting.

1.3.1.3.2 Sub-Options for Trip-by-Trip Reporting Deadlines

Deadline Sub-Option 1:

For permit holders that would be subject to a requirement to report catch via the IVR system on a trip-by-trip basis, the deadline for reporting would be within **24 hours** of each offload or prior to starting the next fishing trip, whichever is less.

Comment [lls1]: This option was originally based on regulations for the tilefish fishery, but tilefish deadlines recently changed to 48 hours.

Deadline Sub-Option 2:

For permit holders that would be subject to a requirement to report catch via the IVR system on a trip-by-trip basis, the deadline for reporting would be within **6 hours** of each offload or prior to starting the next fishing trip, whichever is less.

1.3.1.4 Option – Maintain Weekly IVR Reporting Requirement with New Reporting Deadline

Under this measure, **IVR weekly reporting deadlines would be changed from Tuesday midnight (current) to Monday midnight** – this would provide better lead time for projections and management area closures. For permit holders that would be subject to a requirement to report catch via the IVR system on a weekly basis (proposed in the alternative described above for open access permit holders and negative reports for limited access permit holders), weekly Atlantic herring catch reports and negative reports must be submitted via the IVR system by midnight, Eastern Time, each Monday for the previous week.

1.3.1.5 Option: Eliminate IVR Reporting and Implement VMS Reporting for Quota Monitoring

This option would eliminate the IVR call-in system and would implement requirements for vessels to report Atlantic herring catch on a real-time basis through their VMS (see options for VMS reporting in Section 1.3.2 below).

1.3.2 Measures to Address VTR/VMS Reporting and Related Provisions

The Council may select any combination of the following options to address VMS/VTR reporting and related provisions.

1.3.2.1 No Action Option

Under the no action option, no changes to VTR reporting or VMS provisions would be implemented in Amendment 5.

1.3.2.2 Option: Require Vessel Trip Reports (VTRs) to be Submitted on a Weekly Basis

This measure would require vessels to submit VTRs on a weekly basis (versus the current monthly requirement). This measure could facilitate timely cross-checking between VTRs and weekly dealer reports.

1.3.2.3 Option: Eliminate the VMS "Power Down" Provision for Limited Access Herring Vessels

This measure would prohibit limited access herring vessels from turning off their VMS units when in port unless specifically authorized by NMFS through a Letter of Exemption, consistent with VMS provisions for the multispecies, scallop, and surf clam/ocean quahog fleet:

- The Northeast Fisheries Regulations allow vessels holding certain permits to turn off their VMS units during periods when the vessel will be out of the water or during extended periods of no fishing activity. The request must be made in advance of the intended

exemption period, and a "Letter of Exemption" (LOE) must be issued by NMFS. Vessels may not turn VMS units off until they receive a LOE approval from NMFS.

- **All Vessels.** May request a Letter of Exemption from NMFS if the vessel is expected to be out of the water for more than 72 consecutive hours.
- **Limited Access Multispecies, Limited Access Scallop and Surfclam/Ocean Quahog Vessels (Proposed to Add Limited Access Herring Vessels).** May sign out of the VMS program for a minimum of 30 consecutive days by obtaining a Letter of Exemption from NMFS. The vessel may not engage in ANY fisheries until the VMS unit is turned back on.

1.3.2.4 Option: Require Daily VMS Reporting of Atlantic Herring Catch and Discards

This measure would require that limited access herring vessels (Category A, B, and C) report Atlantic herring catch and discards, and management area fished on a daily basis through their vessel monitoring systems (VMS) on any declared herring trip.

The operator of a limited access herring vessel must submit reports via VMS, in accordance with instructions provided by the Regional Administrator, for each day of the fishing trip when declared into the herring fishery. The reports must be submitted in 24-hour intervals for each day, beginning at 0000 hr and ending at 2400 hr, and must be submitted by 0900 hr of the following day, or as instructed by the Regional Administrator. The reports must include at least the following information:

(A) Total pounds of Atlantic herring kept and discarded;

(B) Date fish were caught and management area in which fish were caught; and

(C) NMFS-specified trip identifier (ex., VTR serial number), as instructed by the Regional Administrator.

1.3.2.5 Option: Require VMS Reporting for Every Offload and Transfer

This measure would require that limited access herring vessels (Category A, B, and C) report Atlantic herring catch and discards, and management area fished through their vessel monitoring systems (VMS) on any declared herring trip at any time an offload and/or transfer at sea event occurs. Offloads are defined under the option proposed in Section 1.3.2.6 of this document. Transfers at sea are defined under the option proposed in Section 1.3.4.2 of this document.

The operator of a limited access herring vessel must submit reports via VMS, in accordance with instructions provided by the Regional Administrator, for each offload and/or transfer at sea event when declared into the herring fishery. The reports must be submitted within XXX, or as instructed by the Regional Administrator. The reports must include at least the following information:

(A) Total pounds of Atlantic herring kept and discarded;

(B) Date fish were caught and management area in which fish were caught; and

(C) NMFS-specified trip identifier (ex., VTR serial number), as instructed by the Regional Administrator

(D) Identification of dealer/vessel involved in the offload and/or transfer at sea.

1.3.2.6 Option: Modify the Regulatory Definition of "Offload" for the Atlantic Herring Fishery

This option would modify the regulatory definition of *offload* for the purposes of the Atlantic herring fishery to clarify reporting provisions.

An *offload* is currently defined in §648.2 as follows:

Offload or offloading means to begin to remove, to remove, to pass over the rail, or to otherwise take away fish from any vessel…

Under this option, the definition of offload would be modified as to add the following:

For the purposes of the Atlantic herring fishery, an offload or offloading means to remove, begin to remove, to pass over the rail, or otherwise take fish away from any vessel for sale to either a permitted At-sea Atlantic Herring dealer (as defined under the option in Section 1.3.3 of this document) or a permitted land-based Atlantic herring dealer.

1.3.3 Measures to Address Carrier Vessels and Letters of Authorization (LOAs)

Establishing a catch monitoring program for the Atlantic herring fishery in Amendment 5 provides an opportunity to review and possibly modify/clarify existing regulatory definitions and current permit/reporting provisions as they pertain to reporting Atlantic herring fishing activity. Some modifications may help to improve reporting compliance, ensure accuracy and completeness of data, and improve consistency between databases.

The Letters of Authorization (LOAs) issued by NMFS for the Atlantic herring fishery currently allow an unlimited amount of herring (or the amount allowed by the vessels' herring permit) to be transferred at-sea (a) from herring catcher vessels to carriers; (b) between federally-permitted herring vessels; and (c) from herring catcher vessels to non-permitted vessels for personal use as bait (see example LOAs distributed at July 30, 2008 Meeting). As a result, many transfers of herring at-sea may not be captured in both of the databases (IVR and dealer) used for in-season monitoring of catch and landings, which can lead to incomplete catch data and inconsistencies between datasets.

1.3.3.1 No Action Option

Under the no action option, no changes to the current Letters of Authorization (LOAs) for the herring fishery would be implemented in Amendment 5 (Table 1). No additional provisions related to carrier vessels would be implemented in this amendment either.

Table 1 Summary of Current Letters of Authorization for the Atlantic Herring Fishery

LOA	Who	Provisions
Transfer at Sea	Any permitted herring vessels wishing to transfer herring at sea	• Enrollment duration: Permit year • Transfer, within the transferring vessel's permitted possession limits, to vessels not issued an Atlantic herring permit for personal use as bait, provided that the vessel does not have purse seine, midwater trawl, pelagic gillnet, sink gillnet, or bottom trawl gear aboard; • Transfer, within the transferring vessel's permitted possession limits, to vessels issued an Atlantic herring carrier LOA, or to permitted at-sea processors; • Transfer, within the transferring vessel's permitted possession limits, to another permitted herring vessel
Carrier*	Any permitted herring vessels wishing to transport herring from catcher vessels to land-based dealers	• Enrollment period: Minimum 7 days • Receive, transport, and transfer Atlantic herring caught by another vessel. • No gear allowed on board • All reporting requirements associated with carrier's permit apply
Midwater trawl*	Any permitted herring vessels wishing to fish with midwater trawl gear in the Gulf of Maine (GOM)/Gorges Bank (GB) Regulated Mesh Area (RMA)	• Enrollment period: Minimum 7 days • Vessel may fish with midwater trawl gear in GOM/GB RMA, including Closed Area I, Closed Area II, and Nantucket Lightship Closed Area, with nets less than the minimum mesh size at §648.80(a)(3)(ii). • All reporting requirements associated with vessel's permit apply • NFMS observer program 72 hrs prior to trip • Notification call to OLE 6 hrs prior to landing
Purse Seine*	Any permitted herring vessels wishing to fish with purse seine gear in the GOM/GB RMA	• Enrollment period: Minimum 7 days • Vessel may fish with purse seine gear in GOM/GB RMA, including Closed Area I, Closed Area II, and Nantucket Lightship Closed Area, with nets less than the minimum mesh size at §648.80(a)(3)(ii). • All reporting requirements associated with vessel's permit apply • NFMS observer program 72 hrs prior to trip • Notification call to OLE 6 hrs prior to landing

1.3.3.2 Option: Require VMS on All Carrier Vessels for Declaration Purposes

This measure would require all Atlantic herring carrier vessels to utilize a VMS for the purposes of declaring when they may be engaged in herring carrying activities. See Section 1.3.5 of this document for additional information.

1.3.3.3 Option: Establish a New At-Sea Herring Dealer Permit

This option would establish a new Federal At-Sea Herring Dealer permit that would be required for carrier or other vessels that sell Atlantic herring to any entity.

- This option would modify the definition of "Atlantic Herring Dealer" in Section 648.2 (Definitions) to include carrier vessels that may sell fish.
- The permit would require compliance with federal dealer reporting requirements (Section 648.7) at any time the vessel is in possession of the at-sea dealer permit. A "dealer identifier" would have to be developed for at-sea for the purposes of reporting. Vessels that have both the At-Sea Herring Dealer Permit and a herring fishing permit would be required to fulfill the reporting requirements of both permits while in possession of both permits.
- Carrier vessels would still be required to obtain a LOA from the NMFS Regional Administrator to engage in carrying activities.

1.3.3.4 Options to Modify Restrictions for Carriers During LOA Enrollment Period

The following options are intended to provide carrier vessels with additional flexibility during the time in which they are enrolled as carriers. These options are dependent on incorporating carrier vessels into the pre-trip declaration program through VMS (Sections 1.3.3.2 and 1.3.5 of this document).

Option: Eliminate Minimum Seven-Day Enrollment Period for Carrier LOAs

Under this option, vessels that want to act as Atlantic herring carriers could obtain a LOA from NMFS to do so for the entire fishing year. Vessels would be required to use their VMS declaration to indicate whether or not they will be engaged in herring carrying activity (see following option).

Option: Allow Carrier Vessels to Engage in Other Carrying Activities During LOA Enrollment Period

If carrier vessels are required to utilize VMS for trip declaration purposes, then this measure would allow them to engage in other activities while in possession of the herring carrier LOA. Prior to each fishing trip, the carrier vessels could utilize VMS declarations to indicate what activity they intend to engage in during the trip. If the vessel declares "carrier other," then it cannot carry Atlantic herring on that fishing trip.

- Herring vessels on standard fishing trips would declare HER-HER for a herring fishing trip, or DOF when not participating in the fishery.

- Carrier vessels that possess the Carrier LOA could declare HER-CAR. These vessels would be subject to the provisions of the LOA and would not be allowed to carry other species on that trip.
- Carrier vessel that possess the Carrier LOA could declare OTH-CAR. These vessels would not be allowed to carry Atlantic herring on that trip.

1.3.4 Measures to Address Vessel-to-Vessel Transfers of Atlantic Herring

NMFS has indicated that the current provisions and allowances for transfers of herring at sea are problematic and may be one of the most challenging problems when trying to resolve differences between databases and/or ensure completeness of Atlantic herring catch/landings data.

VTR records indicate that 933,862 pounds of herring were reported as "sold for bait" by vessels, presumably as transfers at sea. To date, during the 2008 fishing year, 25 unique vessels have been issued a Letter of Authorization to transfer Atlantic herring at-sea. VTR records for the 2008 fishing year are incomplete, and since most activity occurs during summer/fall, only 76,625 pounds have been reported as "sold for bait" in 2008 to date. Of the reported bait transactions during 2007 and 2008 to date, only 24 were for 10,000 pounds or more. The largest transaction reported was for 20,000 pounds. However, it is unclear what percentage of the total transfers at sea and/or bait transactions between vessels these numbers may represent because this activity may be under-documented due to the current reporting system and allowance of at-sea transfers to occur in this fishery without restriction on the amount or nature of the transfer. NMFS suspects that transfer at-sea activity may be substantially higher than the current data indicate; addressing this issue could help to resolve some discrepancies between databases and provide for more complete and accurate records of the activity occurring in this fishery.

In Amendment 5, the Council is considering measures to minimize transfers at sea and/or standardize reporting requirements for vessels transferring/receiving herring. Management options currently under consideration to address transfers of herring at sea are described below and are not necessarily independent of each other.

1.3.4.1 No Action Option

Under the no action option, reporting requirements and other restrictions for vessels transferring Atlantic herring at sea would remain unchanged. All herring vessels would be allowed to transfer herring at sea based on the current provisions, which are summarized below:

- A vessel that transfers herring at sea to a vessel that receives it for personal use at bait must report all transfers on the Fishing Vessel Trip Report.
- A vessel that transfers herring at sea to an authorized carrier vessel must report all transfers weekly via the IVR system and must report all transfers on the Fishing Vessel Trip Report. Each time the vessel offloads to the carrier vessel is defined as a trip for the purposes of reporting requirements and possession allowances.
- A vessel that transfers herring at sea to an at-sea processor must report all transfers weekly via the IVR system and must report all transfers on the Fishing Vessel Trip Report. Each time the vessel offloads to the at-sea processing vessel is defined as a trip for the purposes of

the reporting requirements and possession allowances. For each trip, the vessel must submit a Fishing Vessel Trip Report and the at-sea processing vessel must submit the detailed dealer report.

- A transfer between two vessels issued valid Atlantic herring permits requires each vessel to submit a Fishing Vessel Trip Report, filled out as required by the LOA to transfer herring at sea, and a weekly IVR report for the amount of herring each vessel lands.

1.3.4.2 Option: Establish a Regulatory Definition of Transfer at Sea for the Atlantic Herring Fishery

A *transfer* is currently defined in §648.2 as follows:

Transfer means to begin to remove, to remove, to pass over the rail, or to otherwise take away fish from any vessel and move them to another vessel.

The actions that qualify as transfers that are currently permitted for the herring fishery are described in the transfer at sea provisions at §648.13(f). The regulations allow permitted Atlantic herring vessels to engage in the following activities:

- Transfer, within the transferring vessel's permitted possession limits, to vessels not issued an Atlantic herring permit for personal use as bait, provided that the vessel does not have purse seine, midwater trawl, pelagic gillnet, sink gillnet, or bottom trawl gear aboard;
- Transfer, within the transferring vessel's permitted possession limits, to vessels issued an Atlantic herring carrier LOA, or to permitted at-sea processors;
- Transfer, within the transferring vessel's permitted possession limits, to another permitted herring vessel.

This option would establish a regulatory definition of *transfer at sea* for the purposes of the Atlantic herring fishery to clarify provisions related to each vessel engaged in the operation.

Sub-Option 1: Define a herring transfer at sea as: *a transfer of herring directly from a permitted Atlantic herring vessel (i.e. in the vessel hold or on deck) to another vessel for personal use as bait, to an Atlantic herring carrier or at-sea processor, or to another permitted herring vessel.*

Sub-Option 2: Define a herring transfer at sea as: *a transfer from an Atlantic herring vessel (i.e. in the vessel hold or on deck), codend, purse seine to another vessel for personal use as bait, to an Atlantic herring carrier or at-sea processor, or to another permitted herring vessel. Two vessels hauling one codend is pair trawling and is not considered a transfer at sea.*

1.3.4.3 Option: Expand Possession Restrictions to All Vessels Working Cooperatively in the Atlantic Herring Fishery (to Include Purse Seine Vessels and Vessels that Transfer Herring At-Sea)

The regulations at §648.204(b) state that both vessels involved in a pair trawl operation must be issued the herring permit appropriate for the amount of herring jointly possessed by both of the vessels participating in the pair trawl operation. This means that the more restrictive possession limit of the vessels participating in a pair trawl operation is the limit of the total amount of herring that the vessels may jointly fish for, possess, or land in any calendar day.

For example, if Vessel 1 has a Category A permit, which has no possession limit, and Vessel 2 has a Category C permit, with a possession limit of 55,000 lbs/day, then the vessels are only permitted to jointly fish for, possess, and land 55,000 lbs/day.

This option would expand the provisions §648.204(b) to include paired purse seine operations and transfers at sea between vessels. In summary, vessels working cooperatively are subject to the vessels' the more restrictive possession limit.

1.3.4.4 Option: Restrict Transfers At-Sea to Only Vessels with Category A or B Limited Access Permits

This measure would allow only vessels participating in the limited access directed fishery for Atlantic herring (Category A or B permits) to transfer herring at sea.

- Transferring and receiving vessels would be required to possess a limited access Category A or B permit for the herring fishery.
- Herring carrier vessels operating under a Carrier LOA would be exempt from this requirement.

If selected alone (i.e., without a measure to address open access permit holders, see below), this measure limits at-sea transfers to the limited access directed fishery permit holders only. These are the vessels that do not operate under a possession limit for herring, improving at-sea enforceability.

1.3.4.5 Option: Prohibit Transfers At-Sea to Non-Permitted Vessels

This measure would allow only vessels that possess a federal Atlantic herring permit to transfer herring at sea. Non-permitted vessels would be prohibited from receiving herring at-sea, even for personal use as bait.

- Transferring and receiving vessels would be required to possess a Category A, B, C, or D permit for the herring fishery. The Category D permit is an open access permit, so any vessel can obtain this permit, but possession of this permit subjects the vessel to VTR and other reporting requirements.

This measure may improve reporting compliance. Requiring a federal permit of some sort by all vessels engaged in the transfer activity reduces the likelihood that some herring catch, even in small amounts, will not be documented. However, this measure would require that vessels with

no Federal permits (recreational vessels, for example) obtain a permit for herring and comply with all related reporting requirements.

1.3.4.6 Option: Transfer At Sea Provisions for Category D (Open Access) Vessels

Comment [lls2]: This appears to be status quo for these vessels. Not clear what the intent of this measure is, and not clear how possession limits can be enforced.

This measure would allow vessels with open access Category D permits to transfer herring at sea provided:

- The transferring vessel has a LOA issued by the Regional Administrator on board; and
- The transferring vessel identifies on its VTR the name of the vessel and the pounds of Atlantic herring transferred for each receiving vessel on a trip.
- Herring carrier vessels operating under a Carrier LOA would be exempt from this requirement.

This option could be combined with one of the above two options to address transfers of Atlantic herring at sea.

1.3.4.7 Option: Restrict Transfers at Sea to Trips with an At-Sea Monitor/Observer

Comment [lls3]: This option was suggested by the NERO and has not been discussed yet by the Committee.

Under this option, transfers at sea (as defined in this amendment) would only be allowed on trips with an at-sea observer or other fisheries monitor on board. This option was proposed by NOAA Fisheries as a possible way to reduce and better monitor transfers of Atlantic herring at-sea.

1.3.4.8 Option: Improve Reporting of Herring Transferred At-Sea to Carriers

This option would expand reporting requirements for catcher vessels transferring Atlantic herring to carrier vessels. This option would require carrier vessels to report the NMFS-specified trip identifier (for example, VTR serial number) from the catcher vessel when offloading to a dealer. Carrier vessels acting as dealers would be required to report the NMFS-specified trip identifier from the catcher vessels in their dealer reports.

1.3.5 Measures to Address Trip Declaration and Notification Requirements

A comprehensive catch monitoring program will likely require notification by vessels prior to taking trips (to deploy observers) and/or prior to landing (to deploy dockside samplers), so efforts should be made to clarify notification requirements and ensure that all vessels participating in the herring fishery are subject to the same requirements. The existing call-in requirement for vessels to request an observer before leaving port was established in response to concerns about haddock bycatch and the establishment of the haddock catch cap in the herring fishery (Framework 40B to the Multispecies FMP) and currently applies only to Category A and B vessels fishing on a declared herring trip. Although developed for a very specific purpose, this requirement has been helpful to the Observer Program to determine the schedule of observer coverage and know better where and when herring trips will occur. It also helps NMFS to estimate and target specific levels of coverage in the fishery during the fishing year. If the notification program is set up in the most efficient manner, it can help to reduce operating costs for the observer program, as fishing trips are more predictable and less time is spent determining when/where observed trips should occur. If the expectation is that all herring vessels should be

observed during some or all of their fishing operations, then this measure could assist the Observer Program in deploying observers in the most efficient way across the entire fishery while minimizing the burden on the vessels. The proposed modifications to the current program (options for notification, timing) would both improve efficiency and reduce the burden on the industry.

1.3.5.1 No Action Option

XXX

1.3.5.2 Option: Modify and Extend the Pre-Trip Call-in Requirement to All Limited Access Herring Vessels

This option would require limited access herring vessels (Category A, B, and C) to notify the Observer Program **prior to any trip where the operator may harvest, possess, and land Atlantic herring.** It would also modify the call-in requirements to make them less burdensome for the industry.

In order to possess, harvest, or land herring, representatives for Category A, B, and C fishing vessels must provide notice to NMFS, including the vessel name, contact information for coordination of observer deployment, and the date, time, and port of departure at least 18 hours prior to beginning the trip. Vessel representatives may notify NMFS through telephone, fax, email, or other mechanisms (TBD). If a vessel has been issued a limited access herring permit but does not provide notification to NMFS before beginning the fishing trip, the vessel is prohibited from possessing, harvesting, or landing Atlantic herring on that trip.

Comment [lls4]: Details to be developed with input from Observer Program

Sub-Option: Require Atlantic herring carrier vessels to comply with call-in requirements

1.3.5.3 Option: Modify and Extend the Pre-Trip Call-in Requirement and Extend Pre-Landing Notification Requirement to All Limited Access Vessels

In addition to the measures proposed in the above option to modify and extend the pre-trip call-in requirement, this option would require limited access herring vessels (Category A, B, and C) to notify NMFS Law Enforcement via VMS of the time and place of offloading at least six hours prior to crossing the VMS demarcation line on their return trip to port (or six hours prior to landing if the vessel does not fish seaward of the demarcation line).

Sub-Option: Require Atlantic herring carrier vessels to comply with call-in and pre-landing notification requirements

Discussion

Category A and B vessels fishing on a declared herring trip are also currently required to notify NMFS Law Enforcement via VMS of the time and place of offloading at least six hours prior to crossing the VMS demarcation line on their return trip to port (or six hours prior to landing if the vessel does not fish seaward of the demarcation line). Extending the VMS pre-landing requirement to all limited access herring vessels encountering herring on a trip may be an

appropriate option to consider, especially if the catch monitoring program developed in this amendment includes a dockside monitoring/sampling program. This notification could facilitate the deployment of dockside samplers (the proposed dockside sampling alternative in this amendment already includes some form of pre-landings notification, so the current VMS notification could possibly serve this purpose if it is extended to the entire limited access fleet). It would also provide consistency regarding vessels that would be subject to pre-trip and pre-landing notification requirements and may reduce the complexities associated with declarations into/out of the fishery.

1.3.6 Outreach Programs to Improve Compliance and Consistency

The Council recommends that NMFS to conduct outreach programs to enhance the industry's understanding of all regulations pertaining to the reporting of herring catch and the catch monitoring program that may be established in this amendment.

1.3.6.1 Outreach Program to Ensure Consistency in Reporting and Improve Compliance

The Council will work with NMFS to structure an outreach program for improving reporting compliance by vessels and dealers once Amendment 5 is implemented. The Atlantic herring fishery is discrete enough that NMFS could work with the majority of participants in the fishery to standardize and clarify reporting requirements and better ensure that landings/catch data are provided to NMFS in a consistent and complete format.

1.3.6.2 Outreach Program to Foster Cooperation with Catch Monitoring Program

The Council will work with NMFS to structure an outreach program for enhancing communication and fostering cooperation between vessel operators, dealers, processors, and managers upon the implementation of the catch monitoring program proposed in this amendment.

1.4 MEASURES TO STANDARDIZE/CERTIFY VOLUMETRIC MEASUREMENTS OF CATCH

Comment [lls5]: These measures seem to rely on a dockside monitoring program…not clear how these measures would be effective without dockside monitoring program

Amendment 5 may include management measures that require standardization and/or certification of volumetric measurements used to estimate herring catch. The intent of these measures is to move towards as close to 100% catch weighing as practicable. Options under consideration are described below.

1.4.1 No Action Option

Under the no action option, measures would not be established in Amendment 5 to require vessels/dealers to standardize/certify volumetric measurements of catch.

1.4.2 Option: Require Certification of Vessel Fish Holds

This option would require that herring vessels certify the volume of their fish holds to obtain a more accurate estimate of catch.

As a condition of obtaining the limited access permit, limited access herring vessels would be required to contract a marine surveyor to certify the vessel's fish hold for volumetric capacity. Schematics and conversion charts for each fish hold would be submitted to NMFS at the time of renewal of the limited access permit. NMFS would provide the schematics and conversion charts (and calibration tables)to the party responsible for certifying the catch (see XXX below). Each vessel would retain on board a customized measuring stick for the fish hold for the certifying party to utilize to estimate the total weight of the catch on board. With a known weight of fish per unit of volume, a relatively simple calculation can be performed to determine the amount of fish in the hold (using calibration tables).

1.4.2.1 Background – State of Maine

Regulations in the State of Maine already require that herring vessels have their fish holds measured and "sealed" by the State Sealer of Weights and Measures, so many vessels in the herring fishery already have the information necessary to determine the capacity of the fish holds. Relevant regulations from the State of Maine are summarized below.

- **Sealing of boats.** The holds of all boats transporting herring for processing purposes must be measured and sealed by the State Sealer of Weights and Measures or the State Sealer's designee.
- **Fee.** The owner of the boat shall pay a fee for the measuring and sealing as determined by the State Sealer of Weights and Measures, based on the carrying capacity of the boat.
- **Method of measuring and sealing.** The measure must be in 5 hogshead divisions measured by liquid measure from a calibrated prover to the top of the hatch coaming. The measurement must be marked and permanently sealed, both forward and aft, in the hold, in the most practicable manner, while the boat is afloat.
- **Notification of broken seals.** The boat owner shall immediately notify the State Sealer of Weights and Measures of any alteration or the breaking of any seal.
- **Certification to commissioner.** After measuring and sealing each boat, the State Sealer of Weights and Measures shall certify to the commissioner the name of the owner and the name and capacity of each boat.

(Note: 1 hogshead = 17.5 bushels = 1,225 pounds)

1.4.2.2 Background – Europe

All E.U. and Norwegian-registered fishing vessels that carry their catch in refrigerated sea water (RSW) tanks are required to carry on-board calibrated volume tables for all of the fish tanks on the vessel. Those calibration tables must be checked and stamped by the member state under whose flag the vessel operates. The calibration tables are normally produced by the marine architect when the vessel is in the final stages of building; this will then be certified by inspectors

from the fishery control of that state. In the case of a second-hand or converted vessel coming into the fishery, all the fish tanks have to be measured separately and calibrated by a competent marine architect, and again verified by an inspector.

The calibration system works by measuring the entire volume of the tank to get its cubic capacity. The tank is then measured at 10 cm increments, and this is scaled from the floor up to the edge of the hatch.

To actually measure the volume of fish in the tank, the fishery officer drops a small, flat steel weight about six inches square, connected to the end of a regular tape. When the weight falls through the water and settles on the fish, the officer then checks off the measurement against the hatch top. With this measurement, the officer can go to the calibration book for the vessel and calculate the cubic volume of fish in the tank. This process is then repeated on all the other tanks that contain fish, and the total cubic volume is calculated.

Because a cubic meter of fish does not equal a ton of fish, it was agreed with all control agencies in Europe and Norway that the following volume calculation values should be used:

- Herring per cm2 x 0.82 (i.e., 100 cm2 = 82 tons of herring)
- Mackerel per cm2 x 0.78 (i.e., 100 cm2 = 78 tons of mackerel)

Comment [lls6]: Need more information – not clear how these conversion factors were derived and if they are appropriate

This system has been in place for over 20 years and has been tried and tested many times, with total catches monitored and weighed in controlled conditions. It was always found to have an accuracy of between two and seven percent, depending on how accurate the person was when measuring. The vessels were originally allowed a discrepancy of 20% in what they declared and what the final result was, but this was found to be unnecessary. The discrepancy is now reduced to 10%, and both fishermen and control agencies feel comfortable working with this level.

1.4.3 Option: Require Certification of Dealer Trucks/Transport Vehicles

This measure would require that herring dealers certify the capacity of their trucks/transport vehicles to obtain a more accurate estimate of catch.

As a condition of obtaining a Federal dealer permit for Atlantic herring, dealers would be required to contract a surveyor to certify bait/transport trucks that are used during offload operations. A truck is often estimated to hold about 40,000 lbs. (18 mt), but this can range from 25,000 lbs. to 60,000 lbs. Schematics and conversion charts, when necessary, would be submitted to NMFS at the time of renewal of the Federal dealer permit. NMFS would provide the schematics and conversion charts the party responsible for certifying the catch (see XXX below). Only trucks that are certified for volumetric capacity could be used to offload and transport Atlantic herring.

1.4.4 Option: Require Flow Scales on Herring Vessels

This measure would require flow scales on herring limited access vessels. The intent would be to rely on independently-verifiable weights from certified scales (or an approved volumetric proxies) instead of catch estimates made by captains and dealers.

The tools, called flow scales or hopper scales, are specially designed to deliver an accurate weight for total landings in a fishery which pumps the fish from one place to another. These scales do not slow down or otherwise interfere with the offload process for the vessels or processors. Regulations mandating the installation, maintenance, and use of approved scales or other weighing techniques which can be verified by a shore-based observer for all pelagic fishery offloads forms the first key component of this measure.

1.4.5 Option: CMCP

This option would allow herring vessels to specify how they will standardize/certify their herring catch through the Catch Monitoring and Control Plan (CMCP). See Section 1.10 of this document for options related to CMCP requirements.

Some methods that may provide certified actual weights include truck scales or certified volumetric estimates based on vessel fish hold surveys and calibrated measuring techniques. The industry will choose from a range of options for providing a verifiable independent estimate of catch weight, including "sticking" a calibrated fish hold or truck, and it will be up to them to choose their preferred techniques. Under this option, the approach will be specified in the CMCPs.

1.4.6 Options for Verifying Weight of Landings

This option would require independent verification of landed catch weights to meet a Council-established target level of precision for overall catch (*e.g.*, a 90 or 95 percent confidence interval). Vessels would utilize volumetric catch weights, or other authorized method, to report final landed weight in the VTR. Independent catch weighing would be conducted by (select from the following list):

- Observers (on observed trips);
- Port Agents/Sea Samplers (in ports where NMFS agents are stationed)
- State agents (such as state agents participating in dockside sampling programs)
- State, Federal, or other certified dockside monitors/samplers

Note: The objective to confirm the accuracy of self-reporting could be accomplished by extending the current role of dockside monitors/samplers to include the verification of landings because the samplers need this information anyway to determine how to best sample the offload. If a dockside monitoring program (DMP) is established (Section 1.8 of this document), these dockside catch-weighing measures could be subsumed as part of that program. The intent, however, is that this be a standalone requirement to improve accuracy of landed catch throughout the fishery, including sectors of the fishery for which full dockside monitoring is limited or where coverage is less than optimal.

- When sub-sampling, dockside monitors would use the certified volumetric capacity estimates to derive the total volume of the offload, which can then be converted to weight and used to determine the time intervals for sub-sampling.
- For every landings event that is sampled by a dockside monitor, there would be several estimates of herring landings: IVR reports (captains' hail weights), VTRs, dealer reports, and dockside sampler estimates. These data sources can be cross-checked by NOAA Fisheries to confirm the accuracy of self-reporting.

This program will utilize independent private contractor(s) to coordinate dockside sampler deployment and summarize, enter, and review data associated with the program. Data will be recorded by dockside samplers and submitted to NOAA Fisheries (see example data forms). NOAA Fisheries will cross-check the DMP data with dealer and VTR reports to confirm the accuracy of self-reporting, and bycatch estimates will be compared to those derived through at-sea monitoring.

1.5 MEASURES TO ADDRESS MAXIMIZED RETENTION

The measures described in this section are intended to ensure maximized retention of catch on herring vessels, to the extent possible. If any of these options are selected, herring vessels would be required to land all fish that are caught during their fishing operations, subject to the provisions described below, and discarding of the species identified for maximized retention would be largely prohibited.

1.5.1 No Action Option

Under the no action option, no provisions would be implemented in Amendment 5 to establish maximized retention in the herring fishery. Herring vessels would continue to operate under the regulations and possession limits for any fisheries for which they possess permits.

1.5.2 Options: Species to Which Maximized Retention Applies

1.5.2.1 Option: Maximized Retention of All Species

Under this option, the vast majority of catch of all species on vessels subject to maximized retention provisions would be landed (exceptions described below), and discarding at-sea would be prohibited.

Two Categories of Prohibited Species (not to be landed):

- Species protected under the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA), or subject to similar prohibitions, would not be landed under any circumstances.
- Species for which vessels are not permitted to land or species that are subject to landings limits may be addressed through a series of options (see following subsections for a description of options to address non-permitted landings).

1.5.2.2 Option: Species-Based Maximized Retention

Under this option, the Council will select the species to which maximized retention provisions will apply from the following list (discarding of the species selected for maximized retention would be largely prohibited):

- Atlantic Herring;
- Atlantic Mackerel;
- Haddock;
- Other Large-Mesh Regulated Groundfish - Atlantic cod, witch flounder, American plaice, yellowtail flounder, pollock, winter flounder, windowpane flounder, redfish, white hake;
- Small-Mesh Groundfish – silver hake (whiting), offshore hake, red hake;
- Loligo Squid;
- Illex Squid;
- Highly Migratory Species (Atlantic tunas, Atlantic billfish, Atlantic sharks, and Atlantic swordfish);
- Monkfish;
- River Herring;
- Shad; and
- Other ASMFC-managed species (which ones?)

Comment [lls7]: Need to identify species

Two Categories of Prohibited Species (not to be landed):

- Species protected under the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA), or subject to similar prohibitions, would not be landed under any circumstances.
- Species for which vessels are not permitted to land or species that are subject to landings limits may be addressed through a series of options (see Section 1.5.3 below for a description of options to address non-permitted landings).

1.5.3 Options for Addressing Non-Permitted and Unmarketable Landings

Maximized retention provisions would likely require the landing of certain species for which herring vessels have landing limits or are not currently permitted to land at all. This section describes options under consideration to address this challenge, as well as some options to address the disposition of the non-permitted landings.

1.5.3.1 Option: Amend Other FMPs and Regulations to Allow Landings

Under this option, a number of other Fishery Management Plans would be amended to modify limits or prohibitions which might affect herring vessels attempting to participate in a maximized retention program. For instance, the Multispecies FMP would need to be amended to change landings limits for all other groundfish species except haddock, which has a separate, fishery-

wide cap. Jurisdictional overlap may occur for species managed by the Atlantic States Marine Fisheries Commission (ASMFC), and ASMFC plans might need to be amended.

In order to be effective in a timely fashion, work on these amendments would likely need to begin concurrent to the development of Amendment 5. Thus a necessary precursor to this option might need to be a very early Council decision to pursue development of a maximized retention program so that the cross-fishery regulatory infrastructure could be built. Impact on these other species would clearly need to be capped at biologically and economically appropriate levels, thus there is a related option which would set bycatch caps on all species for the herring fishery.

Comment [lls8]: This language was carried over from the previous Am 5 discussion document. Not sure how to address this.

1.5.3.2 Option: Annual Issuance of Exempted Fishing Permits

Comment [lls9]: NERO comment - the Amendment would have to be very explicit about how the results of an EFP-based starter program would be temporarily implemented, how the results of this program would be quantified, and how they would be incorporated into amendments to other FMPs once the trial period ends.

Under this option, the maximized retention program would operate under an Exempted Fishing Permit (EFP) issued by the Sustainable Fisheries Division (SFD) at NERO on an annual basis. Vessels would apply annually and NMFS would issue EFPs provided all program participation requirements were met and program elements were in place. The EFP would provide the regulatory relief necessary to allow the currently non-permitted landings to take place. The EFP process would provide time to evaluate the composition of catch on herring vessels under maximized retention provisions and amend the appropriate FMPs in order to implement the maximized retention provisions permanently.

Discussion

The maximized retention program in the Pacific Council's shore-based hake fishery currently operates under an EFP, as it has for approximately seven years, although this fishery is fairly far along in the process of transitioning to a fully-approved program without annual EFPs.

1.5.3.3 Option: Modified Maximized Retention: Use VBEM to Monitor Minimal At-Sea Discards

Under this option, modifications to the at-sea components of a CMCP would specify that any at-sea discards must be disposed of through a designated discard chute with monitoring through an additional camera close enough in range to distinguish species. The wide-angle deck-wide and rail-area cameras would essentially identify pre-sorting as they would under the maximized retention measures, and imagery analysis would be conducted to confirm that the pre-sorted piece count observed matched the piece count sent through the discard chute one at a time. Additional imagery analysis would be conducted to identify each discarded animal to its species and estimate its size and weight based on the high-quality look at it the closed circuit television (CCTV) cameras will be afforded as the animal passes through the discard chute.

Comment [lls10]: Observer Program comment – unsure whether this is feasible for all herring vessels

This option could potentially be applied for specific species for which no regulatory relief is possible. It may also be necessary to implement this option for certain prohibited species, for instance marine mammals or birds.

1.5.3.4 Options to Address Disposition of Non-Permitted/Unmarketable Catch

Several options are under consideration to address the treatment of non-permitted, non-authorized, and/or unmarketable catch. Additional options address whether or not such fish landed outside current regulations could be sold, and, if so, how the revenues could be utilized.

Option: Allow landing of non-permitted catch, including in excess of current trip limits, with such landings subject to appropriate caps;

Option: Allow landing of non-permitted catch, including in excess of current trip limits, without caps

Comment [lls11]: *This section is unclear and needs more development. Not sure what the caps are (landings caps? In addition to slippage or discard caps?)*

What happens if these caps are achieved?

NOTE FOR COMMITTEE: Options to address unmarketable catch are not specified yet:

- Who is responsible for the unmarketable catch once it's landed?
- Can non-permitted fish be sold if they are marketable? If so, by whom? What happens to the profits from sale?
- What happens to unmarketable fish? Should it be sent back out to sea for disposal? If so, who counts/documents it first? Would NMFS enforcement be required to inspect unmarketable catch?

1.5.4 Options for Verifying Compliance with Maximized Retention Provisions

1.5.4.1 Option: 100% Verification by At-Sea Observers

Under this option, maximized retention would be verified by at-sea observers at a rate of 100%. At-sea observers would certify compliance with maximized retention requirements and sample any at-sea discards that did take place, but the vast majority of catch sampling would be done dockside, as would the certified weighing or certified volumetric estimation of landed weight.

1.5.4.2 Option: Video-Based Electronic Monitoring (VBEM)

Herring vessels would be required to install video-based electronic monitoring systems to ensure compliance with maximized retention provisions.

- Mandatory Verification of Compliance with Maximized Retention Requirements
    - At-sea component of vessel-designed Catch Monitoring and Control Plan (CMCP) will be required to outline procedures for the installation and operation of a Video-Based Electronic Monitoring (VBEM) system.
    - CMCP must include detailed procedures to demonstrate the absence of pre-sorting, including demonstration that the codend is empty after each haul and that no fish were slipped from the codend while the codend was in the water (see Section XXX for a description of options to address slippage).

This option relates to both verifying compliance with maximized retention and ensuring the collection and availability of data on a real-time basis. Shore-based observers will certify and report the weight and species composition of each landing within 24 hours of its conclusion, providing real time data. Analysts will compile, audit, and summarize the data produced under this program, quickly generating hard numbers on landed catch and bycatch of all species. VBEM data will be checked subsequently to reconcile landings against fishing activity to verify compliance with maximized retention requirements.

Specification of Procedures for Centralized Analysis and Reporting

- Shore-based observers will submit certified landings reports to relevant supervisory entity (state/Federal agency or certified vendor).
- Supervisory entity will submit landings summary reports to the Fisheries Statistics Office (FSO) at the NMFS Northeast Regional Office (NERO) and the VBEM analysis vendor.
- FSO undertakes the same tasks they currently perform, only with higher-quality and more timely data than they currently use. Specifically, FSO tallies landings reports, including reconciliation against Dealer Electronic Reporting (DER) and vessel reporting, and produces summarized landings reports for all species which are publicly available. For quota and bycatch cap monitoring purposes, landings are assumed to equal catch until and unless analysis of VBEM data shows that a discard event has occurred, at which point catch estimates would be revised. Existing vessel and dealer self-reporting and Northeast Fisheries Observer Program (NEFOP) data may be used as a backup until and unless they are discontinued if and when they are demonstrated to be unnecessary.
- VBEM field service vendor collects VBEM data from vessels, performs system operation checks to verify that no data gaps are evident, which might indicate non-compliance or mask a discard event, and provides data including imagery to VBEM analysis vendor.
- VBEM field service vendor also performs maintenance and outreach services to assist vessels in ensuring continuous high-quality VBEM system operation.
- VBEM analysis vendor reconciles VBEM dataset with landings summary reports to certify compliance with maximized retention and provides a summary report to FSO.

1.5.4.3 Option: Hybrid Option

Under this option, a combination of VBEM and monitoring by at-sea observers would be used to verify maximized retention. Potential sub-options could include allowing industry to choose which verification vector to employ. The vessels' plan would be described in the CMCP and approved by NMFS.

1.5.4.4 Option: <100% Verification Coverage

Under this option, verification of maximized retention would not occur 100% of the time, and self-reporting would be relied upon for assurances that landed weight is equal to catch.

1.5.4.5 Option: Maximized Retention Techniques Addressed Through CMCP

Under this option, vessels would have the flexibility to design their own plans for demonstrating compliance with maximized retention provisions. The vessels' plan would be described in the CMCP and approved by NMFS.

1.5.4.6 Option: Maximized Retention Techniques Developed in Amendment 5

Under this option, the Council would develop standards and management measures to ensure compliance with maximized retention provisions. These standards would be implemented in Amendment 5 and would apply to all Category A and B vessels.

1.5.4.7 Option(s): Establish Slippage Caps

XXX

Option: Apply assumed slippage event tonnage against at-sea discard cap

Under this option, an assumed tonnage for each detected or suspected/inferred slippage event would be applied against an overall tonnage cap on at-sea discards in the fishery. The assumed amount would be set at the current best estimate for the average tow in the fishery (approximately 65 tons). The total at-sea discard cap would be set at a percentage of the TAC in the fishery, depending on the goals of the maximized retention program.

Option: Apply estimated slippage event tonnage against slippage cap

Under this option, an estimated tonnage for each detected slippage event would be applied against an overall tonnage cap on at-sea discards in the fishery. The estimated amount would be based on an independent measure of the total weight of the slipped discards. Captain's estimates would not be accepted. Therefore, this option would only be practical in cases in which the VBEM dataset provided a clear and acceptable estimate of weight, or in which the vessel had additional EM technology such as catch-weight sensors in the CMCP, or in which an at-sea observer happened to be aboard. The total at-sea discard cap would be set at a percentage of the TAC in the fishery, depending on the goals of the maximized retention program. Suspected/inferred slippage or discard events would still be subject to the assumed tonnage application because by definition, no actual data would exist for these events.

Option: Apply assumed slippage event tonnage against species specific bycatch caps

Under this option, an assumed tonnage for each detected or suspected/inferred slippage event would be applied against all target species quotas and against individual tonnage caps on all bycatch species in the fishery. The assumed amount would be set at the current best estimate for the average tow in the fishery. Individual species quotas would be set at biologically-appropriate levels for each species and in consideration of economic and other concerns of all other fisheries targeting those species. The multiple-jeopardy nature of this approach could be severe, but desirable in that it will have a strong likelihood of success at achieving the desired result of eliminating slippage and undetected at-sea discard events.

Option: Apply estimated slippage event tonnage against species specific bycatch caps

Under this option, an estimated tonnage for each detected slippage event would be applied against all target species quotas and against individual tonnage caps on all bycatch species in the fishery. The estimated amount would be based on some independent measure of the total weight of the slipped discards. Captain's estimates would not be accepted. Therefore, this option would only be practical in cases in which the VBEM dataset provided a clear and acceptable estimate of weight, or in which the vessel had additional EM technology such as catch-weight sensors in the CMCP, or in which an at-sea observer happened to be aboard. Individual species quotas would be set at biologically-appropriate levels for each species and in consideration of economic and other concerns of all other fisheries targeting those species. The multiple-jeopardy nature of this approach could be severe, but desirable in that it will have a strong likelihood of success at achieving the desired result of eliminating slippage and undetected at-sea discard events. Suspected/inferred slippage or discard events would still be subject to the assumed tonnage application because by definition, no actual data would exist for these events.

1.5.4.8 Option: Consequences of Quota or Bycatch Cap Overages

Under this option, if an at-sea discard caused an overage, or an at-sea discard event is suspected/inferred based on VBEM data or absence of data, and the event is known or suspected to have caused resulted in a quota or bycatch cap overage, the offending vessel would be suspended from the herring fishery for the following fishing year, and all other vessels would be forced to pay back the overage. The offending vessel also would be forced to carry an at-sea observer at its own expense, in addition to participating in the maximized retention and dockside monitoring program under the proposed action, for an additional probationary year.

Comment [lls12]: May be more appropriate under Section 1.5.4.7…appears to relate to the slippage caps. Not sure if bycatch caps and slippage caps are the same…also not sure if/how they relate to the caps proposed in Section 1.5.3.4.

Comment [lls13]: NERO comment – this option may not be legally feasible.

Discussion

In addition to the schedule of penalties and violations that are specific to a failure to adequately demonstrate that no catch was slipped on every haul (i.e. demonstrate compliance with maximized retention requirements, described above), a schedule of general penalties should be created to discourage non-compliance with the overall catch monitoring program, including such violations as failure to adhere to the provisions of a CMCP, fishing without an operational VBEM system, failure to cooperate with a shore-based observer, etc..

1.5.5 Maximized Retention: Phase-In Options

A number of options are under consideration to phase-in maximized retention provisions for Atlantic herring vessels.

Comment [lls14]: NERO comment – the phase-in of these measures would need to be clearly described and hardwired into the Amendment. More detail is required.

1.5.5.1 Option: Temporal Phase-In

This option would implement a temporal phase-in of maximized retention provisions over two to four years, which includes a gradual but steady reduction in the amount of at-sea discarding that is permitted as well as a reduction in the slippage cap (if one is established).

1.5.5.2 Option: Spatial Phase-In

This option would implement a spatial phase-in of maximized retention provisions in which bycatch "hotspots" (for example, areas with river herring bycatch or groundfish closed areas) would require maximized retention. Areas could be added/modified as additional data become available.

1.5.5.3 Option: VBEM Phase-In

This option would implement a gradual phase-in of Video Based Electronic Monitoring (VBEM) as the verification system for maximized retention through pilot programs. It will be important to provide overlapping coverage with Federal observers on pilot fishing trips to ensure robust monitoring during the phase-in period while herring fishermen dial-in VBEM.

1.6 MEASURES TO MAXIMIZE SAMPLING AND ADDRESS NET SLIPPAGE

The intent of these measures is to develop protocols to address net slippage (the dumping of catch directly from the codend without it being brought on board) and maximize sampling by at-sea observers. Accommodation should be made to allow slippage to occur for legitimate safety reasons, so the challenge is to minimize and mitigate it. If VBEM is utilized, a further challenge may be to devise net-handling techniques to assure that slippage does not occur and demonstrate this fact adequately such that the VBEM can verify the absence/minimization of slippage.

1.6.1 No Action Option

Under the no action option, no provisions would be implemented in Amendment 5 to maximize sampling or address net slippage.

1.6.2 Options to Maximize Sampling

Comment [lls15]: These options were carried over from the alternative that included maximized retention. Need to clarify how these options would apply – may be more appropriate to consider as part of the maximized retention options?

1.6.2.1 Option: Interruption Prohibition

Under this option, removal of the pump from the codend once pumping has been initiated would be prohibited unless the vessel was able to lift the net from the water and demonstrate in a visible way that the codend was either empty or was re-pursed before being placed back in the water.

1.6.2.2 Option: Codend Lifting

Under this option, the vessel would be required to lift the codend from the water to visibly demonstrate that it was empty prior to re-setting the net.

1.6.2.3 Option: Bring Codend Aboard

Under this option, the vessel would be required to bring the codend aboard the vessel to visibly demonstrate that it is empty or that the catch remaining in the net was removed to the deck and either retained or visibly discarded.

1.6.2.4 Option: CMCP

This option would require vessel operators to specify how their operation will ensure maximized sampling of catch in their catch monitoring and control plan (CMCP, see Section 1.10).

1.6.2.5 Options to Maximize Sampling by At-Sea Observers

The Council is considering the following options to maximize sampling of catch by at-sea observers. Any one or any combination of the following options could be selected to improve at-sea catch sampling.

Option: Require vessel operators to provide accurate details to the observer why a bag may be partially pumped and fish released (similar to option for affidavit)

Vessel operators could be required to provide information about whether a bag was partially/fully slipped, the reason for the slippage, and the estimated weight of fish that were released.

Option: Require vessel operators to provide observers notice when pumping may be starting and when to allow sampling of the catch, and when pumping is coming to an end

Option: When observers are deployed on herring trips involving more than one vessel, require observers on any vessel taking on fish where/when possible

Option: In pair trawl operations, require additional communication between the boats if fish are being pumped to both vessels with to keep the observer informed of catch

Option: Require a flow scale on a processing vessel since there is no other method to estimate volume of catch

Option: Requirement that observers be allowed to view the codend after pumping has ended, before the pump is removed

Option: Determine (and apply) minimum portion of a slipped catch that would be required to be pumped on board a vessel to ensure complete sampling

This measure requires that a minimum portion of a slipped catch be determined to ensure that observers obtain statistically-valid samples to characterize the catch composition (species and amounts) of slipped tows. The Herring PDT will work with the Observer Program and NEFSC scientists to develop the details of this measure. If a minimum portion/threshold can be determined, this measure will require sampling at that level for any slipped tows.

Comment [lls16]: Details of this measure TBD; measure to be added to options to improve at-sea monitoring

Option: Require that all fish must be at least pumped aboard the boat so that the entire catch can be sampled by an observer

Comment [lls17]: Motion regarding this measure was tabled by the Herring Committee June 4/5, 2009

This option is based on provisions for midwater trawl vessel access to Closed Area I, effective November 2, 2009 with an additional collection-of-information requirement effective on March 5, 2010. Under this option, the following provisions would apply to herring vessels carrying an observer on board (for any trip with an observer):

- Vessels would be required to pump aboard all fish from the net for inspection and sampling by the observer. Vessels would be prohibited from releasing fish unless specific conditions are met (see below).
- Except as indicated below, vessels would be prohibited from discarding at-sea unless the fish have been brought aboard and made available for sampling by the observer.
- Fish that have not been pumped aboard may be released if the vessel operator finds that (1) pumping the catch could compromise the safety of the vessel; (2) mechanical failure precludes bringing some or all of the catch aboard the vessel; or (3) spiny dogfish have clogged the pump and consequently prevent pumping of the rest of the catch.
- If the net is released for any of the reasons stated above, the vessel operator must complete and sign a Midwater Trawl Released Codend Affidavit providing information about where, when, and why the net was released, as well as a good-faith estimate of the total weight of fish caught on the tow and weight of fish released. The Midwater Trawl Released Codend Affidavit must be submitted within 48 hours of completion of the fishing trip.

1.6.3 Options to Address Net Slippage

1.6.3.1 Option: Require Midwater Trawl Released Codend Affidavit for Slippage Events

Comment [lls18]: This language is slightly different than the provisions for Closed Area I (above) and includes a requirement for photographs to be taken when an observer is on board. This requirement would also apply when observers are not on board.

This option requires that a Midwater Trawl Released Codend Affidavit be created for slippage/dumping events, to be signed by vessel operators under penalty of perjury. The Midwater Trawl Released Codend Affidavit will contain detailed information including (1) the reason for slippage; (2) an estimate of the quantity and species composition of the slipped fish; and (3) the location and time that the slippage event occurred. When an observer is present on the vessel during a slippage event, the event would be fully documented with photographs.

Discussion: The proposed affidavit would be required in addition to VTRs because VTRs do not include requirements to provide detailed information slippage events. The affidavit would facilitate the collection of more information about slippage events and would require captains to report the events individually when they occur (versus reporting total discards on VTRs at a trip-level).

1.6.3.2 Option: Trip Termination

This measure would require a vessel to terminate its trip and return to port in the event that slippage occurs.

1.6.3.3 Option: CMCP

This option would require vessel operators to specify how their operation will address and account for slippage events in their catch monitoring and control plan (CMCP).

1.7 AT-SEA MONITORING PROGRAM

1.7.1 Background

One of the most important elements of an at-sea monitoring program, and one of the initial decisions that must be made, concerns the goals and objectives of the program – specifically:

- What are the observers going to measure? (catch/bycatch, species, gear types, etc.)
- What are the priorities?
- Should observer data be used to estimate bycatch of species x across the entire fishery or gear type? If so, what is the level of precision that should be achieved by using observer data to estimate bycatch?

Example Approach – Preliminary Analysis

A statistical approach to determining the appropriate level of observer coverage in a fishery would to (1) set a goal (usually based on precision and expressed as a *coefficient of variation*, CV) and then (2) use existing information to determine the level of coverage needed to achieve the goal. A CV is a normalized measure of dispersion of a probability distribution. The CV is generally defined as the ratio of the standard deviation to the mean.

As part of the development of the omnibus amendment to address standardized bycatch reporting methodology (SBRM), the National Working Group on Bycatch (NWGB) concluded that, "*for fishery resources, excluding protected species, caught as bycatch in a fishery, the recommended precision goal is a 20-30% CV for estimates of total discards (aggregated over all species) for the fishery; or if total catch cannot be divided into discards and retained catch then the goal is a 20-30% CV for estimates of total catch.*" (NMFS 2004) As the NWGB pointed out, "Ideally, standards of precision would be based on the benefits and costs of increasing precision" (NMFS 2004). They also noted that under some circumstances, attaining the precision goal alone would not be an efficient use of the public resources. **The tradeoffs associated with increasing precision to meet a specified goal are very important to understand when developing an observer program**.

To begin to explore this issue relative to catch monitoring in Amendment 5, the Herring PDT provided a *example approach* to determining levels of observer coverage necessary to meet a specific goal. The following exercise was conducted by the Herring PDT using existing observer data for two years during which there was more observer coverage of these two gear types (2004 and 2005), combined with the methodology and formulas specified by the SBRM amendment to calculate variance and to estimate the number of trips necessary to achieve certain levels of precision.

Table 2 and Table 3 illustrate how the SBRM methodology can be used to develop a statistical approach to sampling the herring fishery to meet a specific goal – in this example, the goal is estimating river herring bycatch on midwater trawl and pair trawl vessels with a certain level of precision (as expressed by the CV). Observer records for midwater trawl and pair trawl vessels during 2004 and 2005 were used to generate discard/kept ratios of river herring/total herring. These ratios were used in formulas specified by the SBRM amendment to first calculate variance, and then determine, based on available information, how many sea days/observer trips would be necessary to achieve that level of precision. This exercise highlights a few key points with respect to designing an observer program:

- There are costs associated with increasing precision of bycatch estimates resulting from observer data. The lower the CV, the higher the precision, and the more sea days/observer trips are required to achieve that level of precision.
- When discard/kept ratios are small (see 2004 single midwater trawl D/K ratio in Table 3, for example), observed bycatch events are rare, so capturing these events in the future will require more coverage. These tradeoffs must be thoroughly explored when designing an appropriate observer program and prioritizing available resources.
- The D/K ratios, and therefore the target number of sea days and percent coverage, will vary by species and by gear type. The example provided in Table 2 and Table 3 characterizes the statistical approach that can be taken to evaluate levels of coverage and identify priorities, but the specific formulas must be applied to each species and gear type individually when designing a program. Ultimately, a statistically-sound program should be developed based on both the top priorities for coverage and the resources that will be available to support it.

Table 2 Example Approach to Determining Appropriate Levels of Observer Coverage – Based on 2005 Bycatch Data for River Herring

PAIR TRAWL (2005) D/K = 0.031787			
Target Coefficient of Variation (CV)	**Target No. Trips**	**Target No. Sea Days**	**Target % Coverage (of total trips)**
10%	91.82	137.73	35.18
20%	31.18	46.77	11.95
30%	14.84	22.27	5.69
40%	8.56	12.84	3.28
50%	5.55	8.32	2.12
MIDWATER TRAWL (2005) D/K = 0.074375			
Target Coefficient of Variation (CV)	**Target No. Trips**	**Target No. Sea Days**	**Target % Coverage (of total trips)**
10%	159.00	238.51	30.52
20%	51.55	77.33	9.89
30%	24.24	36.37	4.65
40%	13.92	20.88	2.67
50%	9.00	13.49	1.73

Table 3 Example Approach to Determining Appropriate Levels of Observer Coverage – Based on 2004 Bycatch Data for River Herring

PAIR TRAWL (2004) D/K = 0.0343432			
Target Coefficient of Variation (CV)	**Target No. Trips**	**Target No. Sea Days**	**Target % Coverage (of total trips)**
10%	112.73	169.09	12.64
20%	31.13	46.70	3.49
30%	14.11	21.17	1.58
40%	7.99	11.99	0.90
50%	5.13	7.70	0.58
MIDWATER TRAWL (2004) D/K = 0.000016933			
Target Coefficient of Variation (CV)	**Target No. Trips**	**Target No. Sea Days**	**Target % Coverage (of total trips)**
10%	153.69	230.53	67.41
20%	77.71	116.56	34.08
30%	42.60	63.90	18.69
40%	26.10	39.15	11.45
50%	17.42	26.13	7.64

1.7.2 No Action Option

XXX

1.7.3 Options: Observer Coverage Levels

1.7.3.1 Option: 100% Observer Coverage

Under this option, at-sea observers would be required on every trip taken by limited access herring vessels unless they are declared out of the herring fishery.

1.7.3.2 Option: Observer Coverage Levels Based on SBRM

This measure would require NMFS to increase observer coverage in the Atlantic herring fishery to levels required by the Standardized Bycatch Reporting Methodology (SBRM) amendment.

As established by the Standard Bycatch Reporting Methodology (SBRM) omnibus amendments (NEFMC 2007; NMFS 2008), the Councils and public are provided an opportunity to consider and provide input into decisions regarding prioritization of at-sea observer coverage allocations if the expected resources necessary may not be available to achieve CV-based performance goals. In any year in which external operational constraints would prevent NMFS from fully implementing the required at-sea observer coverage levels, the Regional Administrator and Science and Research Director will consult with the Councils to determine the most appropriate prioritization for how the available resources should be allocated. If re-prioritization is undertaken, the re-prioritized sea day allocations will be summarized in a subsequent document.

The analytical basis for allocation of future sea day coverage rests on a target level of precision (i.e., 30% CV) and an expectation that the pattern of fishing activity observed in the prior year will be similar to the next year. Fishing activity by fleets often changes in response to patterns of stock abundance, weather, and fishery regulations. The SBRM is designed to adapt to these changing circumstances. As specified in the SBRM Omnibus Amendment, when a shortfall occurs, a prioritized sea day allocation is made. This allocation uses a combination of statistical methods and ad-hoc methods to assign sea days while keeping within the funded constraints.

Under this option, at-sea monitoring for the herring fishery would be prioritized by NMFS in such a way that the necessary levels of coverage could be achieved regardless of other considerations.

1.7.3.3 Option: Observer Coverage Levels Based on Council Priorities

This measure would require levels of observer coverage designed to achieve the priorities identified by the New England Fishery Management Council: a **30% CV on catch/bycatch estimates for Atlantic herring and haddock, and a 20% CV on catch/bycatch estimates for river herring.**

Discussion/Example

The Council emphasized the need to be practical when determining an appropriate sampling design for at-sea monitoring, especially given available resources. When designing the sampling program, priority should be given to the species of greatest concern, from a biological perspective. It is acknowledged that all species will be sampled regardless of the priorities, and CVs of 30% or even less may be achieved for many of the other species.

Rather than conduct an analysis based solely on achieving a 20% CV for these species, the Herring PDT re-ran the example above for all three species over a range of desired CVs. This helps to better illustrate the trade-offs associated with the choices that would need to be made, based on goals and priorities for observer coverage as well as available resources. Table 4 and Table 5 summarize the results of this analysis for midwater trawl and pair trawl vessels respectively. The analysis is based on 2005 observer data because 2005 was the year with the most sea sampling (coverage, intensity) in recent years for these gear types. Observer coverage during the 2005 fishing year sampled close to 20% of the herring fishery.

This analysis is intended to give managers an understanding of the level of observer coverage that would likely be necessary to achieve the desired CV for estimating bycatch of herring, river herring, and haddock on midwater trawl and pair trawl vessels. The output (#trips) has been translated to observer sea days using an assumption of 1.5 days per trip. This should help in terms of designing a sampling program that can meet specific goals. Once goals are identified and the number of required sea days is estimated, the next step would be to design a sampling schedule for the fishing year based on current patterns of fishing effort.

The results illustrate the costs that would be associated with covering the fishery to sample "rare" bycatch events adequately enough to estimate bycatch with a CV of 20%. Based on available data, bycatch (discards) of Atlantic herring appear to be somewhat rare in the fishery and would therefore require a very high level of coverage (over 300 sea days) in order to sample enough to estimate the total bycatch with a 20% CV. A similar result is seen for estimating haddock bycatch on pair trawl vessels. The observed discard/kept ratios are low, which means that a high level of sea days would be required to achieve a CV of 20%. Likewise, when a sea day is allocated for the purposes of estimating river herring bycatch, available information suggests that no river herring will be encountered about 75% of the time.

Because this analysis serves as a guideline for decision-making with respect to at-sea monitoring, it is important to remember that the results are dependent on observed discard/kept (D/K) ratios and how the variance around those ratios is estimated. Variance most likely does not carry forward from year to year, especially if management measures affect effort and/or fishing patterns. Also, this approach does not consider the magnitude of mortality of the species in question. The biological impact of bycatch that is occurring in the herring fishery is an important factor to consider when identifying priorities for at-sea monitoring.

Table 4 Designing an Observer Program for Midwater Trawl Vessels– Based on 2005 Bycatch Data for River Herring, Haddock, and Atlantic Herring

Single Midwater Trawl (2005)			
River Herring			
CV	**# trips**	**# sea days**	**% Coverage (trips)**
0.1	159	239	31
0.2	52	77	10
0.3	24	36	5
0.4	14	21	3
0.5	9	13	2
Haddock			
CV	**# trips**	**# sea days**	**% Coverage (trips)**
0.1	157	236	30
0.2	51	76	10
0.3	24	36	5
0.4	14	21	3
0.5	9	13	2
Atlantic Herring			
CV	**# trips**	**# sea days**	**% Coverage (trips)**
0.1	384	575	74
0.2	214	321	41
0.3	123	185	24
0.4	77	116	15
0.5	52	79	10

Table 5 Designing an Observer Program for Pair Trawl Vessels– Based on 2005 Bycatch Data for River Herring, Haddock, and Atlantic Herring

Pair Trawl (2005)			
River Herring			
CV	**# trips**	**# sea days**	**% Coverage (trips)**
0.1	92	138	35
0.2	31	47	12
0.3	15	22	6
0.4	9	13	3
0.5	6	8	2
Haddock			
CV	# trips	# sea days	% Coverage (trips)
0.1	242	364	93
0.2	200	299	76
0.3	154	231	59
0.4	117	176	45
0.5	89	134	34
Atlantic Herring			
CV	# trips	# sea days	% Coverage (trips)
0.1	242	364	93
0.2	200	300	77
0.3	155	232	59
0.4	118	176	45
0.5	90	135	34

1.7.3.4 Option: Achieve Council-identified Priority Target Levels of Precision Using a Combination of At-sea and Dockside Sampling

Comment [lls19]: Not clear how this would work.

XXX

1.7.4 Options to Improve At-Sea Monitoring

Current regulations for vessels carrying NMFS-approved sea samplers/observers on board (Section 648.11(d)) specify that owners/operators of fishing vessels must:

1. Provide accommodations and food that are equivalent to those provided to the crew.
2. Allow the sea sampler/observer access to and use of the vessel's communications equipment and personnel upon request for the transmission and receipt of messages related to the sea sampler's/observer's duties.
3. Provide true vessel locations, by latitude and longitude or loran coordinates, as requested by the observer/sea sampler, and allow the sea sampler/observer access to and use of the vessel's navigation equipment and personnel upon request to determine the vessel's position.
4. Notify the sea sampler/observer in a timely fashion of when fishing operations are to begin and end.

5. Allow for the embarking and debarking of the sea sampler/observer, as specified by the Regional Administrator, ensuring that transfers of observers/sea samplers at sea are accomplished in a safe manner, via small boat or raft, during daylight hours as weather and sea conditions allow, and with the agreement of the sea samplers/ observers involved.
6. Allow the sea sampler/observer free and unobstructed access to the vessel's bridge, working decks, holding bins, weight scales, holds, and any other space used to hold, process, weigh, or store fish.
7. Allow the sea sampler/observer to inspect and copy any the vessel's log, communications log, and records associated with the catch and distribution of fish for that trip.

Additional management measures are being considered in Amendment 5 to enhance regulations pertaining to the current at-sea monitoring program.

1.7.4.1 Option: Requirements for a Safe Sampling Station

This measure would require that vessel operators provide at-sea observers with a safe sampling station adjacent to the fish deck– this may include a safety harness (if footing is compromised and grating systems are high above the deck), a safe method to obtain samples, and a storage space for baskets and sampling gear. Vessels must maintain safe conditions on the vessel for the protection of observers including adherence to all U.S. Coast Guard and other applicable rules, regulations, or statutes pertaining to safe operation of the vessel.

1.7.4.2 Option: Requirements for "Reasonable Assistance"

This measure would require that vessel operators provide at-sea observers with reasonable assistance to enable observers to carry out their duties, including but not limited to obtaining samples and sorted discards.

"Reasonable assistance" could be defined as:

- Measuring decks, codends, and holding bins;
- Collecting bycatch when requested by the observers;
- Collecting and carrying baskets of fish when requested by the observers;

1.8 DOCKSIDE MONITORING PROGRAM (DMP)

Comment [lls20]: Needs more discussion and development.

XXX

1.8.1 Dockside Monitoring Program Objectives

Based on Herring Committee discussion and recommendations, a dockside monitoring program (DMP) is intended to achieve the following objectives:

1. Sample enough landings events to accurately estimate catch/bycatch in the herring fishery (in combination with at-sea monitoring/observer coverage);
2. Confirm the accuracy of self-reporting of herring landings.

In addition, dockside monitors may collect important biological information and commercial catch samples necessary to support stock assessments and other biological needs.

To achieve these objectives, this dockside monitoring program would be designed similarly to the current portside bycatch sampling programs managed by ME DMR and MA DMF with increased sampling coverage to ensure that extrapolations of landings and landed bycatch estimates can be made with some specified degree of precision (expressed as a coefficient of variation, CV). The sampling design and coverage levels for this program (distribution of sampling events across space and time) would be determined by NOAA Fisheries similarly to how the NEFSC allocates sea days for observer coverage in the fishery, depending on the priority species and target CVs that are identified by the Council, or a specific level of coverage identified by the Council (see options for levels of coverage in following subsection).

Staff Note – need to be consistent with terms.

- **Is the goal a dockside monitoring program (DMP, for example, to ensure compliance and ACL counting/monitoring), or is the goal a dockside sampling program (DSP, for example, for bycatch estimation and extrapolation to cross-check quota counting)?**
- **Should both be considered?**
- **What about the term "shore-based observers"?**
- **Need to be consistent with definitions and terminology throughout the document.**

1.8.2 No Action Option

XXX

1.8.3 Dockside Monitoring Program – Sampling Protocols

This measure would require NMFS, in cooperation with the States of Maine and Massachusetts, to establish a uniform and statistically-robust dockside sampling protocol, including standard reporting forms, criteria for sampling (number of samples, methodology, etc), standards for species identification training and data archiving. This will ensure that all information collected

is comparable and rigorous, regardless of whom it is collected by (State, Federal, or other monitors/samplers).

- NOAA Fisheries would be required to determine levels of coverage for dockside monitoring similar to the SBRM approach for at-sea monitoring, based on the Council's specified goals/objectives and the SBRM methodology, or based on a specific level of coverage identified by the Council (see below).
- Because multiple service providers can be used for dockside monitoring, NOAA Fisheries would be responsible for determining the distribution of dockside coverage on an annual basis, including time/area/gear type. This information would be provided to DMP service providers on an annual basis to assist them in developing plans for sampling and ensuring that dockside monitors can be made available at the appropriate times/places.
- Herring limited access vessels would be required to call NOAA Fisheries and notify the agency of a landings event at least six hours prior to landing (see options for notification requirements in Section 1.3.5 of this document). The current pre-landing notification system could be used to provide ample notice to NOAA Fisheries prior to landing, in order to arrange for samplers when they may be available. The vessel must indicate when/where the boat will land, the approximate amount of the catch, and whether or not the offload will be to a processing facility, bait dealer, or truck. NOAA Fisheries will inform the vessel if the landings event requires sampling, and if so, the vessel must contact the DMP service provider. DMP service providers will work with the vessels to ensure that trips that require dockside monitoring are met by a sampler/monitor.

On an annual basis, NOAA Fisheries will supply each approved DMP service provider with the following:

- List of certified vessels and dealers subject to DMP requirements;
- Summary of dockside monitor duties;
- List of relevant NOAA Fisheries contacts;
- Schematics and conversion charts for certified vessels and trucks (if these requirements are implemented, see Section 1.4 of this document);
- Protocols for complete sampling, sub-sampling, and calculating the weight of fish;
- Other relevant protocols and directives.

Sampling methodology will be consistent with NOAA Observer Program protocols, with some modifications to decrease variance in extrapolation of bycatch estimates and reduce potential sampling bias. Due to the large quantities of fish that are typically landed in the herring fishery, sub-sampling will likely be necessary for many offloading events. Sub-sampling is used when the volume of fish that the sampler is attempting to quantify is too large to obtain actual weights or if the amount of bycatch is too abundant. During sub-sampling, the sampler will collect smaller batches of fish, sort and weigh by species, and then extrapolate to the total catch.

In the Atlantic herring fishery, no offload points/events are the same. The methodology described in this section provides some general guidelines and examples for sampling landings events in the herring fishery. NOAA Fisheries should coordinate efforts with DMP service

providers to better determine the most appropriate sampling approaches given the logistical differences in offload points and other complicating factors.

The two fundamental elements necessary for a dockside sampler to know in order to successfully sample a landings event are a volumetric estimate of the total landings and the species composition of the catch. Landings will be either sampled completely or sub-sampled to determine the species composition of the catch (see protocols for complete sampling and sub-sampling below). In most situations, sampling will be conducted over the entire offloading period to capture any stratification that may occur throughout the entire fishing activity (e.g. while being pumped aboard while out at sea, due to the difference in species size and composition between tows, settling in the vessel's holding tanks, etc.). Because the catch is not unloaded the same way at every dealer or plant, sampling techniques may vary (examples are provided below). Typically, samples will be collected systematically at set intervals with predetermined sample sizes. All samples will be sorted by species and actual weights will be taken. Lengths will be taken according to the NOAA Observer Program species priority list by statistical area, and commercial catch samples for assessment purposes will be collected using current protocols.

Complete Sampling Protocol (Processing Plants and Whenever Possible)

A complete sampling protocol can be utilized in cases where the entire offload can be observed and sampled, and all bycatch can be sorted and counted. Complete sampling is desirable for offload events that occur at processing plants. The samplers collect and quantify all landings from individual lots of fish (transported by trucks or vessels) that enter the processing facilities. Samplers position themselves at the point of entry into the facility along an assembly line or at the base of the hoppers where the fish are unloaded. Sampling is conducted before grading or sorting of the catch occurs. All bycatch is removed from the assembly line or hopper and placed in bushel baskets or buckets specific to each species. The total weight of any observed bycatch is recorded along with species identification, total species weight, individual lengths and weights of all fish according to a NOAA Fisheries and ACCSP specified protocol. If there is a large amount of one incidental species, the total weight is recorded and then length frequencies and weight are gathered from a sub-sample of 50-100 individuals.

Sub-Sampling Protocol

A sub-sampling protocol can be utilized when sampling a very large volume of catch and/or when facilities at the offload point make complete sampling impossible. Instances where this is likely to occur include offload points where fish are pumped directly into trucks. Sub-sampling is also appropriate in instances when the volume of fish pumped is greater than the manpower available at the sampling point can observe with certainty. In these cases, it may not be possible to use the complete sampling protocol regardless of the amount inspected (< 80,000 lbs.). These situations are also likely to occur when vessels are fishing mixed groups of herring and mackerel, some of which can have a 50-50 composition.

Sub-samples are to be collected using bushel baskets at timed intervals during the pumping or unloading process following the NOAA Fisheries at-sea observer sampling protocol. To accomplish this type of sub-sampling, the dockside monitor/sampler needs to know the total lot weight and the duration of time it will take to unload the catch. After sampling, the bushel

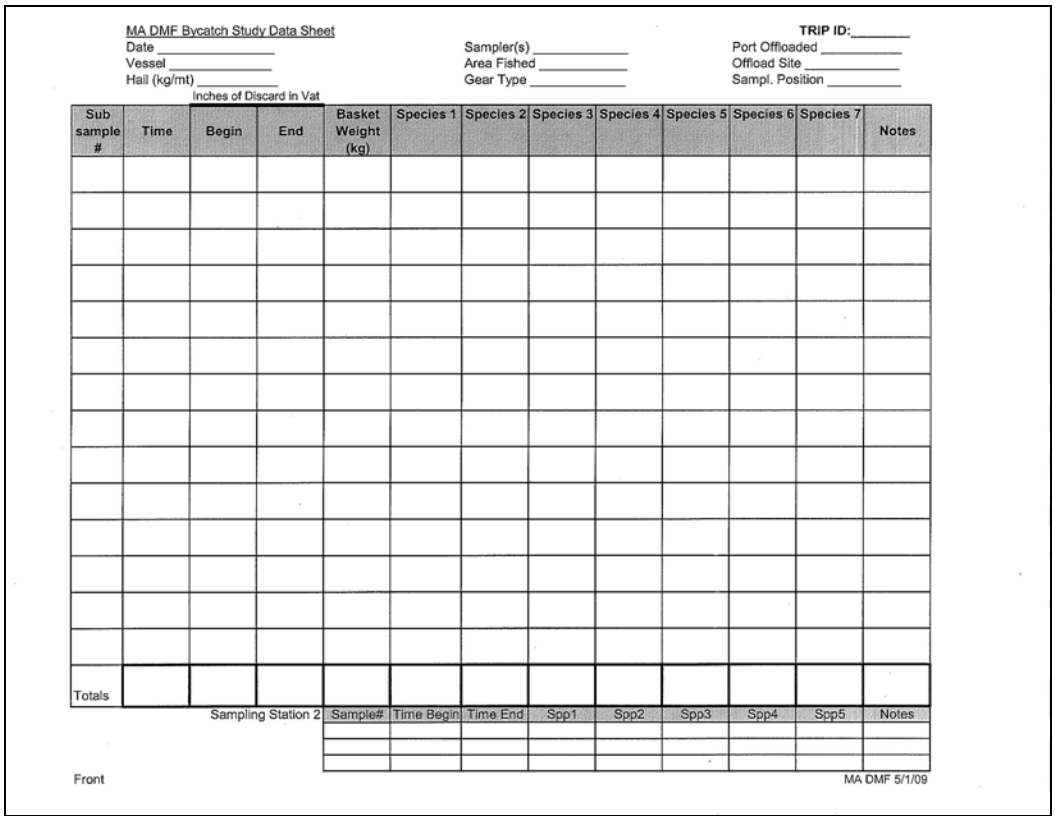
baskets of fish should be sorted by species, and total weight of each species and length frequencies should be recorded (sub sample n=50, for length frequencies if more than fifty of any species occurs).

Sub-Sample Example (Trucks, Bait Dealers)

1. Lot size (determined by the sampler) = 120,000 lbs (3 Trucks)
2. Pumping or unloading time = 3 hours (180 minutes)
3. If a sample basket is to be collected for every 10,000 lbs of fish, then 12 sample baskets need to be collected over the entire pumping or unloading process.
   - 120,000 lbs/10,000 lbs = 12
4. If the entire pumping or unloading process takes an estimated 180 minutes, then a basket sample should be taken every 15 minutes
5. If the catch composition from the bushel baskets is 99% Atlantic Herring, then one can extrapolate that out of the 120,000 lbs unloaded, then 118,800 lbs is Atlantic Herring.
   - 99% Atlantic Herring = 120,000 lbs x 0.99 = 118,800 lbs of Atlantic Herring
6. If the remaining 1% of the catch composition is Atlantic Mackerel, then one can extrapolate that out of the 120,000 lbs unloaded, 1,200 lbs is Atlantic Mackerel.
   - 1% Atlantic Mackerel = 120,000 lbs x 0.01 = 1,200 lbs of Atlantic Mackerel

Data will be recorded on sheets consistent with ME DMR and MA DMF data collection sheets for the existing portside bycatch sampling programs (Figure 1 – Figure 3). The sampling sheet for the processing plant (Figure 1) is designed to collect and record all data needed to comprehensively quantify discards through the field “inches in vat.” Once the discard composition is recorded, along with pump rate and data for “kept” catch, Excel worksheets are used to derive the composition of the landings. Sub-sampling data sheets (Figure 2) are used to sample baskets of unsorted catch at intervals set by the sampler based on the total volume of catch and pump rates.

Figure 1 Example Data Sheet for Processing Plant and Complete Sampling



MA DMF Bycatch Study Data Sheet

Date _____ Sampler(s) _____ TRIP ID:_____

Vessel _____ Area Fished _____ Port Offloaded _____

Hail (kg/mt) _____ Gear Type _____ Offload Site _____

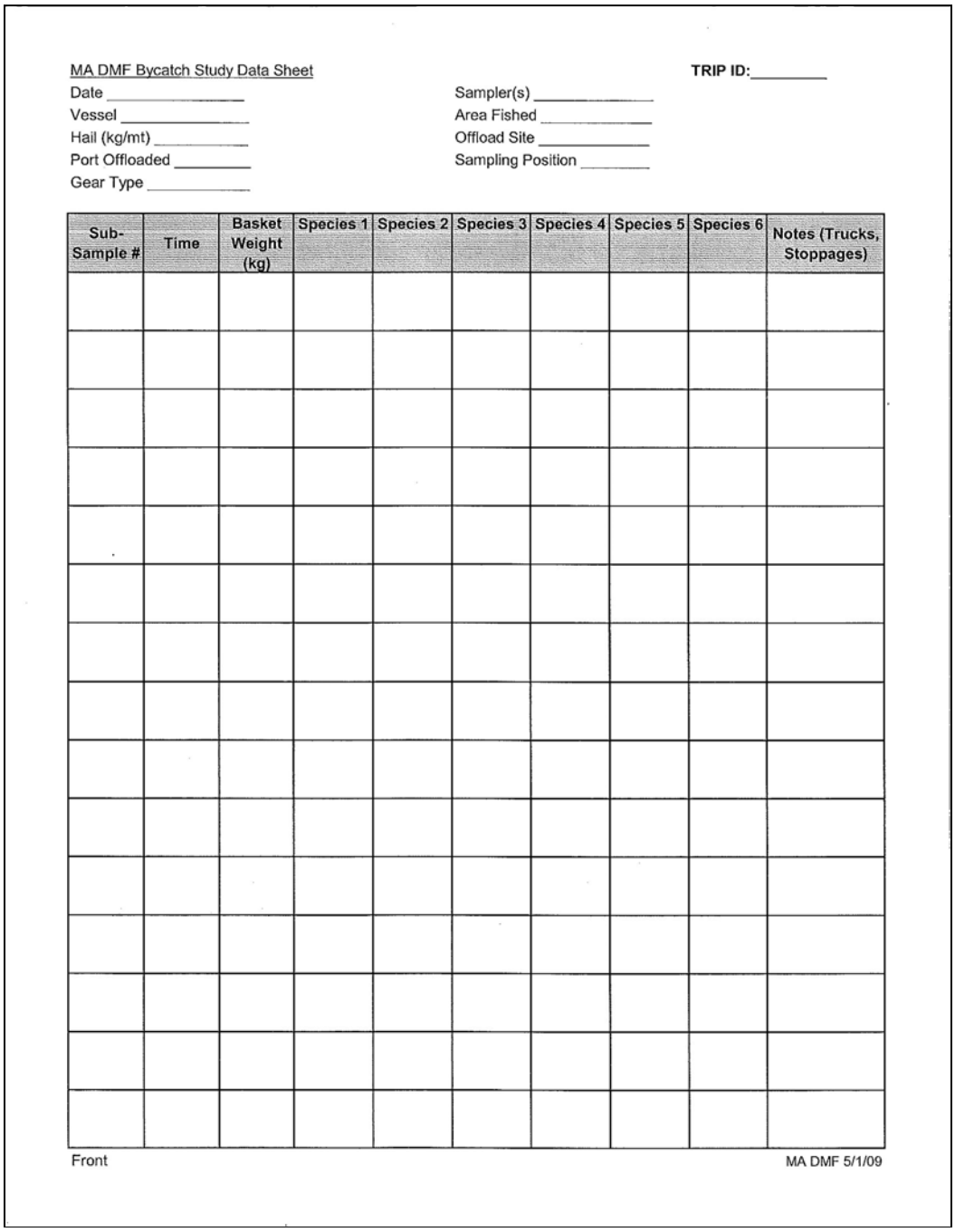
Inches of Discard in Vat Sampl. Position _____

Sub sample #	Time	Begin	End	Basket Weight (kg)	Species 1	Species 2	Species 3	Species 4	Species 5	Species 6	Species 7	Notes
Totals												

Sampling Station 2	Sample#	Time Begin	Time End	Spp1	Spp2	Spp3	Spp4	Spp5	Notes

Front MA DMF 5/1/09

Figure 2 Example Data Sheet for Sub-Sampling



MA DMF Bycatch Study Data Sheet

TRIP ID:_____

Date _____ Sampler(s) _____

Vessel _____ Area Fished _____

Hail (kg/mt) _____ Offload Site _____

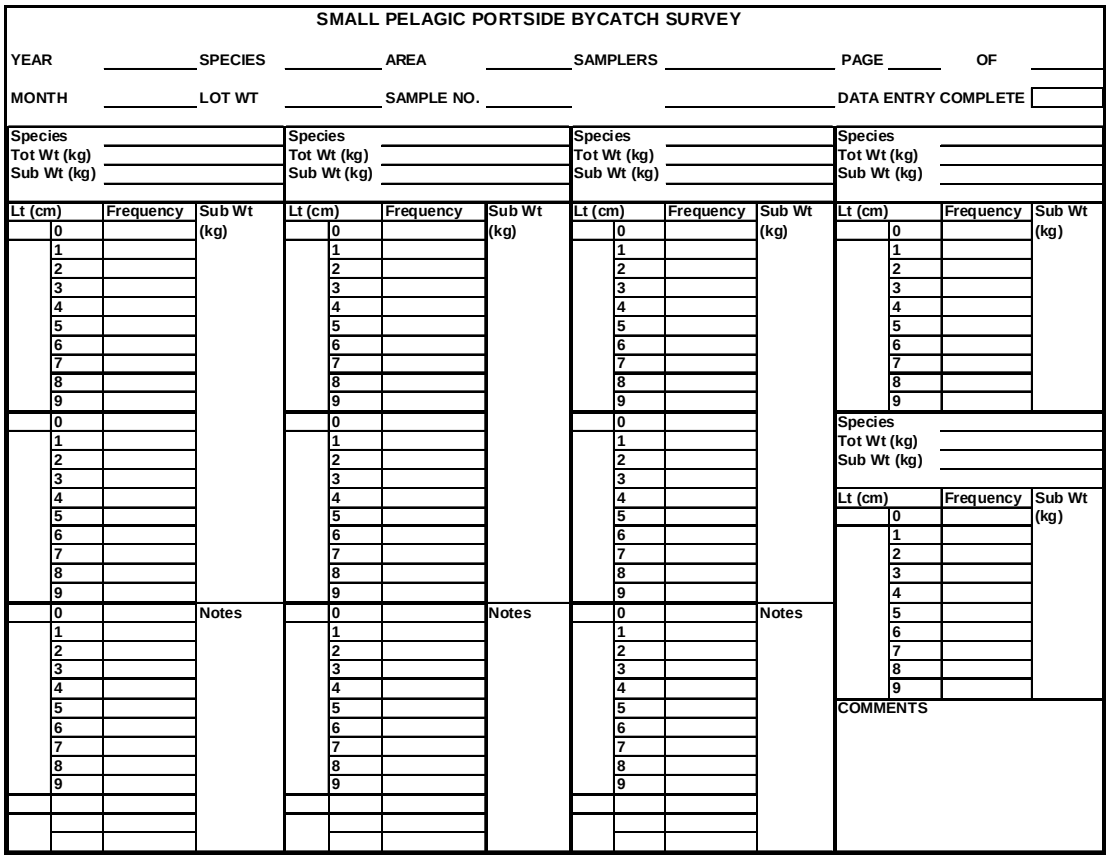
Port Offloaded _____ Sampling Position _____

Gear Type _____

Sub-Sample #	Time	Basket Weight (kg)	Species 1	Species 2	Species 3	Species 4	Species 5	Species 6	Notes (Trucks, Stoppages)

Front MA DMF 5/1/09

Figure 3 Example Length Frequency Data Collection Sheet



SMALL PELAGIC PORTSIDE BYCATCH SURVEY

YEAR _____ SPECIES _____ AREA _____ SAMPLERS _____ PAGE _____ OF _____

MONTH _____ LOT WT _____ SAMPLE NO. _____ DATA ENTRY COMPLETE

Species				Species				Species				Species			
Tot Wt (kg)				Tot Wt (kg)				Tot Wt (kg)				Tot Wt (kg)			
Sub Wt (kg)				Sub Wt (kg)				Sub Wt (kg)				Sub Wt (kg)			
Lt (cm)		Frequency	Sub Wt (kg)	Lt (cm)		Frequency	Sub Wt (kg)	Lt (cm)		Frequency	Sub Wt (kg)	Lt (cm)		Frequency	Sub Wt (kg)
	0				0				0				0		
	1				1				1				1		
	2				2				2				2		
	3				3				3				3		
	4				4				4				4		
	5				5				5				5		
	6				6				6				6		
	7				7				7				7		
	8				8				8				8		
	9				9				9				9		
	0				0				0						
	1				1				1				Species		
	2				2				2				Tot Wt (kg)		
	3				3				3				Sub Wt (kg)		
	4				4				4						
	5				5				5				Lt (cm)	Frequency	Sub Wt (kg)
	6				6				6				0		
	7				7				7				1		
	8				8				8				2		
	9				9				9				3		
	0		Notes		0		Notes		0		Notes		4		
	1				1				1				5		
	2				2				2				6		
	3				3				3				7		
	4				4				4				8		
	5				5				5				9		
	6				6				6				COMMENTS		
	7				7				7						
	8				8				8						
	9				9				9						

Protocol for Collecting Commercial Catch Samples

As part of the dockside monitoring program, there would be a procedure in plan for collecting commercial catch samples for stock assessment purposes when sampling landings events. Currently, ME DMR collects commercial catch samples using the following protocol (provided here as an example):

1. Herring must have been caught in U.S. waters.
2. Two samples per week from each statistical area where the fish are being caught (see map section).
3. One sample per week from each type of fishing gear where possible (mid-water trawl, pair trawl, purse seine, stop seine, weir and gill net).
4. 50 herring are randomly selected from the load (plus a couple to allow for damaged fish). The fish are placed in DMR herring sample boxes.
5. The sample boxes are labeled and transported to DMR headquarters in W. Boothbay Harbor.
6. The following information should be recorded on the sample boxes:

a. Amount of herring landed (lbs or metric tons)
b. Date of catch
c. Catch location: NMFS Statistical Area # and Sub-Area #
d. Port landed
e. Fishing vessel
f. Location of where sample was collected (sometimes different than where fish were landed)
g. Name of collector
h. Under remarks note gear type (purse seine, midwater/pair trawl, stop seine, gillnet or weir)
i. Label number of boxes per sample (i.e. 1 of 2 and 2 of 2)

1.8.4 Options for Levels of Coverage (Dockside Monitoring)

1.8.4.1 Option: 100% Dockside Monitoring

This measure requires rigorous sampling of the landed fish and certification of the offload weigh-outs (census of all landing events) by certified dockside monitors. Under this option, there would be 100% coverage of offloads by certified shore-based fishery observers (SBOs) who execute a robust protocol to derive total species-level landings composition would be necessary as part of this option.

Comment [lls21]: Do we want to use this term or "dockside monitors" or something else?

Participation in the 100% Dockside Monitoring Program would be mandated.

- Shoreside component of CMCP will be required to outline procedures for the following catch-handling elements upon landing:
  - Procedures to ensure the presence of a shore-based observer for all landing events;
  - Certification standards for shore-based observers;
  - Minimum data collection standards and protocol guidelines for shore-based observers, including those employed by states;
  - Verification that no pre-sorting takes place upstream of shore-based observers;
  - Procedures to provide a certified measurement of landed weight that is verifiable by the shore-based observer.

1.8.4.2 Option: <100% Dockside Monitoring Coverage With Extrapolation

Under this option, shore-based observers would be present and sample at less than 100% of landing events, but the coverage would be statistically designed to allow for the extrapolation of observed landings, including bycatch and incidental catch rates, across the entire fleet such that unobserved landings had a bycatch rate applied.

1.8.4.3 Option: <100% Dockside Monitoring Coverage Without Extrapolation

Under this option, shore-based observers would be present and sample at less than 100% of landing events, but the coverage rate and coverage design would not allow for the extrapolation of observed landings, including bycatch and incidental catch rates, across the entire fleet such that unobserved landings had a bycatch rate applied.

1.8.4.4 Option: Dockside Monitoring Coverage at a Level to Meet Council Priorities

Under this option, a DSM sampling design would be established to provide accurate estimations of catch and bycatch for all major elements of the fishery based on the priorities and precision levels identified by the Council: a **30% CV on catch/bycatch estimates for Atlantic herring and haddock, and a 20% CV on catch/bycatch estimates for river herring.** NMFS would determine levels of coverage similar to the SBRM approach. Analysis would have to include, at a minimum, coverage of purse seine vessels, bottom trawl vessels, and other major gear types comparable to that included for midwater and pair trawls

1.8.4.5 Option: Dockside Monitoring Coverage at a Level Equal to SBRM Coverage

This measure would require NMFS to increase coverage in the dockside monitoring program for the Atlantic herring fishery to levels equal to those required by the Standardized Bycatch Reporting Methodology (SBRM) amendment for at-sea monitoring.

XXX

1.8.5 Options for Dockside Monitoring Program Service Providers

The following standards would be used by NOAA Fisheries to evaluate service providers to comply with the dockside sampling requirements outlined in this section. NOAA Fisheries will certify/approve service providers and associated dockside samplers as eligible to provide services based upon criteria specified below and can decertify/disapprove service providers and/or individual samplers if such criteria are no longer being met. NOAA Fisheries will publish a list of approved service providers consistent with the Administrative Procedures Act (APA). The following standards and criteria for approval can be further modified by a future Council action. These requirements/standards can apply to at-sea monitors as well, if at-sea monitoring is contracted out to private service providers.

Dockside monitoring program service providers must apply for certification/approval from NOAA Fisheries. NOAA Fisheries shall approve or disapprove a service provider based upon the completeness of the application and a determination of the applicant's ability to perform the duties and responsibilities of a dockside monitoring service provider, as further defined below. As part of that application, potential service providers must include the following information:

- Identification of corporate structure, including the names and duties of controlling interests in the company such as owners, board members, authorized agents, and staff; and articles of incorporation, or a partnership agreement, as appropriate;
- Contact information for official correspondence and communication with any other office;

- A statement, signed under penalty of perjury, from each owner, board member, and officer that they are free from a conflict of interest with fishing-related parties including, but not limited to, vessels, dealers, shipping companies, sectors, sector managers, advocacy groups, or research institutions and will not accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from such parties;
- A statement, signed under penalty of perjury, from each owner, board member, and officer describing any criminal convictions, Federal contracts they have had, and the performance rating they received on the contract, and previous decertification action while working as a DSP service provider;
- A description of any prior experience the applicant may have in placing individuals in remote field and/or marine work environments – this includes, but is not limited to, recruiting, hiring, deployment, and personnel administration;
- A description of the applicant's ability to carry out the responsibilities and duties of a DSM service provider and the arrangements to be used;
- Evidence of adequate insurance to cover injury, liability, and accidental death for dockside monitors (including during training). Workers' Compensation and Maritime Employer's Liability insurance must be provided to cover the dockside samplers; vessel owners; processors/dealers; and service provider. Service providers shall provide copies of the insurance policies to dockside samplers to display to the vessel owner, operator, vessel manager, or dealer/plant manager, when requested.
- Service providers shall provide benefits and personnel services in accordance with the terms of each sampler's contract or employment status.
- Proof that the service provider's dockside samplers have passed an adequate training course that is consistent with the curriculum used in the current Northeast Fisheries Observer Program (NEFOP) training course, unless otherwise specified by NOAA Fisheries;
- An Emergency Action Plan (EAP) describing the provider's response to an emergency with a dockside samplers, including, but not limited to, personal injury, death, harassment, or intimidation; and
- Evidence that the company is in good financial standing.

Dockside monitoring service providers must be able to document compliance with the following criteria and requirements:

- A comprehensive plan to deploy NOAA Fisheries -certified dockside samplers, according to a prescribed coverage level (or level of precision for catch estimation), as specified by NOAA Fisheries, including all of the necessary vessel reporting/notice requirements to facilitate such deployment, including the following requirements:
    - A service provider must be available to industry 24 hours per day, seven days per week, with the telephone system monitored a minimum of four times daily to ensure rapid response to industry requests;
    - A service provider must be able to deploy dockside monitors to all ports in which service is required by this section;

- A service provider must report dockside monitors in a timely manner to determine whether the predetermined coverage levels are being achieved;
- A service provider's dockside monitor assignment must be representative of fishing activities must be able to monitor fishing activity throughout the fishing year;

- The service provider must ensure that dockside monitors remain available to NOAA Fisheries, including NMFS Office for Law Enforcement, for debriefing for at least two weeks following any sampled trip/offload;
- The service provider must report possible dockside monitor harassment; discrimination; injury; and any information, allegations, or reports regarding dockside monitor conflict of interest or breach of the standards of behavior to NOAA Fisheries;
- Service providers must submit to NOAA Fisheries, if requested, a copy of each signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the service provider and those entities requiring services and between the service provider and specific dockside monitors;
- Service providers must submit to NOAA Fisheries, if requested, copies of any information developed and used by the service providers distributed to vessels, such as informational pamphlets, payment notification, description of duties, etc.;
- A service provider may refuse to deploy a dockside monitor for any reason including, but not limited to, the following:
  - If the service provider does not have an available dockside sampler prior to a vessel's intended date/time of landing
  - If the service provider is not given adequate notice of vessel departure or landing, as specified by the service provider
  - Any other reason, including failure to pay for previous deployments of dockside samplers
- A service provider must not have a direct or indirect interest in a fishery managed under Federal regulations, including, but not limited to, fishing vessels, dealers, shipping companies, advocacy groups, or research institutions and may not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts fishing or fishing-related activities that are regulated by NOAA Fisheries, or who has interests that may be substantially affected by the performance or nonperformance of the official duties of service providers. This does not apply to corporations providing reporting, dockside, and/or at-sea monitoring services to participants of another fishery managed under Federal regulations.
- A system to record, retain, and distribute the following information for a period specified by NOAA Fisheries:
  - Dockside monitoring levels, including the number of refusals and reasons for refusals
  - Incident/non-compliance reports (e.g., failure to offload catch)
  - Hail reports, landings records, and other associated communications with vessels

- A means to protect the confidentiality and privacy of data submitted by vessels, as required by the Magnuson-Stevens Act; and
- A service provider must be able to supply dockside monitors with sufficient safety and data-gathering equipment, as specified by NOAA Fisheries.

For an individual to be certified as a dockside monitor, the service provider must demonstrate that each potential monitor meets the following criteria:

- A high school diploma or legal equivalent;
- Successful completion of all NOAA Fisheries -required training and briefings before deployment;
- Physical capacity for carrying out the responsibilities of a dockside sampler pursuant to standards established by NOAA Fisheries such as being certified by a physician to be physically fit to work as a dockside sampler. The physician must understand the sampler's job and working conditions, including the possibility that a sampler may be required to climb a ladder to inspect fish holds and/or trucks;
- Absence of fisheries-related convictions based upon a thorough background check; and
- Independence from fishing-related parties including, but not limited to, vessels, dealers, shipping companies, advocacy groups, or research institutions to prevent conflicts of interest.

1.8.5.1 Option: Standardize Existing State Port Sampling Programs and Incorporate Them Into the Proposed Action by Certifying Them as Approved DSM Vendors

Under this option, the existing port sampling programs run by the States of Maine and Massachusetts would be incorporated into the new catch monitoring program, ensuring that the data they produce is utilized. Their protocols would be standardized and adjusted to meet the required data elements of the proposed action, and State port samplers would only monitor offloads for vessels with an approved CMCP in place. State port sampling data would be converted to landings reports which would in turn be submitted to NMFS-NERO-FSO.

Maine DMR Program

The State of Maine, through the Division of Marine Resources (DMR), has conducted a port sampling program in the herring fishery for several years. Historically, funding for the program, which employs one full-time port sampler and for which DMR contributes supervisory and analysis services, has come from the Atlantic Coastal Cooperative Statistics Program (ACCSP). The program has undeniable value, but would likely be more effective if sampling protocols were changed somewhat.

Under this alternative, the DMR port sampler(s) would implement a standardized sampling protocol that would allow them to certify a landings report for any landing they observed that included landed weights for all species. DMR port sampler(s) would also benefit from other requirements of the program including the requirement to provide a certifiable actual weight or approved proxy and the requirement to demonstrate the absence of pre-sorting.

Massachusetts DMF Program

Few details on the size, scope and sampling strategy of the DMF program are available at this time, in part because the program is quite new, but it is believed to consist of one full-time port sampler. It is also believed to be modeled on the DMR program and is, like that one, voluntary for vessels. It is not known whether the DMF sampler works outside Massachusetts.

Resources are currently available to support an expansion of this program. The Cape Cod Commercial Hook Fishermen's Association (CCCHFA) has recently assisted Massachusetts' fishery managers and state legislators in the development of progressive legislation that will enable the Division of Marine Fisheries (DMF) to build and implement a groundbreaking dockside monitoring system for the pelagic fishing industry. Specifically, a piece of state legislation, H5054, also known as the Energy and Environmental Bond Bill (EEBB) was signed into law by the Governor in August 2008. The EEBB specifies that the Commonwealth will create a rigorous DSM program with verifiable landings weights and 100% sampling of landing, and also contains a provision to authorize the Governor to appropriate $750,000 to support such a program.

1.8.5.2 Option: Implement An Immediate or Phased-In Use of NEFOP Observers as Shore-Based Observers for the Proposed Action, Essentially Certifying the NEFOP as a DSM Vendor

Under this option, Northeast Fisheries Observer Program (NEFOP) observers, at currently projected staffing levels or perhaps under a future expansion, would be able to operate as shore-based observers and provide DSM services under the proposed program. While the NEFOP could simply continue to operate as it does now in terms of observing the herring fishery, even once the proposed program were implemented (if chosen by the Council), this option would allow for a more efficient use of resources on all fronts, provided NMFS was satisfied that the proposed program was adequate and therefore supportive of shifting NEFOP personnel from vessel to shore.

There would also be an option for NEFOP to employ a diverse approach to placing Federal observers into this fishery- sometimes on the vessels, sometimes on shore, depending upon data needs and resource availability. This option might allow for a highly efficient use of NEFOP personnel otherwise on "stand-by" for various reasons and thus unable to go to sea to observe the herring fishery (see Option 6 in Section XXX below for more information).

1.8.5.3 Option: Implement a Single-Service Provider Plan for DSM Operations Which Cannot be Covered by Shore-Based Observers Employed by State or Federal Agencies

Comment [lls22]: Needs discussion

XXX

1.8.5.4 Option: Implement a Multi-Service Provider Plan for DSM Operations Which Cannot be Covered by Shore-Based Observers Employed by State or Federal Agencies

XXX

Comment [lls23]: Needs discussion.

1.8.6 Options for a Dockside Monitoring Set-Aside

Comment [lls24]: NERO comment – the mechanism for the DSM set-aside options need to be more clearly defined…cannot just be described as analogous to the RSA program.

Under this measure, the Council, in consultation with the ASMFC, would set-aside up to **3%** of the TAC from any management area(s) or the total TAC for the herring fishery to support dockside monitoring and commercial catch sampling of Atlantic herring landings. The Council would determine the specific percentages for the DSM set-aside and the management area(s) to which they apply during the fishery specification process.

1.8.6.1 Option: Eliminate the Research Set-Aside and Replace it with a DSM Set-Aside

Under this option, the current research set-aside (RSA) for the herring fishery would be eliminated, and a DSM set-aside would be established.

Currently, the herring fishery closes in a particular management area when it is projected that 95% of the area TAC has been/will be caught. Five percent of the remaining TAC is set-aside for incidental catch in other fisheries (under a 2,000-pound trip limit) after the directed fishery is closed. In some management areas, an additional 3% is currently set-aside to support herring-related cooperative research. Similar to the RSA, the DSM set-aside is intended to be in addition to the current 5% set-aside for incidental catch once the directed fishery in a management area closes. Under this option, the RSA would be eliminated, and the herring fishery would close in a management area when it is projected that 92% of the TAC is reached in areas where a DSM set-aside is allocated (100% minus the 5% incidental catch set-aside and the 3% DSM set-aside).

1.8.6.2 Option: Establish DSM Set-Aside in Addition to the RSA

Under this option, the current research set-aside (RSA) for the herring fishery would continue, and a DSM set-aside would be established in addition to the RSA.

Currently, the herring fishery closes in a particular management area when it is projected that 95% of the area TAC has been/will be caught. Five percent of the remaining TAC is set-aside for incidental catch in other fisheries (under a 2,000-pound trip limit) after the directed fishery is closed. In some management areas, an additional 3% is currently set-aside to support herring-related cooperative research. Under this option, the herring fishery would close in a management area when it is projected that 89% of the TAC is reached in areas where a DSM set-aside is allocated (100% minus the 5% incidental catch set-aside, the 3% RSA, and the 3% DSM set-aside).

1.8.6.3 Option: Identify DSM as Top Priority for RSA

This option would retain the current RSA process, but the only priority for funding that would be identified by the Council would be dockside monitoring.

1.9 MEASURES TO REQUIRE ELECTRONIC MONITORING

XXX

1.9.1 No Action Option

Under the no action option, provisions to require electronic monitoring would not be implemented as part of the catch monitoring program in Amendment 5.

1.9.2 Option: Video-Based Electronic Monitoring

Comment [lls25]: This section needs further discussion/development.

This alternative will require video-based electronic monitoring equipment to ensure compliance with maximized retention provisions.

VBEM systems will require two distinct types of support service. While these two service categories may be handled by the same vendor, it is also possible that they would be handled separately. For instance, when CCCHFA pilot-tested VBEM solutions in New England and planning discussions were held pending potential operational implementation, a model was considered in which a local non-governmental organization (NGO) might handle field service and Archipelago would handle analysis.

- Field service
- Analysis service

1.9.3 Option: Electronic Monitoring

This option would require, on a phased-in schedule, the use of passive vessel monitoring systems that can, at a minimum, measure the instance of released tows (on trawl vessels) or sets (on purse seine vessels) on unobserved vessels, unless the Regional Administrator determines that the technology is either not sufficient or impracticable.

Systems to be monitored in order to achieve the objective of measuring incidences of released tows:

- Net reels (deployment and retrieval) for midwater trawlers, winches on purse seine vessel pumps;
- Codend or seine release mechanism;
- GPS

1.9.4 Option: Video Monitoring Pilot Program

This alternative will establish a pilot program to collect information and determine the most appropriate applications for video monitoring in the Atlantic herring fishery.

- Details TBD

- Could be tested with maximized retention to ensure compliance
- Incentives to participate? Cost recovery?

1.9.5 Option: Encourage Utilization of New Technology to Improve Information Collection

This measure would establish a top priority for the current research set-aside (RSA) – to investigate the feasibility of using the study fleet technology in the Atlantic herring fishery and test applications of passive monitoring systems for midwater, bottom trawl, and purse seine vessels.

- Electronic monitors, net sensors measuring trawl depth, temperature, and other data, and GPS integrated into a vessel's major systems can be used to collect information and transmit electronically – technology may be developed to measure incidences of slipped hauls on unobserved trips and provide fine-scale effort data

1.10 MEASURES TO REQUIRE CATCH MONITORING AND CONTROL PLANS

As part of the Amendment 5 catch monitoring program, the Council may require the industry to design and submit catch monitoring and control plans (CMCPs) to NMFS. This component of the catch monitoring program is intended to assure that the industry retains control and flexibility over fishing, landing, and processing operations while still ensuring the delivery of a robust data collection program by outlining in detail how they will meet the catch monitoring and control standards set by the Council and NMFS.

The standards specified in this amendment would outline requirements for each CMCP and may include the following: sorting and weighing all landings under the oversight of a shore-based observer (SBO) or dockside monitor, notification requirements in advance of a landing, use of approved scales or other weighing techniques, provision of safe and convenient access points and sampling locations for observers/monitors/samplers, and procedures to ensure that no unobserved pre-sorting occurs, possibly including details regarding the installation and operation of a video-based electronic monitoring (VBEM) system if one is required. CMCPs should cover all possible offload scenarios, including cod-end handling and pump-out procedures between pair trawl vessels, and may include cooperative arrangements with dealers and/or carriers and/or receivers of at-sea transfers (including USAP vessels if necessary and appropriate).

If CMCPs are required, NMFS will approve CMCP on an annual or semi-annual basis as part of fishery permit renewal procedures. CMCP options under consideration are described below.

1.10.1 No Action Option

Under the no action option, requirements for catch monitoring and control plans (CMCPs) would not be implemented in Amendment 5.

1.10.2 Option: Sectors of the Fishery to Which CMCP Requirements Apply

CMCP requirements could apply to:

- Limited Access herring vessels (Category A, B and/or C);
- Federally-permitted Atlantic herring dealers;
- Atlantic herring processors;
- Herring vessels that utilize a pump during harvesting operations; and/or
- Herring vessels that utilize carriers.

1.10.3 Option: Required Elements of CMCPs

If CMCPs requirements are established in Amendment 5, the Council may require that the following elements be included:

- All CMCPs must outline fish handling procedures in detail such that the absence of pre-sorting can be verified or the pre-sorted fish can be clearly demonstrated to be retained and provided to the shore-based observer;
- All CMCPs must provide an explanation of how a certified, independently verifiable weight or volumetric conversion will be attained for all species;
- All CMCP must provide an outline of the video-based electronic monitoring (VBEM) system to be operated and its installation specifications (if VBEM is a component of the catch monitoring program);
- Shoreside component of CMCP may be required to outline procedures for the following catch-handling elements upon landing:
    - Procedures to ensure the presence of a shore-based observer/dockside monitor/sampler for all landing events;
    - Certification standards for shore-based observers/dockside monitors/samplers;
    - Minimum data collection standards and protocol guidelines for shore-based observers/ dockside monitors/samplers, including those employed by States;
    - Verification that no pre-sorting takes place upstream of shore-based observers/dockside monitors/samplers; and
    - Procedures to provide a certified measurement of landed weight that is verifiable by the shore-based observer/dockside monitor/sampler.
- Mandatory Verification of Compliance with Maximized Retention Requirements
    - At-sea component of vessel-designed Catch Monitoring and Control Plan (CMCP, see below) will be required to outline procedures for the installation and operation of a Video-Based Electronic Monitoring (VBEM) system.
    - CMCP must include detailed procedures to demonstrate the absence of pre-sorting, including demonstration that the codend is empty after each haul and that no fish were slipped from the codend while the codend was in the water (see Section XXX for a description of options to address slippage).