
PUBLIC HEARING SUMMARY DOCUMENT

Northeast Region Standardized Bycatch Reporting Methodology

An Omnibus Amendment to the
Fishery Management Plans
of the Mid-Atlantic and New England
Regional Fishery Management Councils

November 14, 2006, Gloucester, MA

December 13, 2006, New York, NY



Schedule of Public Hearings

Date & Time	Location
Tuesday, November 14, 2006 5:30 p.m.	Tavern on the Harbor, 30 Western Ave., Gloucester, MA 01930 Phone: (978) 283-4200
Wednesday, December 13, 2006 7:00 p.m.	Skyline Hotel, 725 10 th Ave. New York, NY 10019 Phone: (212) 586-3400

You can download an electronic version of the Draft SBRM Amendment from the Northeast Regional Office website at: www.nero.noaa.gov/nero/hotnews/omnibus/.

Print copies of the Public Hearing Draft SBRM Amendment are also available upon request from the offices of the New England Fishery Management Council, the Mid-Atlantic Fishery Management Council, or the NOAA Fisheries Northeast Regional Office.

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How to Submit Comments

You may comment at the public hearings, or submit written comments to:

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You may fax your comments to:

Patricia A. Kurkul, at (978) 281-9135

You may also submit your comments electronically via email to:

SBRMcomment@noaa.gov

Please indicate on your correspondence, "Comments on SBRM Amendment."

Written comments must be received by **5:00 p.m., December 29, 2006.**

Your comments are invited on all aspects of the SBRM Amendment document, including the draft Environmental Assessment. This includes the description of the fishing modes used as the basis for SBRM analyses; the bycatch reporting mechanisms identified, reviewed, and considered in the amendment; the sampling design and other analyses conducted in support of this amendment; the management alternatives, including the Councils' preferred alternatives, designed to establish and implement the Northeast Region SBRM; and the description of the affected environment and analysis of the expected environmental consequences.

Table of Contents

Schedule of Public Hearings i

How to Submit Comments ii

Table of Contents iii

Introduction and Background1

 What are the Councils and NOAA Fisheries Service proposing? 1

 What FMPs does this action affect?..... 1

 Why is this amendment is being developed?..... 1

 What is bycatch?..... 3

 Why are we concerned with bycatch? 3

 What is meant by a “standardized” bycatch reporting methodology?..... 4

 What types of discards are we concerned with? 4

 What is the focus of this amendment? 5

 Will this amendment address the reporting of protected species caught as bycatch? .. 5

 How is the SBRM amendment organized?..... 5

 What makes for a good SBRM? 6

 How are precision and accuracy measured?..... 6

 What factors affect the precision and accuracy of an SBRM? 8

 What analysis was conducted for the SBRM?..... 9

 What is the purpose of the public hearing process?..... 10

Management Alternatives11

 Introduction..... 11

 What are the preferred alternatives? 11

 The No Action Alternative..... 12

 Item 1: Bycatch reporting and monitoring mechanisms 12

 Item 2: Analytical Techniques and Allocation of Observers..... 14

 Item 3: SBRM Standard..... 16

 Item 4: SBRM Review/Change Process 17

 Summary of Preferred Alternatives 18

Impacts of the Alternatives19

 Effects of the Alternatives on Biological Resources 19

 Effects of the Alternatives on the Physical Environment (Habitat)..... 20

 Socio-Economic Effects of the Alternatives..... 20

 Summary of Cumulative Effects Associated with the Preferred Alternatives..... 22

References.....24

Introduction and Background

What are the Councils and NOAA Fisheries Service proposing?

Section 303(a)(11) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires that all FMPs include provisions establishing “a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery.” This amendment is intended to ensure that all fishery management plans (FMPs) developed by the Mid-Atlantic and/or New England Fishery Management Councils (Councils) fully comply with this requirement of the Act.

What FMPs does this action affect?

This is an omnibus amendment that will amend all 13 FMPs developed by the Mid-Atlantic and New England Councils. This action affects six FMPs for which the Mid-Atlantic Council has the lead:

- Atlantic Bluefish;
- Atlantic Mackerel, Squid, and Butterfish;
- Spiny Dogfish (joint with the New England Council);
- Summer Flounder, Scup, and Black Sea Bass;
- Surfclam and Ocean Quahog; and
- Tilefish.

This action affects seven FMPs for which the New England Council has the lead:

- Atlantic Herring;
- Atlantic Salmon;
- Atlantic Sea Scallop;
- Deep-Sea Red Crab;
- Monkfish (joint with the Mid-Atlantic Council);
- Northeast Multispecies; and
- Northeast Skates.

See Table 1 for a list of the affected FMPs and the managed species for each.

Why is this amendment is being developed?

In 2003, the New England Council submitted two FMP amendments to NOAA Fisheries Service: Amendment 13 to the Northeast Multispecies FMP and, separately, Amendment 10 and Framework Adjustment 16 to the Atlantic Sea Scallop FMP. Both of these amendments and the framework adjustment proposed substantial changes to the management structures for the groundfish and sea scallop fisheries, including new areas

closed to fishing, changes to and reductions in allowable fishing days-at-sea (DAS), and new fishing gear requirements, among other things. Both amendments and the framework adjustment were approved in 2004, and plaintiffs Oceana, the Conservation Law Foundation, and the Natural Resources Defense Council filed suit in the U.S. District Court for the District of Columbia challenging several aspects of Amendment 13. Oceana also later filed suit challenging several aspects of Amendment 10 and Framework 16. In both suits, the Court found the SBRM elements of the amendments and the framework to be inconsistent with the provisions of the Magnuson-Stevens Act.

FMP	Managed Species
Atlantic Bluefish	Atlantic bluefish (<i>Pomatomus salatrix</i>)
Atlantic Herring	Atlantic herring (<i>Clupea harengus</i>)
Atlantic Salmon	Atlantic salmon (<i>Salmo salar</i>)
Deep-Sea Red Crab	deep-sea red crab (<i>Chaceon quinquegens</i>)
Mackerel, Squid, and Butterfish	Atlantic mackerel (<i>Scomber scombrus</i>) longfin squid (<i>Loligo pealeii</i>) shortfin squid (<i>Illex illecebrosus</i>) butterfish (<i>Peprilus triacanthus</i>)
Monkfish	monkfish (<i>Lophius americanus</i>)
Northeast Multispecies	<u>LARGE-MESH</u> American plaice (<i>Hippoglossoides platessoides</i>) Atlantic cod (<i>Gadus morhua</i>) Atlantic halibut (<i>Hippoglossus hippoglossus</i>) haddock (<i>Melanogrammus aeglefinus</i>) ocean pout (<i>Zoarces americanus</i>) pollock (<i>Pollachius virens</i>) redfish (<i>Sebastes faciatius</i>) white hake (<i>Urophycis tenuis</i>) windowpane (<i>Scopthalmus aquosus</i>) winter flounder (<i>Pseudopleuronectes americanus</i>) witch flounder (<i>Glyptocephalus cynoglossus</i>) yellowtail flounder (<i>Limanda ferruginea</i>) <u>SMALL-MESH</u> offshore hake (<i>Merluccius albidus</i>) red hake (<i>Urophycis chuss</i>) silver hake/whiting (<i>Merluccius bilinearis</i>)
Northeast Skate Complex	barndoor skate (<i>Dipturus laevis</i>) clearnose skate (<i>Raja eglanteria</i>) little skate (<i>Leucoraja erinacea</i>) rosette skate (<i>Leucoraja garmani</i>) smooth skate (<i>Malacoraja senta</i>) thorny skate (<i>Amblyraja radiata</i>) winter skate (<i>Leucoraja ocellata</i>)
Sea Scallop	Atlantic sea scallop (<i>Placopecten magellanicus</i>)
Spiny Dogfish	spiny dogfish (<i>Squalus acanthias</i>)
Summer Flounder, Scup, Black Sea Bass	black sea bass (<i>Centropristis striata</i>) scup (<i>Stenotomus chrysops</i>) summer flounder (<i>Paralichthys dentatus</i>)
Surfclam and Ocean Quahog	Atlantic surfclam (<i>Spisula solidissima</i>) ocean quahog (<i>Arctica islandica</i>)
Tilefish	golden tilefish (<i>Lopholatilus chamaeleonticeps</i>)

Table 1. List of affected FMPs and managed species.

In *Oceana, Inc., et al., v. Donald L. Evans, et al.*, challenging Amendment 13, the Court found that the amendment failed to fully evaluate reporting methodologies to assess bycatch, did not mandate a standardized bycatch reporting methodology (SBRM), and failed to respond to potentially important scientific evidence. In *Oceana, Inc., v. Donald L. Evans, et al.*, challenging Amendment 10 and Framework 16, the Court similarly found that the amendment and framework did not fully evaluate reporting methodologies, did not sufficiently address potentially important scientific evidence, and did not mandate a methodology for bycatch monitoring. In both cases, the Court remanded to the Secretary for further action the SBRM aspects of Amendment 13 and Amendment 10.

Therefore, in order to comply with the two Court Orders, NOAA Fisheries Service and the New England Council must amend the Northeast Multispecies and Atlantic Sea Scallop FMPs to ensure they comply with the SBRM provisions of the Magnuson-Stevens Act. Because many bycatch reporting and monitoring methods apply to and are interrelated with all Northeast Region fisheries, and because some of the weaknesses in the SBRM aspects of Amendment 13 and Amendment 10 may exist in other Northeast Region FMPs, NOAA Fisheries Service and both Councils have agreed to amend all Northeast Region FMPs in one “omnibus” amendment. Specifically, the purpose of this amendment is to:

- Explain the methods and processes by which bycatch is currently monitored and assessed in Northeast Region fisheries;
- Determine whether those methods and processes need to be modified or supplemented;
- Establish standards of precision for bycatch estimation for all relevant fisheries; and
- Document the SBRM established under every FMP in the region.

What is bycatch?

The Magnuson-Stevens Act defines bycatch as “fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards.” It goes on to say that bycatch “does not include fish released alive under a recreational catch and release fishery management program.” The law defines fish as “finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds.” Therefore, the term bycatch includes all discards of finfish, shellfish and other invertebrates, sea turtles, marine plants, corals, etc., but does not include marine mammals or seabirds.

Why are we concerned with bycatch?

For most, if not all, fisheries, some proportion of discards die as a result of being caught and/or being discarded. The mortality rate of discarded catch is not known for many resource species and can vary under different conditions. Bycatch can affect fisheries and fishery resources in several important ways:

- (1) Uncertainty related to the amount and mortality of discards increases the uncertainty associated with stock assessments, diminishing managers' ability to accurately set and achieve optimum yield from a fishery;
- (2) Time spent sorting and discarding unwanted catch reduces the efficiency of fisheries; and
- (3) Mortality of discarded fishery resources precludes other, more valuable, uses of those resources (as future landings, prey for other species, etc.).

In some fisheries, catch rates of unwanted fish, or the mortality rates of discarded fish, may be sufficiently low that bycatch problems are minimal. In other fisheries, however, if both the catch rates of unwanted fish and the mortality of the discards are sufficiently high, bycatch problems may warrant management attention.

What is meant by a “standardized” bycatch reporting methodology?

An SBRM is the combination of sampling design, data collection procedures, and analyses used to estimate bycatch and to determine the most appropriate allocation of observers across the relevant fishing modes (NMFS 2004). Although the Magnuson-Stevens Act includes the requirement for an SBRM, it does not define or explain what is meant by a “standardized” reporting methodology. The provision does not require regional or national standardization, but the requirement applies to each FMP for the fishery managed under it. The methodology used could, therefore, vary from one gear type to another, as long as the bycatch reports yield compatible data. For example, under one FMP, a dock intercept interview survey may be the most appropriate method to collect bycatch data in a shore-side recreational fishery, while an at-sea observer program may be the most appropriate method used to collect bycatch data from commercial fishing vessels. Under this definition, as long as the bycatch data reporting and collection is standardized for each reporting/collection method (i.e., the dock intercept survey is done the same way for all participants in the relevant fishery), then the Magnuson-Stevens Act requirement for an SBRM would be satisfied.

What types of discards are we concerned with?

Fish are discarded for a variety of reasons:

- Because the regulations prohibit retention under all circumstances (e.g., barndoor skates);
- Because they are smaller than the regulated minimum size (e.g., summer flounder smaller than 14 inches);
- Because a possession limit for one species has already been reached but fishing has continued for other species;
- Because there is no market for that species (e.g., sculpin);

- Because they have low economic/market value relative to other fish the fishermen would rather catch and land (e.g., small skates for the bait market versus large skates for the wing market); or
- Simply because they are less desirable than the target species.

Fish that are discarded because of the regulations are called regulatory discards. Fish that are discarded based on economic decisions or personal choices made by the fisherman are called economic discards. Both types of discards represent bycatch that must be accounted for, and all bycatch reporting methods considered in this amendment must address both types. Where practicable, it is useful for the bycatch reporting mechanism to indicate the reason for the discards (regulatory or economic).

What is the focus of this amendment?

While it is important to understand the distinction between regulatory and economic discards, the reasons for discarding fish are not the focus of this amendment. This amendment, in itself, does not attempt to describe the root causes of discards nor does it aim to prevent them. The scope of this amendment is limited to programs for monitoring and analyzing bycatch; the focus is limited to the SBRM provision of the Magnuson-Stevens Act. Any further action(s) that may be warranted to address bycatch reduction in one or more of the region's FMPs will be the subject of separate action by the Councils and NOAA Fisheries Service.

Will this amendment address the reporting of protected species caught as bycatch?

As noted above, the Magnuson-Stevens Act specifically excludes marine mammals and seabirds from its definitions of fish and bycatch, but includes sea turtles. Thus, for the purposes of this amendment, the SBRM will not specifically address reporting methodologies for marine mammals or seabirds. However, NOAA Fisheries Service has similar obligations under the MMPA and ESA, so where these obligations are interrelated with the provisions of the Magnuson-Stevens Act, this amendment identifies existing methods used to identify, report, and monitor interactions with marine mammals and seabirds. Because sea turtles are specifically included in the Magnuson-Stevens Act definitions of fish and bycatch, this amendment addresses the reporting and monitoring of sea turtles caught as bycatch in the subject fisheries.

How is the SBRM amendment organized?

Usually, the FMP is the operational unit used for managing a fishery (or collection of fisheries) that targets the species or species group. For example, regulations promulgated under the Summer Flounder, Scup, and Black Sea Bass FMP address commercial and recreational fishing activities along the Atlantic coast of the U.S. that target summer flounder, scup, and/or black sea bass, no matter what type of fishing gear is used. Thus, the minimum fish size for summer flounder landed by commercial vessels is 14 inches, regardless of whether a fish is caught with an otter trawl, a gillnet, or on hook and line. Similarly, the total allowable catch for black sea bass applies jointly to the commercial

and recreational fishing sectors, also without regard to the fishing gear used. While the FMP works very well as the operational unit for devising and implementing fishing regulations, it is not the most efficient or appropriate operational unit for devising and implementing an SBRM.

The most efficient designs for collecting information on and monitoring discards recognize and incorporate the unique characteristics of each fishery. For example, commercial fishing vessels operating out of New England ports that use gillnets often target monkfish, skates, and some groundfish species. Even though monkfish, skates, and groundfish fishing regulations are implemented under three separate FMPs, in many cases the same vessels are catching and landing these species. It would be inefficient to develop three separate bycatch sampling strategies and protocols to implement on such a vessel. Instead, the goal is to develop an SBRM that most effectively captures the discards associated with the New England gillnet fishery. For that reason, the operational unit for an efficient SBRM is the *fishing mode*, defined according to the fishing gear used and the area from which the vessels depart, rather than by FMP. See Table 2 for a list of the 39 fishing modes used as the basis for the Northeast Region SBRM.

What makes for a good SBRM?

The primary purpose of bycatch reporting and monitoring is to collect information that can be used reliably as the basis for making fishery management decisions. The first step in understanding the scope and extent of any bycatch problems that may be associated with a fishery is to establish the means by which information on discards in the fishery can be collected. Scientists and managers must be able to ensure that the discards information collection program is sufficiently precise and accurate to identify and address the relevant scientific and management needs (e.g., that the available information on bycatch allows for reliable stock assessments on which management decisions are based).

Thus, a “good” SBRM is a set of reporting and monitoring mechanisms through which data and information on discards occurring in all relevant fisheries are obtained such that reasonably precise and accurate estimates of discard rates and total discards can be generated for use in stock assessments (where appropriate) and fisheries management (where needed). Determining the adequacy of a bycatch reporting methodology generally involves analyzing the precision and accuracy of the resulting bycatch estimates.

How are precision and accuracy measured?

It is important to understand that precision and accuracy are not the same thing and that they represent related, but different, aspects of a data collection program. Accuracy is defined as the closeness of a measured or estimated value to its actual value while precision is defined as the degree of agreement of repeated measurements of the same quantity or object.

Fishing Mode	Primary Regulating FMPs	Average Number of Vessels	Avg Total Landings (million lb)	Top 3 Species Landed
NE/MA Clam Dredge	Surfclam and Ocean Quahog	87.0	6.82**	ocean quahog; surfclam
NE Crab Pot	Deep-Sea Red Crab	7.4	3.04	red crab; Jonah crab; other crabs
MA Crab Pot	(none)	8.2	0.08	blue crab; red crab; menhaden
NE Fish Pot	Summer Flounder, Scup, Black Sea Bass	41.8	0.56	hagfish; black sea bass; scup
MA Fish Pot	Summer Flounder, Scup, Black Sea Bass	61.8	0.90	black sea bass; tautog; whelks
NE Small-mesh Gillnet	NE Multispecies	25.6	0.10	pollock; cod; monkfish
MA Small-mesh Gillnet	Atlantic Bluefish	101.2	3.84	Atl. croaker; bluefish; menhaden
NE Large-mesh Gillnet	NE Multispecies; Spiny Dogfish; Monkfish	168.0	12.75	cod; pollock; spiny dogfish
MA Large-mesh Gillnet	Spiny Dogfish; Atlantic Bluefish	83.4	1.49	smooth dogfish; bluefish; spiny dogfish
NE Extra-large-mesh Gillnet	NE Multispecies; Monkfish; Skate Complex	130.2	14.21	monkfish; skates; cod
MA Extra-large-mesh Gillnet	Monkfish; Skate Complex	100.2	6.20	monkfish; skates; striped bass
NE Handline/Rod & Reel	NE Multispecies; Summer Flounder, Scup, Black Sea Bass	679.2	2.69	cod; bluefin tuna; scup
MA Handline/Rod & Reel	Summer Flounder, Scup, Black Sea Bass; Atlantic Bluefish	513.0	2.88	black sea bass; scup; bluefish
NE Lobster Pot	(none)	657.0	22.16	lobster; Jonah crab; rock crab
MA Lobster Pot	(none)	103.4	1.32	lobster; Jonah crab; black sea bass
NE Bottom Longline	Spiny Dogfish; NE Multispecies	77.2	3.73	spiny dogfish; cod; haddock
MA Bottom Longline	Golden Tilefish	15.8	1.52	tilefish; cod; swordfish
NE Pair Trawl	Atlantic Herring; Mackerel, Squid, Butterfish	13.8	141.55	Atl. herring; Atl. mackerel; spiny dogfish
NE Midwater Trawl (single)	Atlantic Herring; Mackerel, Squid, Butterfish	17.0	68.19	Atl. herring; Atl. mackerel; <i>Illex</i> squid
MA Pair Trawl	Mackerel, Squid, Butterfish; Atlantic Herring	6.3	23.40	Atl. mackerel; Atl. herring; chub mackerel
MA Midwater Trawl (single)	Mackerel, Squid, Butterfish; Atlantic Herring	6.0	10.69	Atl. mackerel; Atl. herring; blueback herring
NE Small-mesh Otter Trawl	Mackerel, Squid, Butterfish; NE Multispecies	225.0	58.49	<i>Loligo</i> squid; silver hake; <i>Illex</i> squid
MA Small-mesh Otter Trawl	Mackerel, Squid, Butterfish; NE Multispecies	171.4	38.62	<i>Loligo</i> squid; <i>Illex</i> squid; silver hake
NE Large-mesh Otter Trawl	NE Multispecies; Monkfish; Skate Complex	533.2	100.85	skates; monkfish; cod
MA Large-mesh Otter Trawl	Summer Flounder, Scup, Black Sea Bass; NE Multispecies; Skate Complex	224.8	11.12	summer flounder; winter flounder; skates
NE Purse Seine	Atlantic Herring	9.2	48.09	Atl. herring; bluefin tuna; menhaden
MA Purse Seine	(none)	4.4	18.48	menhaden; silversides; redfish
NE Scallop Dredge	Sea Scallop; Monkfish	296.2	27.12	sea scallops; monkfish; sea cucumbers
MA Scallop Dredge	Sea Scallop; Monkfish	183.8	21.69	sea scallops; monkfish; whelks
NE Scallop Trawl	Sea Scallop	3.0	0.04	sea scallops; monkfish; winter flounder
MA Scallop Trawl	Sea Scallop	42.2	3.10	sea scallops; horseshoe crabs; summer fl.
NE Scottish Seine	NE Multispecies	N/A	N/A	silver hake; cod; winter flounder
NE Shrimp Trawl	(none)	175.2	3.33	Pandalid shrimp; other shrimp; American plaice
MA Shrimp Trawl	(none)	51.4	2.63	Pandalid shrimp; summer fl.; sea scallops

Table 2. Summary information on the fishing modes used as the basis for the SBRM analyses. Averages generally reflect data from 2000-2004. Top species are based on the cumulative landings from 2000-2004. (Clam dredge landings are given in millions of bushels.)**

Precision is a measure of how closely repeated samples agree to one another (i.e., the variability of the samples), and accuracy is an indication of how closely the estimate derived from the samples will agree with the true value. The precision of a sampling program can be calculated because the data collected can be compared with one another using several basic statistical methods. However, the accuracy of the data rarely can be

measured because the true value of the population feature being estimated is not known (which is why it is being estimated).

In a sampling program such as the at-sea observer program, the precision of the observations can be measured and controlled by calculating measures of variability and, if necessary, increasing the number of observations. While accuracy cannot be directly measured, it can be accounted for by reducing potential sources of bias in the data collection program. Bias is defined as a systematic difference between the expected value of a statistical estimate and the quantity it estimates. Absent bias, precision will lead to accuracy; thus, bias and accuracy are used interchangeably, but bias is generally associated with the design of sampling program. Eliminating potential sources of bias improves the accuracy of the results.

What factors affect the precision and accuracy of an SBRM?

Many factors will affect the precision of bycatch estimates. The frequency and regularity with which a discarded species is encountered has a significant effect on precision. Frequent, regular encounters can be estimated with greater precision and will realize a lower coefficient of variation (CV)¹ than will estimates of rare, irregular events. For the purposes of fishery stock assessments, bycatch estimates with the lowest possible CV are most desirable. Of course, obtaining the desired level of precision with regard to rare events may require a level of bycatch monitoring (observer coverage) that is cost-prohibitive or otherwise impracticable to achieve.

There are generally two primary potential sources of bias in a sampling program such as the at-sea observer program: Non-representative sampling; and the statistical properties of the consistency of the estimators (Rago et al. 2005). Non-representative sampling means that the targets of the sampling program (i.e., the vessels and trips on which an observer is present) are distinct and different from the overall population for which an estimate is desired. For example, if observers were placed only on small vessels fishing just offshore using a single gear type, these trips would not be representative of the variety of vessels, fishing gears, trip lengths, and fishing locations that comprise the wider fleet. The SBRM Amendment explains the many ways in which the Northeast Fisheries Observer Program (NEFOP) strives to ensure that the observer program samples (observes) the Northeast Region fishing fleets in a representative manner. The amendment also addresses the statistical properties of the estimators, and provides evidence that there is very little bias associated with the data collected by the at-sea observers.

¹ A CV is a standard measure of precision, calculated as the ratio of the square root of the variance of the bycatch estimate (i.e., the standard error) to the bycatch estimate itself. The higher the CV, the larger the standard error is relative to the estimate. A lower CV reflects a smaller standard error relative to the estimate. A 0-percent CV means there is no variance in the sampling distribution. Alternatively, CVs of 100 percent or higher indicate that there is considerable variance in the estimate. Chapter 5 of the SBRM Amendment describes several ways in which the variances of the data and the estimates can be minimized, including stratifying the sampling frame and optimizing sampling effort.

What analysis was conducted for the SBRM?

The SBRM provides a structured approach for evaluating the effectiveness of the allocation of fisheries observer effort across multiple fisheries to monitor a large number of species. Several specific analyses were conducted to calculate a measure of the variance associated with the data collected by fisheries observers and to determine the most appropriate fisheries observer coverage levels and the optimal allocation of observer effort across the fisheries in order to minimize the variance to the degree practicable. Given a target level of data precision desired by fisheries scientists and managers, fisheries observer coverage levels can be calculated that would be expected to provide data of the desired precision. Both precision and accuracy are addressed in analyses conducted using observer data and to determine the appropriateness of the data for use in stock assessments and by fishery managers.

To develop estimates of total bycatch, analysts looked at data on 45 different fishing modes in the Northeast Region and discard rates of 60 species/species groups of fish, sea turtles, marine mammals, and sea birds. The data came from the 2004 observer database and fishing vessel trip report (FVTR) data. To expand the observed data into estimates of total bycatch, analysts used two ratio estimators:

- Observed discards to days absent (d/da); and
- Observed discards to pounds kept (d/k);

and three computational methods:

- Separate ratio method;
- Combined ratio method; and
- Simple expansion method.

Using the two ratios and three methods, analysts made six separate estimates of total bycatch for each mode (and species/species group with each mode). In general, the six separate estimates of total discards were comparable for each ratio estimator and computational method that was used. More detail about the analytical methods is provided in Chapter 5 of the SBRM Amendment document.

The precision associated with all six estimates for each fleet and species/species group combination was examined. Again, precision levels were determined to be comparable for each estimator and method. In the end, the *combined ratio* method was selected using *discard-to-kept pounds* ratio. Data for kept pounds are more easily verified than data for days absent, and the combined ratio method better utilized information associated with kept pounds.

A CV of 30 percent was selected as a target level of precision based upon the recommendation of the National Working Group on Bycatch (NMFS 2004). The number of observed sea days (and trips) necessary to achieve a CV of 30 percent for species was derived for each fleet and species/species group combination. The total estimated

number of sea days necessary to achieve a 30 percent CV exceeded 33,000 days. Analyses were also performed to evaluate potential sources of bias in the 2004 NEFOP data. There was no evidence of a systematic bias in the amount of kept pounds, trip duration, or area fished between the NEFOP and FVTR data.

What is the purpose of the public hearing process?

NOAA Fisheries Service and the Councils are seeking public comments on all management alternatives proposed in the Omnibus SBRM Amendment. This public hearing summary is an abbreviated version of the amendment document and omits descriptions of Northeast Region fisheries, the affected FMPs, fishery gear/area sector modes, and the affected human and natural environment. Comments are requested from the public on any part of the draft amendment. In accordance with the National Environmental Policy Act, NOAA Fisheries Service has prepared a draft environmental assessment (EA) that evaluates the potential biological, economic, and social impacts the proposed alternatives may have on human and natural environments. NOAA Fisheries Service and the Councils seek comments from the public on the EA, as well.

The public will have several more opportunities to comment on the SBRM Amendment. The initial public comment period will close on December 29, 2006. After consideration of public comment, NOAA Fisheries Service and the Councils will prepare a final amendment document. It will be discussed and considered for approval by the Councils at public meetings in February 2007. Once submitted to NOAA Fisheries Service, the final SBRM Amendment will be available for another round of public review and comment, and proposed regulations will be published in March 2007. Final regulations are expected to be published in June 2007.

Management Alternatives

Introduction

The SBRM to be established for the FMPs of the Northeast Region would specify how bycatch data are to be collected and analyzed and how observer sea days will be allocated across fishing gear modes. The amendment would also establish a standard of precision for the SBRM, and it would require a schedule and method for review and reporting on the SBRM itself. The four principal parts of the SBRM are:

- Item 1 – The suite of bycatch reporting and monitoring mechanisms used to collect bycatch-related data.
- Item 2 – The analytical techniques or procedures used to develop estimates of the precision associated with bycatch data.
- Item 3 – The performance measure (standard) used to determine the adequacy of the data collected.
- Item 4 – The process by which an analysis and report on the SBRM will be prepared and submitted to the Councils and NOAA Fisheries Service.

For each major SBRM item, two or three alternatives are under consideration by the Councils. In some cases, there are options available for consideration within an alternative.

What are the preferred alternatives?

A management alternative or independent measure identified as “preferred” reflects the Councils’ favored approach to implementing an SBRM in each FMP. The following sections identify the alternatives, including the preferred alternatives, considered by the Councils for each of the above items.

The Joint Council SBRM Oversight Committee developed the alternatives that are presented in the draft SBRM Amendment and recommended a suite of preferred alternatives for the Councils to consider. At its meeting on September 27, 2006, the New England Council approved the draft amendment document and, thus, endorsed the SBRM Committee’s preferred alternatives. The Mid-Atlantic Council did likewise at its meeting on October 12, 2006.

It is important to note, however, that the Councils have not yet made final decisions on the SBRM Amendment. Following public hearings and the Councils’ consideration of input from the public, the Councils may revise their choices of preferred measures, but may do so only within the bounds of the range of alternatives presented in the draft amendment document. Public comments on all the alternatives – even the non-preferred

measures – will help the Councils determine which measures should be submitted to the Secretary of Commerce in the final SBRM Amendment.

The No Action Alternative

In this amendment, the “no action alternative” is considered to be an outcome in which the Councils and NOAA Fisheries Service decline (or fail) to develop, submit, approve, and implement an SBRM Amendment that documents and establishes those components of a bycatch reporting program required under the law. However, because Court rulings require NOAA Fisheries Service specifically to correct deficiencies in the SBRM under the Atlantic Sea Scallop and Northeast Multispecies FMPs, and because the Magnuson-Stevens Act requires that an SBRM be established for every FMP, the “no action alternative” is not a reasonable alternative for this action and is not formally considered or analyzed in this document.

Although the “no action alternative” as defined above is not formally considered, the “status quo” is formally considered and analyzed. Bycatch data are currently being collected by a number of mechanisms on a variety of Northeast Region fisheries. These data are currently being utilized in stock assessments and are currently available to managers. Even without this amendment, these data would continue to be collected and utilized by managers and stock assessment scientists. Therefore, for the purposes of this amendment, the “status quo” is considered to represent the currently utilized data collection mechanisms and analytical procedures that provide data and information on bycatch in the Northeast Region. Furthermore, the status quo alternatives will provide the baseline against which other alternatives are compared and analyzed.

The status quo is not limited to the methods by which at-sea observer trips and days are currently allocated. The status quo is the totality of all the ways in which data and information related to discards are currently collected, monitored, and analyzed. Thus, alternatives described below that would affirmatively and formally establish a current mechanism, procedure, or practice as a component of the Northeast Region SBRM are called the “status quo” alternatives. Alternatives that would modify, supplement, or replace the current program are named for their most distinguishing characteristic.

Item 1: Bycatch reporting and monitoring mechanisms

Alternative 1.1 – Status quo (*Preferred Alternative*)

Under this preferred alternative, the bycatch reporting and monitoring mechanisms currently utilized would continue to be utilized with no changes or additions. The various data collection mechanisms that comprise the status quo are tiered based on the relevance of the data to bycatch. As summarized in Table 3, the preferred alternative proposes four tiers of information collection and monitoring as part of the SBRM for use by fishery scientists and managers to better understand and address the scope and nature of bycatch in Northeast Region fisheries. The currently used data collection mechanisms are well established and have a rigorous analytical framework supporting their use (see Chapters 4 and 5 of the SBRM Amendment, as well as Rago et al. 2005). The status quo

alternative does not preclude the eventual addition of other data collection mechanisms (such as electronic video monitoring, see Tier 4 of Table 3), but these mechanisms would not be required under this amendment.

<p>Tier 1: Primary Sources of Fishery Discard Information</p> <ul style="list-style-type: none"> • At-sea fishery observers • Marine Recreational Fishery Statistics Survey² • Vessel monitoring system reports • Fishing vessel trip reports (limited) 	<p>Tier 2: Primary Sources of Fishery-Related Information</p> <ul style="list-style-type: none"> • Fishery-independent surveys • Seafood dealer purchase reports • Port Agent sampling • Fishing vessel trip reports
<p>Tier 3: Supplemental Sources of Discard and Fishery-Related Information</p> <ul style="list-style-type: none"> • Industry-based surveys • Study fleets • Alternate platforms 	<p>Tier 4: Potential Future Sources of Discard and Fishery-Related Information</p> <ul style="list-style-type: none"> • Electronic video monitoring • Image capture and processing • Specialized monitoring programs

Table 3. Preferred alternative fishery information collection and monitoring in the Northeast Region SBRM.

2.2.2 Alternative 1.2 – Implement Electronic Monitoring

This alternative would require that one additional bycatch information collection mechanism be implemented as part of the SBRM—electronic monitoring. Electronic monitoring involves the use of fixed placement, high resolution, and tamper resistant video cameras on board fishing vessels that record digital video data of fishing operations to large capacity computer hard drives. This alternative does not propose *replacing* any status quo mechanism, but would reflect an *expanded* suite of data collection mechanisms to include some form of this developing technology, beyond the pilot programs and further study currently planned.

Although detailed information about ongoing bycatch reporting and monitoring mechanisms is available, less is known about electronic monitoring as a potential bycatch reporting and monitoring tool in the region. To date, electronic monitoring has been demonstrated as most successful in providing presence/absence data or providing simple visual data (e.g., a marine mammal interacting with fishing gear). These types of data are of limited utility in the Northeast Region as most stock assessments require detailed biological data such as length-at-age. This does not mean that electronic monitoring could not be utilized effectively as a bycatch monitoring tool; however, it does mean that new ways of incorporating electronic monitoring data would first have to be designed and tested before an electronic monitoring program is implemented. Also, there is concern that the estimated costs of an electronic monitoring program may equal or surpass the cost of an onboard observer program—particularly in light of the start up costs associated with a new program (Kinsolving 2006).

² The MRFSS program is currently undergoing a system-wide programmatic review by NOAA Fisheries Service. This review is a direct result of the assessment conducted by the National Research Council, and is intended to address the issues raised in this assessment. This review is being conducted on a National scale and has potentially far-reaching implications for how recreational fishery data are collected and analyzed. For the purpose of this amendment, it is assumed that MRFSS or its replacement will continue to serve as the primary tool to collect information on discards in all recreational fisheries subject to the Northeast Region SBRM.

Item 2: Analytical Techniques and Allocation of ObserversAlternative 2.1 – Status quo

This alternative proposes to make no changes to the analytical techniques employed to estimate total discards, calculate the precision of discard estimates, and allocate at-sea fishery observers. Observers would continue to be allocated using, among other means, the optimization tool described in Appendix A of the amendment document. Available observer sea days would first be allocated to programs with observer coverage levels prescribed by regulation or court order (e.g., Northeast Multispecies FMP special access programs and the B-Regular days-at-sea program). Remaining available observer sea days would then be allocated to the remaining fishery modes based on the optimization tool and other factors, such as special requests of a Council or an unforeseen circumstance or problem that arises in a fishery.

Alternative 2.2 – Status quo with Importance Filter (*Preferred Alternative*)

The preferred alternative would function the same as the status quo alternative for estimating total discards and calculating the precision of discard estimates, but would add an “importance filter” to the process to determine the appropriate allocation of observer effort within each fishing mode. Under the status quo alternative, the observer coverage allocation for each fishing mode would be the highest projected number of observer sea days needed to achieve the target CV for each species or species group. However, one of the limitations of the status quo method is that it focuses on precision of estimates and does not allow for the relative importance of the magnitude of the bycatch for a species. The importance filter is intended to illuminate that distinction, and to aid in establishing observer sea day allocations that are more meaningful and efficient at achieving the overall objectives of the SBRM and the at-sea observer program.

An importance filter, in this context, is a criteria-based tool applied to the projected observer sea days needed to achieve the CV standard. It is specifically designed to “weed out” particular combinations of fishing gear and bycatch species where the infrequency and variable amounts of discards would result in very high observer sea day coverage levels, despite the actual magnitude of bycatch being of no real consequence to the discarded species.

The importance filters would be applied to data on each fishing gear mode in the region with regard to each of the 15 relevant species and species groups and would function as follows:

- (1) The first filter (called the gray-cell filter) would remove from consideration combinations of species and gear types in which encounters are infeasible or extremely unlikely; e.g., red crab in the New England mid-water trawl mode;
- (2) The second filter would eliminate species when the realized CV, based on the latest dataset analyzed to calculate the CV, is 30 percent or less (i.e., successfully achieved the standard), but the projected observer sea days

exceeds the number of days actually observed in the year(s) in which the standard was achieved;

- (3) The third filter would eliminate species when the discards of that species in a mode are less than a specified minimum percentage of the total discards for that mode; and
- (4) The fourth filter would eliminate species when the total discards of that species in a mode are less than a certain minimum percentage of the total landings of that species in all fisheries combined.

The two most important aspects of the design and application of the importance filter are the criteria selected as the filters (e.g., the discards of the species relative to the total discards in the fishing mode, and the discards of the species relative to the total landings of that species in all fisheries), and the threshold levels established within each filter. At this time, threshold levels are not proposed for the suggested filters. Finalizing the observer coverage analyses is first required in order to ensure that any proposed threshold levels are appropriate given the results of the analyses. These thresholds will be presented in the final version of the SBRM Amendment after review by all appropriate technical groups and the two Councils.

The primary benefit of the importance filter alternative is to ensure that the observer program can be applied to the subject fisheries in as cost effective a manner as possible. By eliminating combinations of gear modes and species where (1) it is infeasible or exceedingly rare that the species would be encountered in the gear, (2) the CV standard has been achieved for fewer days than projected, or (3) the likely impact of the discards of the species in the gear is negligible, observer sea days would be more efficiently allocated across all fisheries. There is an element of a cost-benefit assessment to this exercise, however, as by “eliminating” species, the result would be to accept that the CV standard may not be met for the filtered species. The importance filter is designed to function without reference to annual budgets or available observer resources. The importance filter would establish meaningful observer sea day coverage levels for each fishing mode. Budgets can, and often do, shift as a result of National priorities, and in any given year, the available resources may not support full implementation of the established allocations.

Alternative 2.3 – Minimum Percentage Observer Coverage

This alternative would establish a set minimum percentage of observer coverage for each fishery. Under this alternative, the current observer sea day allocation procedure (including the optimization tool, among other means, to minimize the overall CV) would be replaced by a process whereby fisheries that discard species considered “common” would have a target observer coverage rate of 20 percent of all trips, and fisheries that discard “rare” species would have a target observer coverage rate of 50 percent of all trips. Implementation of this alternative would require further consideration of the most appropriate way in which to define rare versus common species.

This alternative is intended to address concerns regarding the potential for bias in the bycatch data and to ensure sufficient sampling levels to provide more precise and accurate bycatch data (Babcock et al. 2003). However, several concerns regarding this approach have been identified (Methot 2005; Rago et al. 2005). One specific criticism of the approach proposed in Babcock et al. (2003) is that the particular recommendation for a default level of coverage is not linked to any particular management need or set of funding or logistical constraints. The expectations for precision vary based on how the data are used, and realizations of precision vary by species and fishing mode.

Babcock et al. (2003) point to default observer coverage levels as a tool to address or minimize bias in the observer sampling. However, this presumes that there is a substantial bias in the data, and that the bias is not a direct result of the presence of the observer on the vessel but rather is of the type that may be addressed by increases in sampling size. As noted in Chapter 5 of the SBRM Amendment, the Northeast Fisheries Science Center has investigated the potential for bias in the observer data and concluded that any such bias is minimal. Also, if bias exists occurs and is actually due to the presence of the observer on the vessel, then neither improved randomization nor increased sample size (higher observer coverage levels) would remove the bias.

Item 3: SBRM Standard

Alternative 3.1 – Status Quo

Currently, bycatch monitoring and analysis practices in the Northeast Region do not have a performance standard specified in an FMP or elsewhere. Under this alternative, that would not change – the SBRM Amendment would not specify a CV as a performance measure or standard against which to judge the adequacy of the bycatch estimates. This alternative would not preclude the establishment of target CVs at some time in the future.

Alternative 3.2 – Establish a CV SBRM Standard (*Preferred Alternative*)

The preferred alternative would establish a performance measure to ensure that the bycatch-related data collected under the SBRM and utilized in stock assessments and management are adequate for those tasks. This preferred alternative would require, as a performance measure of the SBRM, that the Northeast Region SBRM be sufficient to attain a CV of no more than 30 percent for each applicable fishing mode. The 30 percent CV standard would apply, at least initially, to all applicable fishing modes for each species group. This SBRM standard addresses the precision of the estimates, not the accuracy of the estimates. For a detailed discussion of precision and accuracy, see Chapter 5 of the SBRM Amendment.

While the status quo process for optimizing the observer sea day allocation across fisheries for several fishing gear types (otter trawl, gillnet, and longline) uses a CV of 30 percent as its target, this feature is neither explicitly specified nor considered a formal component of the SBRM. Under alternative 3.2, the CV standard would be explicitly specified for all relevant combinations of gear type and species or species groups as a formal component of the SBRM. Of these two alternatives, only the preferred alternative

would remedy a legal deficiency found by the court in Amendment 13 to the Northeast Multispecies FMP; to wit, that the FMP did not contain any standards as part of an SBRM.

Item 4: SBRM Review/Change Process

Alternative 4.1 – Status Quo

Under this alternative, the SBRM Amendment would neither include any specific process or requirement to conduct periodic reviews of the effectiveness of the SBRM, nor would it specify or suggest any particular process to be used by the Councils and/or NOAA Fisheries Service to determine whether a target CV should be changed, or whether additional steps are necessary to improve the SBRM.

Alternative 4.2 – Specify an SBRM Review Process (*Preferred Alternative*)

This preferred alternative would establish a periodic review process through which the Councils and NOAA Fisheries Service would consider the effectiveness of the SBRM and, if necessary, take appropriate steps to improve the SBRM. The periodic review process established for the SBRM would specify how and when the Councils and NOAA Fisheries Service would review information regarding the effectiveness of the SBRM relative to the CV standard.

The information to be provided in the report for the purpose of determining the effectiveness of the SBRM in meeting the CV standards should not be confused with the level of information a Council may want or need to address specific management issues. More detailed discard-related information, structured in a way and at a scale meaningful for the particular management issue, can always be provided at the Councils' request.

This preferred alternative would also specify the periodicity of the SBRM review process. There are three options relative to the periodicity with which the review process is conducted:

- Option 1 – Annually;
- Option 2 – Every 5 years; and
- Option 3 – SAFE Report schedule.

The information provided to the Councils in the SBRM Report would indicate when and where any lack of precision around a bycatch estimate is different from the CV standard and whether this difference may be problematic for stock assessments or management decisions. With this information in hand, the Councils could initiate an action to change the appropriate SBRM standard and/or recommend management measures to address the problem.

Summary of Preferred Alternatives

SBRM Element	Alternatives Under Consideration		
1. Bycatch Reporting and Monitoring Mechanisms	Status quo		Implement electronic video monitoring
2. Analytical Techniques and Allocation of Observers	Status quo	Status quo with importance filter	Minimum percent observer coverage
3. SBRM Standard	Status quo		Establish a CV standard
4. SBRM Review/Report Process	Status quo		Specify an SBRM review and reporting process

Table 4. Summary of alternatives under consideration for the Omnibus SBRM Amendment. Preferred alternatives are shaded.

Impacts of the Alternatives

The SBRM Amendment defines the Northeast Region SBRM as the collection and analysis of bycatch data, the establishment of a standard for precision, the allocation of at-sea observers, and the review and reporting on bycatch data collection and analysis. It does not propose to alter fishing practices in any way. Future management actions that may result from the information collected under the SBRM cannot be anticipated now, but any actions that do result would be subject to all legal analytical requirements at the time the actions are developed.

Due to the types of actions being considered to comply with the SBRM provision of the Magnuson-Stevens Act, this amendment is wholly administrative in nature—focused on the procedures and mechanisms by which data and information on the types and rates of bycatch occurring in Northeast Region fisheries are obtained and utilized by scientists and fishery managers. Subsequently, there are no expected direct physical or biological impacts associated with the alternatives under consideration, particularly for the preferred alternatives. As described below, there are some potential economic effects associated with an alternative for bycatch reporting and monitoring, but, overall and due to the nature of the program to be implemented through this amendment, there very few functional differences (as far as environmental effects generally considered in an EA are concerned) between the status quo alternatives and the other alternatives under consideration.

Effects of the Alternatives on Biological Resources

Because the alternatives considered under the four SBRM items deal entirely with the administrative mechanisms by which data and information regarding fishery discards are collected and analyzed, the performance standard for the SBRM, and the type and frequency of an SBRM reporting process, none of the alternatives under consideration would affect the level of fishing effort, fishing operations, the species targeted, or areas or times fished in the Northeast Region. The preferred alternatives would impose no additional requirements or changes to current fishing practices.

The electronic monitoring alternative of item 1, while it would introduce a new bycatch monitoring technology, would impose no regulatory changes or constraints to the how, where, what, or when of fishing operations, but would only require the purchase and installation of an additional piece of electronic equipment on fishing vessels. The implications to biological resources of the item 2 alternatives for changes in observer coverage levels across the fishing modes that may be linked to differences in how observer effort is allocated is negligible. If some fishing vessels alter their behavior in the presence of a fishery observer (e.g., to avoid a bycatch “hot spot” when an observer is present), then there may be some tangential impacts to some species, but, as described in Chapter 5 and Appendix A of the SBRM Amendment, evidence of such an “observer

effect” is minimal for Northeast Region fisheries. The remaining items focus entirely on ensuring our ability to evaluate the effectiveness of the Northeast Region SBRM.

Therefore, there are no direct or indirect impacts on biological resources (including fishery resources, protected resources, and other non-fishery resources) associated with any of the alternatives under consideration in this amendment. As there are no biological impacts associated with any of the alternatives, there are no differences between them.

Effects of the Alternatives on the Physical Environment (Habitat)

Due to the administrative nature of the alternatives under consideration for the four SBRM items, none of the alternatives would impose or result in any changes in fishing effort or behavior, fishing gears used, or areas fished; therefore, there are no potential impacts to the physical environment (including essential fish habitat) associated with the alternatives. The preferred alternatives would impose no additional requirements or changes to current fishing practices and, similar to impacts on biological impacts, due to the nature of the alternatives considered for this item, there are no differences between alternatives as far as potential impacts on the physical environment (including essential fish habitat) of the Northeast Region.

Socio-Economic Effects of the Alternatives

For most of the alternatives under consideration for the four SBRM items, the administrative nature of the alternatives would impose or result in any changes in fishing effort or behavior, fishing gears required, or areas fished. Therefore, there are no direct or indirect socio-economic effects on fishing vessels, fleets, or ports anticipated for most alternatives, including the status quo alternative for reporting and monitoring mechanisms, the alternatives regarding whether or not to establish a performance measure of a 30 percent CV standard for the Northeast Region SBRM, and the alternatives regarding whether or not to establish a requirement for a periodic reporting and evaluation process for the Northeast Region SBRM.

Item 1 includes two alternatives addressing the mechanisms through which information on bycatch may be collected and reported. Alternative 1.2 would supplement the status quo bycatch reporting and monitoring mechanisms with an electronic video monitoring program. The economic impacts of a required electronic video monitoring program would include the expected costs to purchase, install, and maintain the electronic recording and archiving systems. Most likely, all of the costs of such a program would be borne by industry permit holders.

The cost to purchase a complete electronic video monitoring system would be approximately \$7,200 per vessel. Installation costs are highly variable and depend upon the size of the vessel, the number of cameras to be installed, and other complicating factors such as the need to retrofit the vessel to support the installation of the equipment. Installation costs are likely to range from \$650 to \$4,225 per vessel. In addition to the cost to purchase and install a system, it is expected that an annual registration fee would be required by the contractor providing the equipment and this is estimated to be

approximately \$600 per year. Maintenance costs would be expected to vary, but for the purposes of analysis, an estimate of \$975 per year is used (Kinsolving 2006). The total first year costs would be approximately \$10,200 per vessel, with continuing costs of approximately \$1,600 per vessel per year for the second year and beyond.

By multiplying the per-vessel cost information by the number of permit holders, a gross estimate of the overall cost to a fishery can be calculated (see Table 5). Since many vessels hold permits for several fisheries, estimating total costs region-wide is not quite as simple as summing the cost columns in Table 5. Also, requiring such a costly program may result in some participants withdrawing from in a fishery. The table does not include party/charter permits for any fisheries.

Type of Permit	Number of Permits	Fleet-wide Cost	
		Year 1	Year 2+
Atlantic Bluefish Open Access	3,766	\$38,563,840	\$5,961,578
Red Crab Limited Access	5	\$51,200	\$7,915
Red Crab Open Access	1,592	\$16,302,080	\$2,520,136
Atlantic Herring Limited Access	N/A	N/A	N/A
Atlantic Herring Open Access	2,754	\$28,200,960	\$4,359,582
Sea Scallop Limited Access	347	\$3,553,280	\$549,301
Sea Scallop Open Access	258	\$2,641,920	\$408,414
Black Sea Bass Limited Access	903	\$9,246,720	\$1,429,449
Dogfish Open Access	3,501	\$35,850,240	\$5,542,083
Monkfish Limited Access	1,495	\$15,308,800	\$2,366,585
Monkfish Open Access	2,355	\$24,115,200	\$3,727,965
NE Multispecies Limited Access	1,550	\$15,872,000	\$2,453,650
NE Multispecies Open Access	2,782	\$28,487,680	\$4,403,906
Scup Limited Access	851	\$8,714,240	\$1,347,133
Skate Open Access	2,741	\$28,067,840	\$4,339,003
Squid/Mackerel/Butterfish Limited Access	476	\$4,874,240	\$753,508
Squid/Mackerel/Butterfish Open Access	4,941	\$50,595,840	\$7,821,603
Summer Flounder Limited Access	988	\$10,117,120	\$1,564,004
Surfclam/Ocean Quahog Limited Access	61	\$624,640	\$96,563
Surfclam/Ocean Quahog Open Access	3,849	\$39,413,760	\$6,092,967
Tilefish Limited Access	28	\$286,720	\$44,324
Tilefish Open Access	2,289	\$23,439,360	\$3,623,487

Table 5. Number of permits by FMP permit category for 2005 calendar year, and the estimated total fleet costs associated with implementation of the electronic monitoring alternative.

The government would also incur significant costs to support a video monitoring requirement. Personnel would be required to obtain the video data from fishing vessels, to review the video footage, to oversee and perform quality control on the extracted data, and to archive and maintain the data. Video reviewing and data archiving equipment

would also be required. Thus, the costs to the government to implement an electronic monitoring program would likely be substantial.

Comparatively, the costs associated with the electronic monitoring alternative would be much greater than the status quo alternative that is proposed as the preferred alternative at this time. Future consideration of electronic monitoring programs would need to weigh the benefits of such a program against the substantial costs to both the fishing industry and the Federal government; although as technologies improve, some costs may decrease.

Because the alternatives considered under item 2 focus entirely on the process by which target observer coverage levels are determined and allocated across fishing modes, the only socio-economic impacts that could be associated with these alternatives would be for fisheries in which the fishing industry itself pays for the at-sea observers. In the Northeast Region, the fisheries observer program operates entirely through a contract service funded by NOAA Fisheries Service, with the single exception of the sea scallop industry-funded program currently operating under emergency regulations. In this program alone, increases in target observer coverage levels would increase initial costs to the vessels carrying observers. However, under the provisions of the regulations establishing the sea scallop industry-funded observer program, any vessel required to carry an observer is authorized either to catch and retain additional sea scallops above the standard possession limit or to have their DAS charged at a reduced rate in order to offset the costs associated with carrying the observer. Both the increased possession limit and reduced DAS rate are subject to the continued availability of a set-aside from the annual total allowable catch and fleet DAS allocation. Should the set-aside be exhausted, fishing vessels carrying observers in the special sea scallop management program would bear the full costs.

Aside from the sea scallop industry-funded observer program, no other industry-funded observer programs are authorized in the Northeast Region. Even the sea scallop program is temporary, as the emergency rule is scheduled to expire on December 13, 2006, unless continued for another 180 days. As the three alternatives considered for determining appropriate observer coverage levels and allocating observer effort operate independent of the budget process used to determine the available resources for funding observer coverage in any given year, there are no effective differences among the three alternatives regarding the socio-economic impacts that may be associated with these alternatives.

Summary of Cumulative Effects Associated with the Preferred Alternatives

As established above, the actions being considered in this amendment focus solely on the administrative processes through which data and information on bycatch occurring in Northeast Region fisheries are collected, analyzed, and reported to fishery scientists and managers. This amendment does not address bycatch reduction or other issues related to the management measures utilized in Northeast Region fisheries. Although aspects of the proposed SBRM have been implemented previously and utilized in many ways in recent years, the Court ruling that both Amendment 10 to the Sea Scallop FMP and Amendment 13 to the Northeast Multispecies FMP failed to fulfill the Magnuson-Stevens Act requirement to establish an SBRM is evidence that this action is unique in the Northeast

Region as the first action to propose the establishment of a comprehensive SBRM for the region.

In many ways, this action proposes to formalize the status quo mechanisms used in the Northeast Region to collect information and data on fisheries bycatch and to analyze bycatch data in order to effectively determine appropriate observer coverage levels and allocate observer effort across the many Northeast Region fisheries. For these components of the SBRM, there are no incremental impacts to any fishing areas or living marine resources associated with the proposed action, relative to the no action baseline. The three SBRM elements proposed in this amendment that diverge from the status quo—implementation of an importance filter to establish and allocated target observer coverage levels, establishment of an SBRM performance standard, and the requirement to conduct periodic evaluations and prepare a periodic SBRM report—are purely administrative features intended to improve the effectiveness and the transparency of the Northeast Region SBRM. None of these additional components are associated with impacts to any fishing areas or living marine resources within the Northeast Region that could be distinguished from the no action baseline. Therefore, given the limited and administrative nature of this action and the preferred alternatives, this action is not related to any other actions with individually insignificant but cumulatively significant impacts.

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