

# **Draft Discussion Document**

## **Industry-Funded Monitoring Omnibus Amendment**

**New England Fishery Management Council  
Observer Policy and Herring  
Committee Meeting  
July 1, 2015**

**Prepared by NOAA's National Marine Fisheries Service**

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## SECTION 1: Additional background for Omnibus Alternatives

The following section is intended as background for the Omnibus alternatives currently included in the Industry-Funded Monitoring Omnibus Amendment, and will be incorporated into the next draft of the Environmental Assessment. The section provides additional description of how the Federal budget for monitoring is decided each year, how the changes in the recent Greater Atlantic Region Standardized Bycatch Reporting Methodology (SBRM) Amendment affect the future use of regional monitoring funding, the existing industry-funded monitoring programs in the Greater Atlantic Region, and why it is necessary to administer new industry-funded monitoring programs differently than current programs.

This additional background information *\*does not\** change the current range of Omnibus alternatives included in this amendment. The full description of the Omnibus alternatives is included in an appendix to this document.

### **How is the Federal budget for monitoring decided each year?**

Each year, the White House Office of Management and Budget submits a budget request for the entire Federal government for the budget year starting in October. The budget request contains numerous funding lines and Congress makes the final determination on that request. Each of these lines is accompanied by a brief description which explains to Congress and the public how the funding in that line will be used. Funds cannot be used for activities that are not included in the description of the budget line, or as directed by Congress in appropriations bills.

### **How and why were funding lines changed related to SBRM?**

The Court order in *Oceana v. Locke*, which vacated the 2007 SBRM Omnibus Amendment, found legal fault with two aspects of the process used to prioritize funding for observer coverage. First, the Court found that NMFS had too much discretion in determining whether there were sufficient resources available to fully implement the estimated number of sea days needed to achieve the coefficient of variation-based (CV-based) SBRM performance standard. Second, the Court found that NMFS had too much discretion in how observer sea days were redistributed under the prioritization process. To address these two aspects of the court order, the revised SBRM established a threshold that would be used to determine what resources are available to implement the SBRM coverage in a given year, and defines a method for distributing the available observer sea days if resources are limited.

Under the revised SBRM prioritization process, the amount of money available for the SBRM will be the funding allocated to the Region under four specific historically-appropriated observer funding lines. In fiscal years 2011-2014, the Northeast Fisheries Observers funding line made up 53 percent to 59 percent of all observer funds for the Greater Atlantic Region under these four funding lines. The Northeast Fisheries Observers funding line is now fully committed to funding SBRM. The three other observer funding lines now dedicated to SBRM are allocated among different NMFS regions, including the Greater Atlantic Region, to meet national observer program needs. The total amount of the funds allocated to the Greater

Atlantic Region from these three funding lines will constitute the remainder of the available SBRM funds.

Historically, the available SBRM funding has been insufficient to fully meet the CV-based performance standard for all of the fishing modes (gear type, access area, trip category, region, and mesh group combinations analyzed under SBRM). If the available funding continues to be insufficient to meet the CV-based performance standard, the SBRM amendment establishes a non-discretionary formulaic processes for prioritizing how the available observer sea-days would be allocated to the various fishing modes to maximize the effectiveness of bycatch reporting and bycatch determinations.

### **What funding lines are available to fund industry-funded monitoring programs?**

A number of different funding lines contribute to monitoring programs in the Greater Atlantic Region.

Some of the funding lines must be used for specific monitoring programs. With implementation of the Greater Atlantic Region SBRM amendment, NMFS no longer has the flexibility to use certain funding lines as we have in the past, as described above. In addition, there are certain funding lines specifically designated for other monitoring priorities (e.g., protected species monitoring). Thus, there are certain funding lines that will not be available to support industry-funded programs, unless there is excess funding in these lines above the amount needed to meet the designated monitoring obligations for that year.

Other funding lines that include monitoring or administrative aspects of monitoring programs in their described purpose could be used to cover NMFS costs for industry-funded monitoring programs. Until the Council establishes industry-funded monitoring programs, it will not be clear what NMFS costs might be related to these new programs, and what amount and type of administrative support will be necessary. Thus it is not possible to list the funding lines that could contribute to NMFS costs for industry-funded monitoring programs at this time. If there is not enough money to cover NMFS costs related to industry-funded monitoring programs for a given year, either NMFS or the Councils would need to prioritize which programs are funded first.

### **How are existing industry-funded monitoring programs administered in the Greater Atlantic Region?**

The Great Atlantic Region currently administers an industry-funded monitoring program for the Atlantic Sea Scallop fishery, and will be transitioning to an industry-funded monitoring program for groundfish sectors in the Northeast Multispecies FMP. Additional detail about the industry-funded monitoring programs for these fisheries is provided below.

The Industry-Funded Monitoring Omnibus Amendment does not currently modify the coverage levels or allocation of funding for NMFS administrative costs for the scallop or groundfish sector industry-funded monitoring programs. The standardized structure and prioritization process considered in the Industry-Funded Monitoring Omnibus Amendment could apply to groundfish

sectors and/or the scallop fishery if, in a future action, the Council desires coverage above the levels currently set by these FMPs and/or if the Council wants Federal funding prioritized for NMFS infrastructure costs associated with monitoring groundfish sectors.

*Groundfish Industry-funded At-Sea Monitoring.* The groundfish sector at-sea monitoring (ASM) program was first developed by the Council in Amendment 16 to the Northeast Multispecies FMP (75 FR 18262; April 9, 2010). Amendment 16 stated that the primary purpose of the groundfish ASM program was to verify area fished, catch, and discards by species on sector trips, and that minimum coverage levels must meet the CV in SBRM (i.e., a 30% CV). This CV standard is achieved through a combination of SBRM (fully-NMFS funded) and ASM (industry-funded) coverage. The groundfish ASM program was designed to be an industry-funded program, but from groundfish fishing years 2010 through 2014, NMFS was able to fully fund both the NMFS and industry cost responsibilities for groundfish ASM. Framework 48 to the Northeast Multispecies FMP (78 FR 26118; May 3, 2013) further defined specific goals and objectives for the ASM program, and also clarified that the 30% CV standard for ASM should apply at the stock level (i.e., each stock of fish for the fishery as a whole). In contrast, the SBRM CV standard for groundfish applies at the stock complex level (i.e., for all groundfish stocks in aggregate).

Again, though NMFS has paid both at-sea and infrastructure costs for ASM for groundfish sectors since 2010, groundfish sectors are responsible for covering the at-sea costs for the ASM program if NMFS is unable. In a letter to the sectors dated February 24, 2015, NMFS indicated that, due to funding changes required by the SBRM Amendment (described above), industry would be required to cover its portion of the ASM cost responsibilities before the end of the 2015 calendar year. NMFS and industry are currently working through the logistics of transitioning to an industry-funded ASM program.

*Scallop Industry-funded Observer Program.* NMFS incorporated the industry-funded observer program in Framework Adjustment 11 Atlantic Sea Scallop FMP in 1999 (64 FR 31144, June 10, 1999). The program first applied to the Closed Area II scallop fishery exemption program. Six subsequent management actions addressed major aspects of the industry funded observer program:

- Framework 13 to the Scallop FMP (65 FR 37903, June 19, 2000) kept the program in place for the Closed Area I, Closed Area II, and Nantucket Lightship exemption program;
- Framework 14 to the Scallop FMP (66 FR 24052, May 11, 2001) kept the program in place for the Hudson Canyon and Virginia Beach Area Access program;
- Amendment 10 to the Scallop FMP (69 FR 35194, June 23, 2004) formally included the program for all limited access scallop fishing under the area access and open area days-at-sea programs;
- Framework 16 the Scallop FMP (69 FR 63460, November 2, 2004) established observer coverage levels to meet a 30-percent coefficient of variation (CV), (a measurement of the precision of the estimate) for Closed Area 1, Closed Area II, and the Nantucket Lightship area access fisheries;

- Secretarial Emergency Rule (71 FR 34832, June 16, 2006; extension 71 FR 69073, November 29, 2006) established a mechanism for vessels to contract directly with observer service providers to resolve legal constraints of industry paying for observer coverage; and
- Amendment 13 to the Scallop FMP (72 FR 32549, June 13, 2007) formally incorporated the emergency action industry funded observer measures into the Scallop FMP.

As monitoring needs expanded and administration of the program became more efficient, the Council and NMFS ultimately expanded the scallop industry-funded monitoring program to all access areas, open areas, and to the limited access general category individual fishing quota fleet. The Council and NMFS have made minor operational modifications to the program over the years. The Scallop FMP's program is therefore a good example of an effective industry funded program that phased in changes as program needs and administration evolved.

The need for the scallop industry-funded program has consistently been to collect catch information (kept fish and bycatch) through levels of at-sea observer coverage that could not otherwise be achieved through NMFS observer program funding alone. NMFS has, and continues to be able to pay for its costs of administering the Scallop industry-funded observer program because the coverage level is primarily set through SBRM. Prior to the implementation of the SBRM, the Council concluded that industry-funded coverage levels set to achieve a 30-percent CV performance standard would appropriately reduce variability in bycatch estimates for yellowtail flounder, other finfish, and sea turtles. When the SBRM was first implemented, this goal for monitoring the scallop fishery was included in the SBRM coverage goals. The Scallop industry-funded observer program provides funding through the set-aside that enables the scallop fishery to pay for coverage levels that meet the SBRM coverage requirement at a minimum.

The observer set-aside model works well in the scallop fishery because the high value of scallops allocated to vessels that carry an observer helps compensate the vessel for the cost of the observer. The vessel receives extra pounds or days-at-sea on each observed trip that provides additional funds to pay for the observer. However, vessel owners are required to pay for the observer even if the vessel does not catch any scallops or the additional set-aside of scallops, or if there is insufficient set-aside allocated to compensate the vessel. NMFS's goal is to set a compensation rate that covers the cost of an observer, without providing financial incentive for a vessel to desire observer coverage, which would bias sampling.

### **Why does this action propose to consider industry-funded monitoring programs in a different way than it is considered for the NE Multispecies and Scallop FMPs?**

The Councils have been increasingly interested in requiring monitoring coverage for purposes different than those for which NMFS is legally required to provide monitoring coverage (e.g., Magnuson-Stevens Fishery Conservation and Management Act (MSA), Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA)). NMFS limited budget requires that NMFS prioritize resources across competing monitoring interests. The standardized process for

industry-funded programs described in the Industry-Funded Monitoring Omnibus Amendment, including the prioritization process, provides a method to address the Council's identified monitoring needs within NMFS's budget limitations.

### Current Range of Omnibus Alternatives

Omnibus Alternative 1 – No standardized structure for industry-funded monitoring programs (No Action)

- No standard definition of cost responsibilities between industry and NMFS;
- No standardized framework adjustment process to implement future industry-funded monitoring programs in other FMPs;
- No standardized observer service provider requirements; and
- No process for prioritizing available federal funding across industry-funded monitoring programs.

Omnibus Alternative 2 – Standardized structure for industry-funded monitoring programs.

- Standard definition for cost responsibilities between industry and NMFS;
- Standard framework adjustment process to implement future industry-funded monitoring programs in other FMPs;
- Standard observer service provider requirements; and
- Process for prioritizing available federal funding across industry-funded monitoring programs.

Omnibus Alternatives 2.1 – 2.5 are variations on the prioritization process in Omnibus Alternative 2, and consider specific options for what to do when Federal funding is not sufficient to cover NMFS's costs to support the Council's desired coverage level for a given FMP.

1. Omnibus Alternative 2.1– NMFS-led prioritization process. NMFS prepare analysis and prioritization in consultation with the Councils.
2. Omnibus Alternative 2.2 – Council-led prioritization process. Council PDT/FMAT prepares analysis and recommended priorities to NMFS.
3. Omnibus Alternative 2.3 – Proportional prioritization process. Shortfalls in Federal funding to support industry-funded monitoring would be distributed proportionally among all industry-funded monitoring programs.
4. Omnibus Alternatives 2.4 and 2.5 – Coverage ratio-based prioritization processes. The amount of funding would be allocated to each FMP by sequentially eliminating coverage in fleets that have either the highest (2.4) or lowest (2.5) ratio of projected coverage days needed in the coming year to actual days absent from port.

\*\*\*See Appendix for full description of Omnibus Alternatives.

## SECTION 2. Herring and Mackerel Alternative Packages

There are two major considerations that should drive the Council's selection of industry-funded monitoring coverage target alternatives for the herring and mackerel fisheries. These considerations are data need and program cost.

### Data Need

The first major consideration is whether an industry-funded monitoring program alternative provides the type and quality of data necessary to meet the Council's information collection goals for a fishery. We have classified the major data needs for the herring and mackerel fisheries into 3 broad categories:

- 1) Target species catch accounting: Does the monitoring program under consideration provide information on landings and discards of the target species?
- 2) Non-target species catch accounting: Does the monitoring program under consideration provide information to determine the species composition and amount of non-target landings and discards?
- 3) Scientific information: Does the monitoring program provide information to support stock assessments for target and non-target species?

This document discusses various types of industry-funded monitoring currently under consideration for the herring and mackerel fisheries (Table 1). Tables 2 and 3 illustrate the ability of different monitoring types to achieve a range of data needs for the herring and mackerel fisheries. Next, this document presents revisions to the current range of industry-funded monitoring alternatives to develop comprehensive monitoring alternative packages for the herring (Tables 4) and mackerel (Tables 6) fisheries. The packages developed by the PDT/FMAT were intended to encompass range of ways to meet the Council's desired data needs and a range program costs. Tables 5 and 7 explain how the comprehensive monitoring alternative packages match the major data needs.

With all alternative packages, the No Action data collection and monitoring (MSA, MMPA, ESA) will continue regardless of any decisions made in this amendment. The alternative packages represent information that would be collected in addition to existing data collection and monitoring.

### Program Cost

The second major consideration is the cost of a monitoring program. This document discusses PDT/FMAT work to groundtruth fixed and operating costs for herring and mackerel vessels, and attempts to generate cost estimates for the various types of industry-funded monitoring under consideration.

## Comparison of different monitoring types under consideration for the herring and mackerel fisheries

Table 1 is intended to highlight similarities and differences between the monitoring types currently under consideration for the herring and mackerel fisheries. The differences in these monitoring types will ultimately affect the type and quality of information collected through industry-funded programs for these fisheries, as well as the overall program costs.

<b>Table 1.</b>	<b>NEFOP Observer</b>	<b>At-Sea Monitor</b>	<b>Electronic Monitoring</b>	<b>Portside Sampling</b>
<b>Education Requirements</b>	Bachelor's Degree*	High School Diploma or Equivalency	None	High School Diploma or Equivalency?
<b>Data Collected on Retained Catch</b>	Specialized High Volume Fisheries Sampling, including fishing effort and species composition	None	Verify retention of catch	Species Composition
<b>Data Collected on Discarded Catch</b>	Specialized High Volume Fisheries Sampling, including fishing effort, species composition, and slippage	Species composition and slippage	Frequency of discard events	None
<b>Biological Sampling</b>	Age and length data	Age and length data?	None	Age and length data?
<b>Supplemental Research Projects</b>	Collects additional data as requested	None	None	May collect additional data as requested?
* Exceptions may be made for individuals with appropriate work experience				

Different types of reporting and/or monitoring can provide different kinds of information with varying levels of verification.

For landings, vessel trip reports and dealer purchase reports provide dual records of reported landings with the general location coming from the vessel trip report. If specific location of catch is important, vessel monitoring systems (VMS), observers, and monitors can provide independent verification of location. Portside monitoring can provide independent verification of total landings amounts but no information on location of catch. If small amounts of incidentally-caught species are typically mixed in and retained with the target species, portside sampling may be the best way to estimate/document those landings.

For discards (of targeted or incidental species), vessel trip reports provide reported discards, but independent verification of discards is often desired. Observers and monitors can provide detailed location-specific discard information, though monitors may or may not collect species composition and may limit their data collection to confirming retention and generally documenting discarding frequency. Cameras (electronic monitoring) can also confirm retention. If retention is confirmed (by whatever means), then portside sampling can provide full catch verification. Affidavits of discard/slippage events can provide details of why discard/slippage events occur. If retention is not confirmed, then portside sampling can provide independent verification of landings composition but uncertainty regarding discards will persist (assuming observer coverage is not complete).

Biological information (age/length data) can be collected by observers/monitors at sea or dockside samplers/port agents on land.

The Industry-Funded Monitoring Amendment PDT/FMAT developed Tables 2 and 3 to illustrate the ability of different monitoring types (ranked high to low) to achieve a range of data needs for the herring and mackerel fisheries. These tables are based on similar tables provided in the Environmental Defense Fund's Fisheries Monitoring Roadmap (Lowman et al. 2013).

Table 2. Herring Matrix		Ability to meet data need: <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> N/A								
		Self-Reporting			Independent monitoring					
Data Need		Vessel	Dealer	Affidavits	VMS	NEFOP Observers	Cameras	Portside	At-sea monitors	At-sea monitors
									With sampling for species comp	Without sampling for species comp
Total herring catch accounting	Verifying retained	Vessels report by species	Dealer reports by species		Can verify location fishing activity	Verifying location of fishing activity	Confirms retention (no discard estimate)	Species composition data	Verifying location of fishing activity	Confirms retention (no discard estimate)
	Quantifying discards	Vessels report by species			Can verify location fishing activity	Species composition data Estimates amount of discards	Confirms retention (no discard estimate)		Species composition data	Confirms retention (no discard estimate)
Non-target catch accounting	Haddock catch cap monitoring [ACL monitoring]	Used for total retained		Can help with details of why slippage occurs	Can verify location fishing activity	Species composition data Estimates amount of discards	Confirms retention (no discard estimate)	Species composition data	Species comp and estimates of discarded catch	Confirms retention (no discard estimate)
	River herring and shad catch cap monitoring	Used for total retained		Can help with details of why slippage occurs	Can verify location fishing activity	Species composition data Estimates amount of discards	Confirms retention (no discard estimate)	Species composition data	Species comp and estimates of discarded catch	Confirms retention (no discard estimate)
Scientific information	Stock assessments for herring	VTR only	Dealer reports by species			Collect age, length data		Collect age, length data	Collect age, length data for discards only	
	Stock assessments for non-target species	VTR only	Dealer reports by species			Collect age, length data		Collect age, length data	Collect age, length data for discards only	
	Spawning information					Collect age, length data		Collect age, length data	Collect age, length data for discards only	

Table 3. Mackerel Matrix		Ability to meet data need: <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> N/A								
		Self-Reporting			Independent monitoring					
		Vessel	Dealer	Affidavits	VMS	NEFOP Observers	Cameras	Portside	At-sea monitors	At-sea monitors
Data Need								With sampling for species comp	Without sampling for species comp	
Total mackerel catch accounting [ACL monitoring]	Verifying retained	Vessels report by species	Dealer reports by species		Can verify location fishing activity	Verifying location of fishing activity	Confirms retention (no discard estimate)	Species comp data	Verifying location of fishing activity	Confirms retention (no discard estimate)
	Quantifying discards	Vessels report by species			Can verify location fishing activity	Species comp data Estimates amount of discards	Confirms retention (no discard estimate)		Species comp data	Confirms retention (no discard estimate)
Non-target catch accounting	River herring and shad catch cap monitoring	Used for total retained		Can help with details of why slippage occurs	Can verify location fishing activity	Species comp data Estimates amount of discards	Confirms retention (no discard estimate)	Species comp data	Species comp and estimates of discarded catch	Confirms retention (no discard estimate)
Scientific information	Stock assessments for mackerel	VTR only	Dealer reports by species			Collect age, length data		Collect age, length data	Collect age, length data for discards only	
	Stock assessments for non-target species	VTR only	Dealer reports by species			Collect age, length data		Collect age, length data	Collect age, length data for discards only	

## Current Range of Herring Alternatives

Herring Alternative 1: No coverage target specified for industry-funded monitoring programs (No action)

Herring Alternative 2: Coverage target specified for industry-funded monitoring programs.

### *Permit-based alternatives:*

- 100% NEFOP-equivalent coverage target on Herring Category A and B Vessels
- 75% NEFOP-equivalent coverage target on Herring Category A and B Vessels
- 50% NEFOP-equivalent coverage target on Herring Category A and B Vessels
- 100% At-sea monitor coverage target on Herring Category A and B Vessels
- 75% At-sea monitor coverage target on Herring Category A and B Vessels
- 50% At-sea monitor coverage target on Herring Category A and B Vessels

### *Fleet-based alternatives:*

- NEFOP-equivalent Percentage Coverage on Midwater Trawl Fleet to achieve a 30% CV on river herring and shad catch (2013 estimate is 51-61% coverage necessary)
- 100% Coverage on Midwater Trawl Fleet Fishing in Groundfish Closed Areas
- Electronic Monitoring and Portside Sampling on Midwater Trawl Fleet

### *Other alternatives/Options:*

- Allow a wing vessel to be exempt from monitoring coverage. These vessels would be prohibited from carrying fish.
- Allow waivers, which would allow vessels to fish if monitoring coverage were not available due to logistics or funding, or prohibit waivers, which would limit effort to match the specified coverage target if monitoring coverage were not available due to logistics or funding.
- Selected coverage levels expire in 2 years after implementation.
- Re-evaluation of coverage levels 2 years after implementation.

## Suggested Revisions to Herring Alternatives

<b>Gear Type</b>	<b>Purse Seine</b>	<b>MWT</b>	<b>Bottom Trawl</b>
<b>Permit Categories</b>	<b>A and B</b>	<b>A - E</b>	<b>A and B</b>
<b>Herring Alternative 1: No Action</b>	SBRM	SBRM	SBRM
<b>Herring Alternative 2: Coverage Targets for IFM Program</b>	Requires selection of sub-options (1-4) and coverage alternatives (2.1-2.4).		
<i><b>Sub-Option 1: Waiver Allowed</b></i>	Allows waivers to be issued if coverage is unavailable due to funding or logistics. Not selecting this sub-option means coverage levels selection in 2.1-2.4 would be mandatory.		
<i><b>Sub-Option 2: Wing Vessel Exemption</b></i>	Exempts wing vessels from IFM coverage targets, provided the vessel does not carry fish.		
<i><b>Sub-Option 3: 2 year Sunset</b></i>	Requires coverage targets to expire 2 years after implementation.		
<i><b>Sub-Option 4: 2 year Re-evaluation</b></i>	Requires coverage levels to be re-evaluated 2 years after implementation.		
<b>Herring Alternative 2.1: Herring Am 5</b>	100% NEFOP	100% NEFOP	100% NEFOP
<b>Herring Alternative 2.2: Permit-based A</b>	[50,75, 100%] ASM	[50,75,100%] ASM	[50,75,100%] ASM
<b>Herring Alternative 2.3: Permit-based B</b>	[50,75,100%] ASM	EM/Portside	[50,75,100%] ASM
<b>Herring Alternative 2.4: Fleet-based</b>	SBRM (No Action)	EM/Portside	SBRM (No Action)
<b>Herring Alternative 2.5: Groundfish Closed Areas (Sub-options do not apply)</b>	N/A	100% NEFOP	N/A

Table 5. Herring Data Needs		HER Ait 1	HER Ait 2.1	HER Ait 2.2	HER Ait 2.3	HER Ait 2.4	HER Ait 2.5
		No Action (SBRM coverage only)	100% NEFOP on Category A and B Vessels	ASM (50, 75, or 100%) on Category A and B Vessels	EM/PRT on MWT Vessels  ASM (50, 75, or 100%) on other Category A and B vessels	EM/PRT on MWT vessels	100% NEFOP On MWT Vessels Fishing in Groundfish Closed Areas
Total herring catch accounting [ACL monitoring]	Verifying retained	<ul style="list-style-type: none"> <li>VTR Reports</li> <li>Dealer Reports</li> <li>VMS catch reports</li> <li>NEFOP observer coverage verifies location of fishing activity</li> </ul>	Information on location of fishing activity  Species composition data	Confirms retention  No species composition data on retained catch	ASM - Confirms retention  EM/PRT - Confirms retention; species composition data	Confirms retention  Species composition data	Information on location of fishing activity  Species composition data
	Quantifying discards	<ul style="list-style-type: none"> <li>VTR Reports</li> <li>VMS catch reports</li> <li>NEFOP observers</li> </ul>	Discard estimate  Species composition of discarded catch	Estimate and species composition data for discarded catch	ASM - Discard estimate; species composition data od discarded catch  EM - Flags discarding	Flags discarding	Discard estimate  Species composition of discarded catch
Non-target catch accounting	Haddock catch cap monitoring [ACL monitoring]	<ul style="list-style-type: none"> <li>VTRs used for total retained</li> <li>VMS catch reports</li> <li>NEFOP observers collect species comp data and estimate discards</li> <li>Affidavits detail why slippage occurs</li> </ul>	Species composition data to track catch against catch caps  Data on both retained and discarded catch	Estimate and species composition data on discarded catch	ASM - Estimate and species composition data on discarded catch  EM/PRT - Confirms retention; species composition data to track catch against catch caps	Confirms retention  Species composition data to track catch against catch caps	Species composition data to track catch against catch caps  Data on both retained and discarded catch
	River herring and shad catch cap monitoring	<ul style="list-style-type: none"> <li>VTRs used for total retained</li> <li>VMS catch reports</li> <li>NEFOP observers collect species comp data and estimate discards</li> <li>Affidavits detail why slippage occurs</li> </ul>	Species composition data to track catch against catch caps  Data on both retained and discarded catch	Estimate and species composition data on discarded catch	ASM - Estimate and species composition data on discarded catch  EM/PRT - Confirms retention; species composition data to track catch against catch caps	Confirms retention  Species composition data to track catch against catch caps	Species composition data to track catch against catch caps  Data on both retained and discarded catch
Scientific information	Stock assessments for herring	<ul style="list-style-type: none"> <li>VTR reports</li> <li>NEFOP observers collect age/length data</li> </ul>	Age and length data	Age and length data on discarded catch	ASM - Age and length data on discarded catch  EM/PRT - Age and length data	Age and length data on retained catch	Age and length data
	Stock assessments for non-target species	<ul style="list-style-type: none"> <li>VTR reports</li> <li>NEFOP observers collect age/length data</li> </ul>	Age and length data	Age and length data on discarded catch	ASM - Age and length data on discarded catch  EM/PRT - Age and length data	Age and length data on retained catch	Age and length data
	Spawning information	<ul style="list-style-type: none"> <li>VTR reports</li> <li>NEFOP observers collect age/length data</li> </ul>	Age and length data	Age and length data on discarded catch	ASM - Age and length data on discarded catch  EM/PRT - Age and length data	Age and length data on retained catch	Age and length data

## Current Range of Mackerel Alternatives

Mackerel Alternative 1: No coverage target specified for industry-funded monitoring programs (No action)

Mackerel Alternative 2: Coverage target specified for industry-funded monitoring programs. The coverage alternatives below include options to either allow waivers, which would allow vessels to fish if monitoring coverage were not available due to logistics or funding, or to not allow waivers, which would limit effort to match the specified coverage target if monitoring coverage were not available due to logistics or funding.

### *Permit-based alternatives:*

- 100% NEFOP-equivalent coverage on limited access midwater trawl & Tier 1 small-mesh bottom trawl (SMBT); 50% coverage on Tier 2 SMBT; 25% on Tier 3 SMBT
- 100% At-sea monitor (with river herring and shad sampling) coverage target on limited access midwater trawl and Tier 1 SMBT mackerel vessels
- 75% At-sea monitor (with river herring and shad sampling) coverage target on limited access midwater trawl and Tier 1 SMBT mackerel vessels
- 50% At-sea monitor (with river herring and shad sampling) coverage target on limited access midwater trawl and Tier 1 SMBT mackerel vessels

### *Fleet-based alternatives:*

- NEFOP-equivalent Percentage Coverage on Midwater Trawl Fleet to achieve a 30% CV on river herring and shad catch (2013 estimate is 51-61% coverage necessary)
- 100% NEFOP-equivalent coverage on Midwater Trawl Fleet
- Electronic Monitoring and Portside Sampling on Midwater Trawl Fleet

### *Other alternatives/Options:*

- Allow a wing vessel to be exempt from monitoring coverage. These vessels would be prohibited from carrying fish.
- Allow waivers, which would allow vessels to fish if monitoring coverage were not available due to logistics or funding, or prohibit waivers, which would limit effort to match the specified coverage target if monitoring coverage were not available due to logistics or funding.
- Selected coverage levels expire in 2 years after implementation.
- Re-evaluation of coverage levels 2 years after implementation.

## Suggested Revisions to Mackerel Alternatives

<b>Fishery</b>	<b>Mackerel</b>			
<b>Gear Type</b>	<b>MWT</b>	<b>SMBT</b>	<b>SMBT</b>	<b>SMBT</b>
<b>Permit Categories</b>	<b>All LA Tiers</b>	<b>Tier 1</b>	<b>Tier 2</b>	<b>Tier 3</b>
<b>Mackerel Alternative 1:</b> No Action	SBRM	SBRM	SBRM	SBRM
<b>Mackerel Alternative 2:</b> Coverage Targets for IFM Program	Requires selection of sub-options (1-4) and coverage alternatives (2.1-2.4).			
<i><b>Sub-Option 1:</b> Waiver Allowed</i>	Allows waivers to be issued if coverage is unavailable due to funding or logistics. Not selecting this sub-option means coverage levels selection in 2.1-2.4 would be mandatory.			
<i><b>Sub-Option 2:</b> Wing Vessel Exemption</i>	Exempts wing vessels from IFM coverage targets, provided the vessel does not carry fish.			
<i><b>Sub-Option 3:</b> 2 year Sunset</i>	Requires that coverage levels expire 2 years after implementation.			
<i><b>Sub-Option 4:</b> 2 year Re-evaluation</i>	Requires that coverage levels be re-evaluated 2 years after initial implementation.			
<b>Mackerel Alternative 2.1:</b> MSB Am 14	100% NEFOP	100% NEFOP	50% NEFOP	25% NEFOP
<b>Mackerel Alternative 2.2:</b> Permit-based A	[50,75,100%] ASM	[50,75,100%] ASM	SBRM (No Action)	SBRM (No Action)
<b>Mackerel Alternative 2.3:</b> Permit-based B	EM/Portside	[50,75, 100%] ASM	SBRM (No Action)	SBRM (No Action)
<b>Mackerel Alternative 2.4:</b> Fleet-based	EM/Portside	SBRM (No Action)	SBRM (No Action)	SBRM (No Action)

Table 7. Mackerel Data Needs		MAK Alt 1	MAK Alt 2.1	MAK Alt 2.2	MAK Alt 2.3	MAK Alt 2.4
		No Action (SBRM coverage only)	100% NEFOP on MWT and Tier 1 SMBT  50% NEFOP on Tier 2 SMBT  25% NEFOP on Tier 3 SMBT	ASM (50, 75, or 100%) on MWT and Tier 1 SMBT	EM/PRT on MWT  ASM (50, 75, or 100%) On Tier 1 SMBT	EM/PRT on MWT Vessels
Total herring catch accounting [ACL monitoring]	Verifying retained	<ul style="list-style-type: none"> <li>VTR Reports</li> <li>Dealer Reports</li> <li>VMS catch reports</li> <li>NEFOP observer coverage verifies location of fishing activity</li> </ul>	Information on location of fishing activity  Species composition data	Confirms retention  No species composition data on retained catch	ASM - Confirms retention  EM/PRT - Confirms retention; species composition data	Confirms retention  Species composition data
	Quantifying discards	<ul style="list-style-type: none"> <li>VTR Reports</li> <li>VMS catch reports</li> <li>NEFOP observers</li> </ul>	Discard estimate  Species composition of discarded catch	Estimate and species composition data for discarded catch	ASM - Discard estimate; species composition data of discarded catch  EM - Flags discarding	Flags discarding
Non-target catch accounting	Haddock catch cap monitoring [ACL monitoring]	<ul style="list-style-type: none"> <li>VTRs used for total retained</li> <li>VMS catch reports</li> <li>NEFOP observers collect species comp data and estimate discards</li> <li>Affidavits detail why slippage occurs</li> </ul>	Species composition data to track catch against catch caps  Data on both retained and discarded catch	Estimate and species composition data on discarded catch	ASM - Estimate and species composition data on discarded catch  EM/PRT - Species composition data on retained catch	Confirms retention  Species composition data to track catch against catch caps
	River herring and shad catch cap monitoring	<ul style="list-style-type: none"> <li>VTRs used for total retained</li> <li>VMS catch reports</li> <li>NEFOP observers collect species comp data and estimate discards</li> <li>Affidavits detail why slippage occurs</li> </ul>	Species composition data to track catch against catch caps  Data on both retained and discarded catch	Estimate and species composition data on discarded catch	ASM - Estimate and species composition data on discarded catch  EM/PRT - Species composition data on retained catch	Confirms retention  Species composition data to track catch against catch caps
Scientific information	Stock assessments for mackerel	<ul style="list-style-type: none"> <li>VTR reports</li> <li>Dealer data</li> <li>NEFOP observers collect age/length data</li> </ul>	Age and length data	Age and length data on discarded catch	ASM - Age and length data on discarded catch  EM/PRT - Age and length data	Age and length data on retained catch
	Stock assessments for non-target species	<ul style="list-style-type: none"> <li>VTR reports</li> <li>NEFOP observers collect age/length data</li> </ul>	Age and length data	Age and length data on discarded catch	ASM - Age and length data on discarded catch  EM/PRT - Age and length data	Age and length data on retained catch
	Spawning information	<ul style="list-style-type: none"> <li>VTR reports</li> <li>NEFOP observers collect age/length data</li> </ul>	Age and length data	Age and length data on discarded catch	ASM - Age and length data on discarded catch  EM/PRT - Age and length data	Age and length data on retained catch

## **Updates to IFM Economic Analysis for Herring and Mackerel Vessels**

A previous version of the discussion document included analyses of the economic impacts of herring and mackerel coverage target alternatives. Those analyses were based on trip cost data collected via NEFOP and showed the impact of the alternatives on net revenues (gross revenues less trip costs). Because the observer program collects a limited amount of cost data, industry participants expressed concern that the impact estimation may not reflect the true impacts. In response, Jason Didden, staff of the Mid-Atlantic Fishery Management Council, offered to administer a survey of herring and mackerel vessels to collect more detailed cost information.

The survey asks vessel owners about all of their fishing costs incurred in 2014. In addition to the observer collected costs (fuel, food, oil, ice, water, supplies, bait, and damage) the cost survey collects information on the cost of repairs/maintenance, insurance, payments to crew, and mooring/dockage. These data will be used to update the impact analyses. Data will be averaged across vessel types, in terms of vessel characteristics and primary species caught, to profile representative vessels. The cost profiles of representative vessels, as adjusted by the estimated observer costs of each alternative, will be used to illustrate economic impacts. Surveys were sent to approximately 18 vessel owners (representing about 28 vessels) in the herring and/or mackerel fisheries. Surveys were sent in May and it is expected that completed surveys will be returned by the end of June. The cover letter and survey are included in the appendix to this document.

### **RFP for cost estimates for the Herring/Mackerel ASM and Portside Monitoring Program**

The Mid-Atlantic Council graciously agreed to fund a Request for Funding Proposal (RFP) to generate cost estimates for the herring and mackerel portside and at-sea monitoring programs. A similar RFP was used to solicit electronic monitoring cost estimates for an example midwater trawl fleet and program design. The RFP was released on May 14, 2015, and is included in the appendix. The program cost estimates would have been used to analyze the economic impacts of industry-funded portside and at-sea monitoring programs on limited access herring and mackerel permit holders.

In order to maintain confidentiality of the individual service providers providing portside and at-sea monitoring program cost estimates, the RFP stipulated that the project would not be funded unless at least three acceptable applications were submitted. The Mid-Atlantic Council only received two applications from service providers, so the PDT/FMAT was unable to use this method to generate cost estimates for the herring and mackerel portside and at-sea monitoring programs. Instead, the PDT/FMAT will instead use cost information from publicized estimates of industry cost responsibilities for the portside monitoring program, and the industry cost responsibility for the groundfish at-sea monitoring program, to complete the economic analysis of the various herring and mackerel coverage target alternatives.

## Estimate of industry cost responsibilities associated with herring and mackerel monitoring types

This discussion document is focused on industry cost responsibilities. The full analysis for this action will include estimates for both NMFS and industry cost responsibilities.

<b>Table 8.</b>	<b>NEFOP</b>	<b>ASM</b>	<b>EM</b>	<b>Portside</b>
Per Seaday Cost to Industry	\$816	\$710 (max)	[PENDING]	\$106

### Description of assumptions used to generate estimates of industry cost responsibilities

*NEFOP Observer Cost Estimate.* The \$818 per seaday industry cost responsibility related to NEFOP-type observer coverage is based on at-sea monitoring costs from October 2012 through May 2014 averaged across the three service providers. The program elements and activities covered in this cost would include, but are not limited to, costs to the provider for deployments and sampling (e.g., travel and salary for observer deployments and debriefing), equipment, costs to the provider for observer time and travel to a scheduled deployment that doesn't sail and was not canceled by the vessel prior to the sail time, and provider overhead (see cost responsibility description in appendix for additional details).

*Herring/Mackerel At-Sea Monitor Cost Estimate.* The \$710 per seaday industry cost responsibility related to the proposed herring/mackerel at-sea monitoring program is based on the current seaday rate for the groundfish at-sea monitoring program. As described in the Draft Discussion Document re. Options for Industry-Funded Monitoring in the Herring Fishery, the design of the herring/mackerel at-sea monitoring program may result in a lower seaday rate than the groundfish at-sea monitoring program rate. In the absence of an estimate specific to the herring/mackerel at-sea monitoring program, the PDT/FMAT determined that using the groundfish at-sea monitoring seaday rate was most appropriate.

*Herring/Mackerel Midwater Trawl Portside Monitor Cost Estimate.* In the absence of an estimate specific to the herring/mackerel midwater trawl portside monitoring program, this document provides a cost estimate of \$106 per seaday based on publicized estimates for other dockside monitoring programs (see below). In particular, the estimate is influenced by the industry costs for the Northeast Multispecies dockside monitoring program. The industry costs of a dockside monitoring program are generally broken into several components: Program management and overhead costs of the provider company; travel costs for the monitor to travel from home or office to offload port, for non-principle ports; and hourly salary for the monitor, including, in some instances, waiting time at the dock.

The Fisheries Monitoring Roadmap (Lowman et al., 2013) provides per seaday rates of \$51 and \$82 for dockside monitoring for the British Columbia Hook and Line Groundfish fishery and the Pacific Groundfish (non-whiting) IFQ fishery, respectively. The average cost per pound of groundfish landed for the Northeast Multispecies groundfish dockside monitoring program range ranged from \$0.006 - \$0.12 per pound for all sectors. The average cost *per landing event*

ranged from \$36.87 - \$212.32 for all sectors. The average cost per pound landed and per trip is inversely related to the average pounds landed – that is, larger trips are less expensive to monitor, by pound, than smaller trips. This was due to several factors, including that larger trips typically landed in a principle port (no roving monitor required and, depending on the location, no travel costs) and much of the cost of providing a monitor is fixed, due to the logistics of having monitors present while vessels land their catch (e.g., insurance, administrative costs).

*Herring/Mackerel Midwater Trawl Electronic Monitoring Cost Estimate.* NMFS has been working to generate cost estimates for a midwater trawl electronic monitoring program. The methodology used to generate the cost estimate is currently under external review.

## SECTION 3: Further development of EM and Portside Monitoring Alternatives

### Part I: Electronic Monitoring Used to Confirm Retention on Midwater Trawl Trips

Under alternatives that include electronic monitoring, herring and mackerel permit holders using midwater trawl gear would be required to install EM equipment, and maintain the equipment on board for the duration of the fishing year. Though the system would have to be installed on the vessel year-round, it would only need to be turned on during declared herring or mackerel trips using midwater trawl gear.

Video imagery would be used to confirm retention on midwater trawl trips to ensure that all catch is available to be sampled portside for a given trip. Video footage would be recorded around haulback (e.g., not for the full duration of the trip), based on gear sensors. For analysis purposes, haulback would be defined as the time gear sensors document the start of gear deployment to some set amount of time (e.g., 30 minutes) after the time gear sensors sense the end of deployment, in order to ensure that all catch has been transferred into the hold. In addition, one wide angle camera would remain on for the duration of the trip to monitor for discard compliance.

At least initially, video footage would neither be used to identify species, nor estimate the amount of catch released if a haul were slipped. The Councils or NMFS may expand the uses of video footage to include species identification or quantification of released catch in the future if video imagery proves useful for these purposes. Such an expansion would be done via a framework amendment.

#### Equipment

The EM system installed by a NMFS-approved contractor would be comprised of video camera(s), recording equipment, and other related equipment with the following components and capabilities:

- Video cameras. Video cameras would need to be mounted to provide a clear, unobstructed, well illuminated views of the area(s) where the midwater trawl gear is retrieved prior to being placed in the hold. There would need to be a sufficient number of cameras with sufficient resolution for NMFS, the USCG, and other authorized officers/designees to determine that all catch was brought aboard the vessel after haulback. The EM system must be capable of initiating video recording at the time gear retrieval starts, and record all periods of time when the gear is being retrieved and until catch is placed in the hold or discarded.
- GPS receiver. A GPS receiver would be required to document coordinates, velocity, and heading data.

- Hydraulic and drum rotation sensors. Hydraulic sensors would be required to continuously monitor the hydraulic pressure. Drum rotation sensor would be required to continuously monitor drum rotations.
- EM control box. The system would need to include a control box that receives and stores the raw data provided by the sensors and cameras. The control box would need to contain removable hard drives and storage systems adequate to record data for the full duration of a trip (i.e., the longest expected trip length for the vessel).
- EM systems monitor. A wheelhouse monitor would be necessary to provide a graphical user interface for the harvester to monitor: 1) the state and performance of the control box, 2) information on the current date and time synchronized via GPS, 3) GPS coordinates, 4) current hydraulic pressure reading, 5) presence of a data disk, 6) percentage used of the data disk, 7) and video recording status.

NMFS would announce specifics about this equipment list, as well as any additional design requirements for the EM system, during the rulemaking and implementation process. Industry will be responsible for contracting with a NMFS-approved provider for technical and maintenance services.

### **Individual vessel monitoring plans (IVMPs)**

IVMPs would serve as a clear plan for discard documentation, installation and maintenance, protocols for data storage and transfer, and other important information regarding a vessel's EM system. Each vessel operator/owner would be responsible for working with NMFS or a NMFS-approved contractor to develop an IVMP, and would be required to keep the IVMP aboard the vessel at all times. NMFS would specify IVMP requirements in the regulations. IVMPs contents may include, but are not limited to, information on the locations of EM system components; contact information for technical support; instructions on how to conduct a pre-trip system test; instructions on how to verify proper system functions; location(s) on deck where fish retrieval should occur to remain in view of the cameras; procedures for how to manage EM system hard drives; catch handling procedures; periodic checks of the monitor during the retrieval of gear to verify proper functioning; reporting procedures. The IVMP should minimize, as much as possible, any impact on the current operating procedures of the vessel, and should help ensure the safety of the crew. The IVMP would be reviewed bi-annually or upon adjustment by NMFS or a NMFS-approved contractor.

### **Data transfer**

Within 48 hours of completing a fishing trip, the vessel owner or operator would be required to mail or transmit the removable EM system hard drive(s) containing all data to NMFS or a NMFS-approved contractor, according to instructions provided by NMFS. The method of transfer that would be allowed under the EM program will be developed during implementation. Prior to departing on a subsequent trip, the vessel owner or operator would be required to install a replacement EM system hard drive(s) to enable data collection and video recording. The vessel owner or operator would be responsible for contacting NMFS or NMFS-approved contractor if

they have requested but not received a replacement hard drive(s) and for informing NMFS or NMFS-approved contractor of any lapse in the hard drive management procedures described in the IVMP.

### **Retention requirements**

Initially, this alternative would maintain the status quo retention requirements for the midwater trawl fleet. Vessels would continue to operate under the regulations and possession limits for any fisheries for which they possess permits. There is currently a prohibition on slippage on observed trips taken by vessels holding limited access herring and mackerel permits. There are also some statutory measures under the ESA and MMPA that dictate retention of protected species.

Future options for retention requirements include maximized retention and optimized retention. Under maximized retention, a vessel would be required to land all fish, including target and non-target species, excluding protected and/or prohibited species. Optimized retention could require retention of target species, but allow some discarding of certain non-target species (such as dogfish). There are a number of challenges with these retention options (such as defining the list of species to which the program would apply, how non-permitted/unmarketable landings would be handled) that can be revisited in a future action once the program has been in operation for some period of time. NMFS may use the IVMPs in lieu of regulatory changes to adjust retention requirements.

### **Review of EM Video Footage**

Video footage of haulback events would be subsampled at some predetermined percent of review (e.g., 10 percent, 25 percent and 50 percent of haulback events), and compared to [released catch affidavits or VMS reports] describing slippage events that occurred on given trips. Relatively high rates of review may be required to confirm slippage is not happening at all because they are relatively rare. The rate of review will be determined by NMFS during implementation in cooperation with Council staff, but is not specified in this action because it may be more appropriate for managers of the data to determine the optimum and most cost effective rate to achieve the management goal.

### **Compliance measures**

Review subsampling could be increased based on compliance results. For example 100percent review of all haulbacks for particular vessels may be conducted if a vessel is found to have not fully documented a slippage event for a given trip. The additional video review would be an added cost to a fisherman.

If a vessel is found to have undocumented slippage events during haulback on more than a specified number of trips during a fishing year, then the vessel would be subject to 100 percent haulback review for all subsequent fishing trips at the fishermen's expense for the remainder of

the season and the next season, or until NMFS has determined that review levels can return to the original specified level.

## **Part II: Portside Sampling Used to Verify Amount and Species Composition of Landed Catch on Midwater Trawl Trips**

Under alternatives that include portside sampling, herring and mackerel permit holders using midwater trawl gear would be subject to portside sampling requirements for declared herring and mackerel trips using midwater trawl gear. Portside sampling would be used to verify the amount and species composition of catch in the herring and mackerel fisheries and help track catch against catch caps for haddock and river herring/shad.

### **Sampling Design**

The sampling design for portside sampling alternatives would be based on existing portside sampling programs for the herring fishery, administered by the states of Massachusetts and Maine, and consistent with NEFOP sampling methodology. Midwater trawl vessels returning from a declared herring or mackerel trip would be sampled portside during the offload. The level of sampling for midwater trawl trips is still being determined, but it would either be 100 percent of midwater trawl trips or another specified percentage of midwater trawl trips. It is anticipated that basket samples would be collected from the vessel's dewater box at specified intervals throughout the duration of the offload. Basket samples would be sorted and weighed by species and extrapolated to represent the total trip based on vessel haul weight. Actual weights could be verified against the vessel trip report and/or dealer data. Age and length data would be collected consistent with NEFOP sampling methodology.

### **Landing Ports**

Midwater trawl vessels returning from declared herring or mackerel trips would be required to land catch in specific ports. In past years, the midwater trawl fleet has landed catch in Maine (Portland, Rockland, Vinalhaven, Prospect Harbor, Jonesport, Milbridge), New Hampshire (Newington), Massachusetts (Boston, Gloucester, New Bedford), Rhode Island (Point Judith, North Kingston), and New Jersey (Cape May). The list of specific landing ports and the details of offloading requirements in those ports would be developed as part of this amendment. Alternatives that include portside sampling are not intended to restrict the landing and offloading behavior of midwater trawl vessels. Certain logistics, including weather patterns that influence the timing and location of landing, and infrastructure limitations at certain landing ports, may prevent the program from achieving 100 percent coverage in the initial year, even if funding is not an issue.

### **Vessel Responsibilities**

Midwater trawl vessels would be responsible for offloading catch consistent with offloading requirements and contracting with a service provider to arrange a portside sampler to sample catch from declared herring and mackerel trips.

## **Service Provider Models**

The service provider models for portside sampling are still being developed. Potential models include a formalized Federal/state agreement to administer the portside sampling program for midwater trawl vessels, such as training, scheduling, guidelines for data collection, data processing, and data reports, with service providers only being responsible for the actual data collection. Another potential model would require service providers to administer the entire portside sampling program for the midwater trawl fleet as well as the actual data collection. The availability of Federal funding to help administer the program dictates what type of observer service provide model would be used. The type of service provider model would affect industry cost responsibilities. If Federal funding is available to help administer the portside sampling program, then the industry would only be responsible for paying the costs associated with service providers collecting the portside sampling data. If Federal funds are not available to help administer the program, then service provider costs of administering the program and collecting the data would be passed along to the industry.