

**Standardized Bycatch Reporting Methodology
Proposed 2010 Observer Sea Day Allocation
Consultation and Prioritization Process
Response to Comments**

**Northeast Regional Coordinating Committee
May 11, 2010**

I. Introduction

The 2010 Standardized Bycatch Reporting Methodology (SBRM) sea day analysis¹ indicated that 14,147 sea days will be required to achieve a 30% coefficient of variation (CV) in the federal fisheries prosecuted in the New England (NE) and Mid-Atlantic (MA) regions. Based on the January provisional budget, there was a total of 10,965 funded days along with an estimated industry-funded 4,000 days for a total of 14,965 days for the April 2010 to March 2011 period. Although the total funded days exceed the SBRM performance standard sea days by 818 days, a shortfall for some fleets exists due to funding constraints. As required by the SBRM Omnibus Amendment when a shortfall exists, the 2010 SBRM prioritization of sea days for the April 2010 to March 2011 period was presented to the New England Council on January 28, 2010 and to the Mid-Atlantic Council on February 9, 2010. The Northeast Fisheries Center Science (NEFSC) and the Northeast Regional Office (NERO) have received comments² on the 2010 SBRM sea day prioritization from the Mid-Atlantic Fisheries Management Council (MAFMC); the NEFSC received comments from the NERO; the New England Fisheries Management Council (NEFMC) had no comments.

In this report, we provide a summary of the comments, specific responses to the comments, and where appropriate, the proposed revisions (re-prioritization of sea days). The revised budget now contains 11,821 agency-funded days along with 2,671 industry-funded sea days for a total of 14,492 days.

II. Funding available for the April 2010 to March 2011 period - Revised

There are two funding source categories: agency-funded and industry-funded. Within the agency-funded category, there are five sub-categories.

- **Agency-funded:** Based on the April 15, 2010 budget, the NEFSC has funds for 11,821 sea days. The funding sources for these sea days include: Atlantic Coast (644 days), New England Groundfish [3,488 Northeast Fisheries Observer Program (NEFOP) sea days, 5,991 At-Sea Monitoring (ASM) days funded in part by National Observer Program (NOP), and 765 days 'bought-ahead'], National Observer Program (394 days temporary

¹ Standardized Bycatch Reporting Methodology Sea Day Analysis and Prioritization 2010 (January 26, 2010) Available on-line at: <http://www.nefsc.noaa.gov/femad/fsb/SBRM%20Annual%20Discard%20Report/2010/2010-SBRM-Sea-Day-Analysis-Prioritization-01262010.pdf>

² MAFMC comments are available online at http://www.nefsc.noaa.gov/femad/fsb/SBRM%20Annual%20Discard%20Report/2010/SBRM_2010_Final.pdf

funding source), Reducing Bycatch (150 days), and Marine Mammal Protection Act (MMPA; 389 days). Each funding source has funding constraints (days targeted for specific species and/or data category).

- 542 days have been excluded from SBRM due to sampling protocols that are specific to protected species and are not applicable for fish. However, these days will provide observer coverage for sea turtles above that which is allocated within SBRM.
- 11,279 agency-funded days are applicable for SBRM. This represents a 904 day increase over the provisional January budget ($11,279 - 10,375 = 904$).
- **Industry-funded:** The number of industry-funded sea days available for monitoring of scallops depends on the total expected budget from the Research Set Aside program and the increase in landings allowed for vessels carrying observers (i.e., the compensation rate). A compensation rate analysis³ was undertaken to support observer coverage of the nine industry-funded scallop fleets. The nine industry-funded fleets are Rows 9, 10, 12, 26, 27, 28, 29, 32, and 33 (Table 1).
 - Based on the compensation rate analysis conducted in February 2010, a total of 2,971 sea days (with rounding) can be funded (1,410 days for Open areas, 333 days for Delmarva Access Area, 900 days for Elephant Trunk Access Area (ET AA) and 327 days for Nantucket Lightship Closed Area (NLCA).
 - Consideration of the pending Framework 21 regulations that reduce of number of trips to the ET AA from three trips to two trips, the number of sea days were proportionally scaled from 900 days to 600 days for this access area, thus 2,671 sea days are included in the 2010 SBRM.
 - The industry-funded schedule runs March 1 to February, a 12 month period that is shifted one month from the NEFOP sea day of April to March.
 - The letter to vessel owners (dated March 3, 2010) describing the set-aside compensation rate calculations indicates that compensation rates will be re-evaluated when SBRM is finalized.
 - Coverage of the nine fleets depends on industry activity among these fleets; however, caps have been established (Table 2).
 - 2,671 industry-funded days are included in the SBRM based on an initial compensation rate analysis conducted in February 2010.
 - Limited Access General Category (LAGC) open area fleets are not industry-funded fleets (Rows 11, 30, 31; Table 1).
- Revised SBRM total sea days equals 13,950 days.

³ Available on-line at: <http://www.nero.noaa.gov/nero/nr/nrdoc/10/10ScalObserveCompRates1.pdf> (Letter to vessel owners dated March 3, 2010)

Comparison of sea days between January and May, by funding source.

Funding Source	January	May
Agency-funded Total	10,965	11,821
Agency-funded applicable to SBRM	10,375	11,279
Agency-funded not applicable to SBRM	590	542
Industry-funded Total	4,000	2,671
SBRM Total	14,375	13,950

III. Summary of comments received

The MAFMC is concerned that proposed sea sampling intensity for the small-mesh trawl fisheries in the Southern New England and Mid-Atlantic region may not be sufficient to obtain an acceptable CV for butterfish bycatch in the directed *Loligo fishery*. Parenthetically we wish to emphasize that the ‘*Loligo fishery*’ is a sub-fleet of the SBRM MA small-mesh otter trawl fleet. The ‘*Loligo fishery*’ is defined based on the outcome of the trip, which is inconsistent with SBRM fleet definition. The *Loligo* fishery will however be “identifiable” under the provisions of the call-in program for Amendment 10.

The MAFMC also reiterated its request for coverage of fisheries that bycatch river herring. In the following sections we provide more details on the specific comments.

The NERO comments include a) the use of proper terminology when referring to the number of the sea days needed to achieve a 30%CV, the SBRM performance standard; b) a request for further explanation of funding constraints and justification of prioritized days; c) further explanation of the compensation rates; and d) a request to consider the MAFMC comments regarding the monitoring of the butterfish cap in the Mid-Atlantic fleets.

IV. Response to Comments

Proper terminology

In the 2009 and 2010 SBRM prioritization documents, the terms ‘recommended’ and ‘target’ have been improperly used when referring to the number of sea days needed to achieve the SBRM performance standard of 30%CV. The term ‘SBRM sea day performance standard’ will now be used when referring to the number of sea days required to achieve a 30%CV.

Funding Issues

As stated in previous SBRM prioritization documents, the shortfall in the Mid-Atlantic region has been an on-going issue since the beginning of the sea sampling program in the late 1980’s. Constraints associated with Congressional/Headquarters funding restrict its use to a particular region. These restrictions limit re-distribution of sea days between the Mid-Atlantic and New

England regions. The concerns expressed in the comments are directly related to a lack on funding. Any revisions of funding are policy matters beyond the scope of the Agency. Unrestricted funds would support of all FMPs under the SBRM Omnibus Amendment. The roles and responsibilities of NRCC agencies to identify funding sources or admissible changes in funding allocations are important policy considerations.

Compliance Issues

Observer monitoring of bycatch must meet multiple objectives that include: bycatch monitoring of individual species (fish and turtles), compliance monitoring of annual catch entitlements (ACEs) and quota-monitoring of hard TACs. SBRM focuses on monitoring to achieve acceptable measures of precision. Quota monitoring (including monitoring for compliance with regulations) is more challenging since increased coverage may be necessary to ensure more frequent in-season reports of discards rates. Monitoring rates for compliance with regulations, say B-Days, often must be higher to reduce the scope for potential bias in estimation. It must be emphasized that SBRM does not consider the additional monitoring requirements for compliance. Increases in monitoring for compliance issues are based on the expectation that the observed variability in discard rates will include the normal variation plus potential, but unquantified bias. Therefore these requirements are treated in a more ad hoc fashion. At present, we cannot distinguish discard estimates for vessels that are being monitored for compliance from those that are monitored for precision.

Notwithstanding these concerns, we recognize the importance of having a sea-day allocation program oriented towards compliance issues. The current Call-In program is well established and the Pre-Trip Notification System (PTNS) has been implemented.

The Regional Administrator has requested coverage for groundfish compliance monitoring:

- 30% ASM of sector groundfish trips
- 22% ASM of common pool groundfish trips
- 8% NEFOP coverage

Thus fleets associated with New England groundfish (gear types include longline, otter trawl and gillnet) and regions included in Sector Operations Plans (regions include Mid-Atlantic and New England) will have higher coverage for compliance monitoring than the coverage associated with the SBRM variance-based performance standard.

River herring

The Mid-Atlantic Fishery Management Council characterized the proposed coverage level for river herring as 'non-responsive' to their June 24, 2009 letter to the Hon. Gary Locke. The MAFMC requested that observer coverage of New England and Mid-Atlantic fisheries be conducted at a level that provides adequate estimates of river herring bycatch in these fisheries. The proposed coverage level is responsive but two key points need to be stated. With regard to the SBRM FMP, allocation decisions are based on the attainment of precision standards for the set of species under federal FMPs. The allocations are focused on those fleets which in

aggregate have the greatest cumulative effect on the mortality of the species groups. Prioritized allocations are further constrained by existing funding constraints. River herring, comprising both alewife and blueback herring, is not a federally managed species group and is not one of the 15 species groups included in SBRM FMP. However, the river herring species group is indeed monitored, along with all other individual species as part of the sampling protocols of the Northeast Fisheries Observer Program. In response to this request an evaluation of the sea days needed for river herring was conducted. Results indicated that two fleets, NE large-mesh otter trawl (Row 8, Appendix Table 1) and NE mid-water trawl (Row 35, Appendix Table 1) require more sea days than those needed to monitor the 15 SBRM species groups. The 2010 sea day analysis indicates that 379 days are needed for NE mid-water trawl for the 15 SBRM species groups while river herring need 1,091 days. For NE large-mesh otter trawl, 668 days are needed for the 15 species groups while river herring need 1,780 days. The coverage for NE large-mesh otter trawl is expected to exceed the SBRM performance standard (and the river herring coverage) due to compliance monitoring for sectors (Table 1, Row 8). For the NE mid-water trawl, when additional funds are available, this fleet can be covered to meet the needs of species groups beyond the suite of SBRM species. Days have been allocated to small-mesh otter trawl fisheries in the NE and MA regions that will provide additional river herring monitoring.

Distinctions between Fisheries and Fleets

The sea-day allocation process relies on the identification of strata, e.g., groups of vessels in a particular port and quarter, based on observable properties before the vessel begins fishing. The list of vessels with these observable properties can be used to generate a random sample. Moreover, these observable properties can be used to identify the total size of the strata and the landings from the unobserved fraction of the fleet. Together, the random sample and observations from the unobserved fleet allow for estimation of total discards. In contrast, properties of vessels that are the result of the fishing activity, e.g., the mix of species landed, are not known in advance and cannot be used for allocating sampling effort. It is not possible to allocate observers to yellowtail flounder trips or *Loligo* trips, nor is it possible to identify the necessary expansion factors based on post trip identification of these same outcomes. For example, is a *Loligo* trip one that catches 50% *Loligo* by weight or 75% or some other value? At best an allocation program that operates at a multi-fleet level, can improve the chances of obtaining estimates of discards of some species of interest. It can never ensure it unless all vessels are monitored.

Plan development teams and other groups charged with crafting monitoring programs will often base their results on analyses of species or stock specific information. Such analyses are often at a finer level of resolution than can be considered in the SBRM. These post hoc analyses will also include attributes of the trip itself (e.g., species composition) as a way of gaining insight into factors responsible for observed discard rates. Such analyses can lead to further refinement of allocation IF it leads to improved stratification based on observable properties. For the aforementioned reasons, the estimated sample sizes may be underestimates if they fail to consider the probability that sending an observer on a vessel that often catches or intends to catch a certain species does not ensure that a trip will provide useful information.

Relationship between the SBRM Allocation and Optimization Methods

The SBRM focuses on 15 species groups and derives sea day requirements for 51 fleets based on the relative variability (coefficient of variation or CV) of estimates for these species groups. A filtering algorithm is used to reduce the coverage for fleets whose landings or discards represent a small fraction of the total fishing mortality imposed on a species group. Further gains in precision can be obtained by using optimal allocation methods.

Such gains in precision are dependent on the premise that the previous year's observations and fishing patterns persist in the next deployment year. The anticipated but unknown changes in fishing patterns, industry activity, changes in discard rates and variability of discard rates, reduced the utility of optimization methods for 2010-2011. Formal optimization methods, apart from the application of filtering and constraints, were not applied. However, the initial prioritized sea days were proportionally distributed among fleets using VTR sea days with funding constraints even though future behavior is unknown. Actual coverage rates will depend in fishing activity among the fleets. Higher or lower sample sizes are now required for some components depending on changes in variability within a fleet over time.

This allocation relies primarily on statistical methods but incorporates expert judgment and client priority requests to assign sea days while keeping within the funded constraints. Recent changes in management regulations to implement Sectors have resulted in the expanded use of the Call-In program, renamed the Pre-Trip Notification System. This expansion of coverage by the Pre-Trip Notification System, increased overall coverage rates in groundfish, potential changes in the discarding rates in Sector fleets, and unknown changes in activities by fleets, reduced the applicability of optimization methods for 2010. Instead projected sea-day coverage based on proportional allocation among fleets based upon VTR days during the July 2008 to June 2009 period were used to assign sea days for fleets that are associated with the PTNS regulations (New England Groundfish fleets). **These sea day assignments should be considered as provisional.** Actual coverage will depend on industry activity among fleets within this funding category.

Methods for Dealing with Observer Coverage Shortfalls

The initial 2010 SBRM sea day prioritization is an integrated treatment of the bycatch monitoring requirements. Increases to the prioritized allocations can improve precision for some fleets but will likely degrade the precision of discard estimates for one or more species in fleets that donate days. To the extent possible, additional funding was used to augment initial allocations to prevent degradation of precision.

Possible options for dealing with observer coverage shortfalls include

- 1) No revisions (accept initial prioritization)
- 2) Adjust the initial sea day prioritization using an ad-hoc approach informed by the expected precisions attainable by species groups using the SBRM sea day analyses and constraints imposed by regionalized funding.

It is important to note that failure to attain the 30% CV standard for a given fleet does not necessarily mean that the predicted precision for all species groups will exceed 30%. Moreover, attainment of the 30% CV standard for a particular fleet implies that all of the species groups will be at or below 30%.

Justification/Rationale

The 2010 SBRM Sea Day Analysis and Prioritization document includes a column entitled ‘*Justification*’ to indicate the rationale of recommended prioritization for each fleet. The phrases ‘*Fish stock assessment support*’ with or without the footnote: ‘*Sector monitoring coverage is dependent on industry activity*’, ‘*Fish stock assessment support and turtle bycatch support*’, and ‘*Industry funded coverage is dependent on industry activity*’ provide a broad rationale for why sea days have been allocated to the fleets. The 2010 SBRM sea day analysis and document were expanded in 2010 to include: 1) a table⁴ containing the SBRM sea day standard for each of the 15 species groups; and 2) a table⁵ containing the expected achieved CV given the recommended prioritized sea days. The purpose of including these tables was to provide the details on each of the 15 species groups. It is not possible to adequately capture this level of detail into one column, but detailed information is available in the given tables.

Industry Funded coverage and Compensation rates

A letter dated March 3, 2010 from the Regional Administrator to Vessel Owners states initial compensation rates for scallop vessels that carry an observer under the industry funded observer program. The letter further states that industry comments are welcome and will be considered when the compensation rates are re-evaluated in July. Given this letter, it is pre-mature to include a description of the final compensation rate analysis in this document. However, below is a summary of the factors considered in the initial analysis.

In February 2010, a compensation rate analysis was conducted. The most important considerations include a daily compensation rate that does not induce biased fishing practices when an observer is on board, and ensures that overall coverage will be sufficient to meet, or nearly meet, the SBRM precision standards. The proposed compensation rate of 180 lbs per day seems to strike a balance between these objectives. The expected revenue from such additional landings should not make scallopers averse or prone to carry observers or to alter their trip durations or practices.

⁴ Table 4 in the 2010 SBRM Sea Day Analysis and Prioritization (January 26, 2010). Available on-line at: <http://www.nefsc.noaa.gov/femad/fsb/SBRM%20Annual%20Discard%20Report/2010/2010-SBRM-Sea-Day-Analysis-Prioritization-01262010.pdf>

⁵ Table 6 in the 2010 SBRM Sea Day Analysis and Prioritization (January 26, 2010). Available on-line at: <http://www.nefsc.noaa.gov/femad/fsb/SBRM%20Annual%20Discard%20Report/2010/2010-SBRM-Sea-Day-Analysis-Prioritization-01262010.pdf>

While the expected total number of days that might be funded falls short of the SBRM draft recommendation of about 4500 DAS, changes to management measures in 2010 may reduce the chance of encounters. The estimated number of sea days required to obtain a 30% CV under SBRM was based on data from the most recent available 12 month period. The use of the previous year's data to estimate appropriate sampling coverage in a future year is predicated on two assumptions: 1) the discard ratio remains constant, and 2) the distribution and magnitude of fishing effort remains constant in the relevant strata. There are a number of reasons why the number of sea days generated using data from 2009 may be higher than that necessary for 2010. Relevant changes in distribution and timing of fishing effort include:

- (1) A new seasonal closure to protect sea turtles during September-October will be implemented in Fishing Year 2010 (FY2010). There was heavy fishing activity in Delmarva during these months in 2009.
- (2) The number of Mid-Atlantic access trips was reduced from 4 in FY2009 to 3 in FY2010.
- (3) Only 2 of the 3 allocated Mid-Atlantic access trips in FY2010 can be taken during the time when turtle takes have been observed in the scallop fishery (June 16 - Oct 31). There was no restriction of this type in previous years.
- (4) The General Category quota has been reduced to about than half that of FY2009 (5% of total landings in FY2010 compared to 10% in FY2009).
- (5) Voluntary gear changes (such as a modification of the dredge bridle) have been made by a sizable percentage of the scallop fleet

The SBRM estimated coverages separately for open and access areas, and for different fleets within the scallop fishery. The only observed turtle take was in the open area, but there is no reason to believe that turtle takes are more likely in open areas than access areas. Thus, it is reasonable to pool estimated coverage for sea turtles in the Mid-Atlantic by combining access and open areas. Collectively these measures could reduce the overall sampling requirements in 2010-11. Additional analyses of sampling requirements that consider these factors are currently being conducted but are not available at this time. These analyses include pooling across years, refining the spatial stratification and looking at a suite of explanatory variables.

VI. Summary of revised sea days and associated consequences of revisions, by fleet.

Table 1 and 2 summarizes the initial prioritized (14,375 days) and revised prioritized (13,950 days) for 2010. In general, the fleets associated with NE groundfish have been adjusted to reflect budgetary changes due to additional funds for compliance monitoring of sectors via At-Sea Monitors. To address concerns regarding the coverage of small-mesh fisheries, sea days have been allocated to these fleets using some of additional funds to the budget and re-assigning existing sea day allocations. The industry-funded scallop fleets have decreased due to the replacement of the 4,000 assumed days with the 2,671 days based on the initial compensation rate analysis conducted in February 2010.

The analysis to derive the expected CV achieved for each species group was updated (Table 3) using the revised 2010 prioritized sea days (Table 1 column labeled “*Prioritized April 2010 – March 2011 Coverage REVISED*”). As described in the 2010 SBRM Sea Day Analysis and Prioritization document, there are 23 fleets with sufficient data to support sample size analysis based on the variance of the discard estimates. The fleets designated as in need of pilot coverage can not be evaluated and the fleets with no prioritized sea days are not evaluated. It is important to note that some species groups have been filtered out through the importance filter process and thus do not have an achieved CV; these species groups have been denoted with an ‘*’ in Table 3.

Of the 47 species groups with an estimable CV, 30 species groups (64%) maintained a CV less than or equal to the SBRM 30% CV standard (Table 3). As noted above, the fleets associated with the New England groundfish fisheries (large-mesh otter trawls, gillnets, etc) have more sea days than required by SBRM due to the provisional nature of sea day allocation (i.e. using previous year’s industry activity). Consequently, the expected achieved CVs are lower than the 30% CV for all species groups. The expected achieved CV for species groups given the shortfall and surplus of sea days across fleets is for illustrative purposes due to the provisional nature (dependent on industry activity) of the 2010 prioritized sea days. In this revised analysis, the number of sea days associated with the industry-funded fleets was divided equally among the fleets that comprised each combined group (Rows 12, 32, and 33; Rows 10 and 28; and Rows 26 and 27).

The usefulness of Table 3 is demonstrated in rows where the prioritized sea days are less than the SBRM performance standard. For example, the sea days for the MA small mesh otter trawl (Row 5) have been increased to 553 days due to the concern over butterfish. The expected achieved CV is 35% for the species group Squid, Butterfish and Mackerel (SBM). It would take an additional 170 sea days (using Appendix Table 1 Row 5: $723 - 553 = 170$) to achieve a 30%CV. For each species group of interest, the above comparisons can be made using the species group and fleet information provided in this document.

Further improvements in precision of discard estimates are limited by total funding and constraints on funding by region or species group. The SBRM feedback process with the Councils ensures that priorities other than precision standards alone can be incorporated into the planned sea day allocations. The SBRM also provides a mechanism for evaluating the tradeoffs induced by the inclusion of other priorities. The observer program and fishery management are changing rapidly with the expansion of sectors in groundfish fisheries, reliance on industry funded programs for scallop fisheries, proposed increases in coverage for vessels with sea herring permits, and real-time estimation of discards for butterfish. These changes represent fundamental changes to the basis of the Standardized Bycatch Reporting Methodology. Information obtained in the coming year will be informative and may lead to an allocation system that relies more heavily on adaptive and systematic sampling of various vessel call-in programs rather than expectations of fishing activities by fleets based on previous years’ data.

Table 1. 2010 Standardized Bycatch Reporting Methodology Prioritization sea days, April 2010 to March 2011, based on data from July 2008 to June 2009; (REVISED).

Row	GearType	Access Area	Trip Cat.	Region	Mesh	2010 SBRM Sea Day Standard	Prioritized April 2010 - March 2011 Coverage	Prioritized April 2010 - March 2011 Coverage REVISED	Notes
1	Longline	OPEN	all	MA	all	109	104	102	
2	Longline	OPEN	all	NE	all	25	201	178	
3	Hand Line	OPEN	all	MA	all	70	0	0	
4	Hand Line	OPEN	all	NE	all	50	50	12	
5	Otter Trawl	OPEN	all	MA	sm	1,415	116	553	
6	Otter Trawl	OPEN	all	MA	lg	2,175	1,537	1,582	
7	Otter Trawl	OPEN	all	NE	sm	2,192	733	954	
8	Otter Trawl	OPEN	all	NE	lg	668	4,190	4,019	
9	Scallop Trawl	AA	GEN	MA	all	12	24	71	
10	Scallop Trawl	AA	LIM	MA	all	41	5		**
11	Scallop Trawl	OPEN	GEN	MA	all	41	41	41	
12	Scallop Trawl	OPEN	LIM	MA	all	84	34		*
13+	Otter Trawl, Ruhle	OPEN	all	NE	all	3	0	446	
14	Shrimp Trawl	OPEN	all	MA	all	97	0	0	
15	Shrimp Trawl	OPEN	all	NE	all	36	16	16	
16+	Floating Trap	OPEN	all	MA	all	15	0	0	
17+	Floating Trap	OPEN	all	NE	all	9	0	0	
18	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	35	0	0	
19	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	478	100	128	
20	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlq	423	302	284	
21	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	12	12	0	
22	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	159	1,667	1,595	
23	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlq	140	739	654	
24	Purse Seine	OPEN	all	MA	all	10	20	18	
25	Purse Seine	OPEN	all	NE	all	30	30	30	
26	Scallop Dredge	AA	GEN	MA	all	43	224	88	***
27	Scallop Dredge	AA	GEN	NE	all	12	30		***
28	Scallop Dredge	AA	LIM	MA	all	93	442	775	**
29	Scallop Dredge	AA	LIM	NE	all	255	257	327	
30	Scallop Dredge	OPEN	GEN	MA	all	49	49	49	
31	Scallop Dredge	OPEN	GEN	NE	all	23	23	23	
32	Scallop Dredge	OPEN	LIM	MA	all	3,443	1,356	1,410	*
33	Scallop Dredge	OPEN	LIM	NE	all	475	1,628		*
34	Mid-water Paired & Single Trawl	OPEN	all	MA	all	34	66	66	
35	Mid-water Paired & Single Trawl	OPEN	all	NE	all	379	379	379	
36	Pots and Traps, Fish	OPEN	all	MA	all	26	0	0	
37	Pots and Traps, Fish	OPEN	all	NE	all	13	0	0	
38	Pots and Traps, Conch	OPEN	all	MA	all	16	0	0	
39	Pots and Traps, Conch	OPEN	all	NE	all	13	0	0	
40	Pots and Traps, Hagfish	OPEN	all	MA	all	128	0	0	
41	Pots and Traps, Hagfish	OPEN	all	NE	all	56	0	0	
42+	Pots and Traps, Shrimp	OPEN	all	NE	all	9	0	0	
43	Pots and Traps, Lobster	OPEN	all	MA	all	68	0	0	
44	Pots and Traps, Lobster	OPEN	all	NE	all	427	0	0	
45	Pots and Traps, Crab	OPEN	all	MA	all	37	0	0	
46	Pots and Traps, Crab	OPEN	all	NE	all	51	0	0	
47+	Beam Trawl	OPEN	all	MA	all	31	0	0	
48+	Beam Trawl	OPEN	all	NE	all	18	0	0	
49+	Dredge, Other	OPEN	all	MA	all	23	0	0	
50	Ocean Quahog/Surf Clam Dredge	OPEN	all	MA	all	67	0	0	
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	29	0	0	
NEW	Herring - CA1 coverage							150	
Total Days						14,147	14,375	13,950	

Note: * denotes 1,410 days for Rows 12, 32, and 33 (industry-funded fleets); ** denotes 775 days for Rows 10 and 28 (industry-funded fleets); and *** denotes 88 days for Rows 26 and 27 (industry-funded fleets). P = pilot coverage; P* = pilot coverage for fish only; + = new fleets.

Table 2. Summary of recommended changes in 2010 sea day allocation.

Fishery	Initial Sea Day Allocation	Revised Sea Day Allocation	Comments/Rationale
Agency-Funded Fleets			
<p>Rows 1, 2, 4, 6, 8, 13, 19, 20, 22, 23</p> <p>NE and MA groundfish fleets using longline, otter trawl, or gillnet</p>	8,890	9,000	<p>9,000 days for compliance monitoring of groundfish sectors (5,991 At-Sea Monitor days and 3,009 NEFOP observer days) exceeds the 4,230 SBRM standard days for these fleets.</p> <p>This coverage is dependent upon current industry activity. The allocated sea days, by fleet, are provisional and serve as place-holders based on industry activity in the previous year. It is not known what industry activity will occur in the next 12 months.</p> <p>The sea day allocations to the Mid-Atlantic fleets (large-mesh otter trawl, large and extra-large mesh gillnet) may be over estimated and depend on sector activity in this region. A shortfall may occur in these fleets for trips that are not groundfishing or using a groundfish DAS (i.e. monkfish, dogfish and skate trips). Sea days have been placed in these fleets based on Sector Operations Plans.</p>
<p>Row 5</p> <p>MA small-mesh Otter Trawl</p>	116	553	<p>Additional funding (using all of the 394 days based on temporary funds from the National Observer Program) was used to increase the number of sea days in this fleet. This increase lowered the CV from 78% to 35% for Squid, Butterfish and Mackerel (SBM). It will require an additional 862 days to lower the CV to 30% for this all species groups.</p>
<p>Row 7</p> <p>NE small-mesh Otter Trawl</p>	733	954	<p>Additional funding was used to increase sea days in this fleet. A shortfall of 1,238 days remain for this fleet. The additional sea days lowered the CV from 45% to 35% for small-mesh groundfish (GFS) species group. See Table 3 for the expected achieved CV for other species groups.</p>

Row 13 Ruhle Trawl	0	446	Additional funding (funding associated with Sectors) was used to increase sea days in this fleet. This coverage is dependent upon current industry activity; the allocated sea days are provisional. The revised allocation exceeds the SBRM pilot-based standard of 3 days.
Row 21 NE small-mesh Gillnet	12	0	Industry activity is low in this fleet, with only a total of 55 industry trips in the previous year; the 12 days are based on pilot coverage. There are 2 days allocated to this fleet for monitoring protected species, including sea turtles.
Row 24 MA Purse Seine	20	18	The 2 day reduction is associated with the overall reduction of funding associated with sea turtle coverage. The allocated sea days remain above the pilot-based SBRM performance standard.
Row New	0	150	There are 150 sea days for Herring Closed Area I coverage; these days could be used in the NE Mid-water Trawl (Row 35) to provide additional coverage.
Industry-Funded fleets			
Rows 9, 10, 12, 26, 27, 28, 29, 32, and 33	4,000	2,671	<p>4,000 assumed days served as a place holder until the compensation rate analysis was performed.</p> <p>2,671 days is based on the initial compensation rate analysis conducted in February 2010.</p> <p>Coverage will be based on industry activity within each fleet with a cap of: 1,410 days for the combined coverage of Rows 12, 32, and 33 (rows denoted with * in Table 1); 775 days for the combined coverage in Rows 10, 28 (rows denoted with ** in Table 1); 71 days for Row 9; 88 days for Row 26 and 27 (rows denoted with *** in Table 1); and 327 days for Row 29.</p> <p>Coverage is expected to meet SBRM performance standard for all fleets and species except for turtles (TURS) in Row 32 (Table 3).</p>

Table 3. The expected coefficient of variation (CV) achieved for the proposed prioritized sea days, by species group and fleet based on July 2008 to June 2009 data. Red font indicates CVs less than or equal to 30%; ‘*’ denotes species groups that have been filtered out through the importance filter.

Row	GearType	Access Area	Trip Cat.	Region	Mesh	2010 SBRM Prioritized Sea Days (Revised)	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	TURS	Pilot	
1	Longline	OPEN	all	MA	all	102																	P
2	Longline	OPEN	all	NE	all	178	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	Hand Line	OPEN	all	MA	all	0																	P
4	Hand Line	OPEN	all	NE	all	12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	Otter Trawl	OPEN	all	MA	sm	553	*	*	*	*	*	0.347	*	*	0.294	0.338	0.340	0.518	*	*	0.508		
6	Otter Trawl	OPEN	all	MA	lg	1,582	*	*	*	*	*	*	*	0.090	0.364	0.089	0.110	0.117	*	*	*		
7	Otter Trawl	OPEN	all	NE	sm	954	*	*	*	*	*	*	*	*	0.349	*	0.460	0.481	*	*	0.407		
8	Otter Trawl	OPEN	all	NE	lg	4,019	*	*	*	*	*	*	0.091	0.035	0.116	0.034	0.068	0.085	*	*	*		
9	Scallop Trawl	AA	GEN	MA	all	71																P	
10	Scallop Trawl	AA	LIM	MA	all	387																P	
11	Scallop Trawl	OPEN	GEN	MA	all	41																P	
12	Scallop Trawl	OPEN	LIM	MA	all	470																P	
13+	Otter Trawl, Ruhle	OPEN	all	NE	all	446																P	
14	Shrimp Trawl	OPEN	all	MA	all	0																P	
15	Shrimp Trawl	OPEN	all	NE	all	16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
16+	Floating Trap	OPEN	all	MA	all	0																	P
17+	Floating Trap	OPEN	all	NE	all	0																	P
18	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0																	
19	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	128																0.747	P*
20	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	284	*	*	*	*	*	*	0.116	*	*	*	0.112	*	*	*	0.374		
21	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0																	P
22	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	1,595	*	*	*	*	*	*	*	0.056	*	*	0.090	*	*	*	*		
23	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	654	*	*	*	*	*	*	0.131	*	*	0.095	0.102	*	*	*	*		
24	Purse Seine	OPEN	all	MA	all	18																	P
25	Purse Seine	OPEN	all	NE	all	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
26	Scallop Dredge	AA	GEN	MA	all	44	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
27	Scallop Dredge	AA	GEN	NE	all	44	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
28	Scallop Dredge	AA	LIM	MA	all	388	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
29	Scallop Dredge	AA	LIM	NE	all	327	*	*	*	*	*	*	0.258	*	*	*	*	*	*	*	*	*	
30	Scallop Dredge	OPEN	GEN	MA	all	49	*	*	*	*	*	*	*	*	*	0.301	*	*	*	*	*		
31	Scallop Dredge	OPEN	GEN	NE	all	23	*	*	*	*	*	*	*	*	*	0.302	*	*	*	*	*		
32	Scallop Dredge	OPEN	LIM	MA	all	470	*	*	*	*	*	*	0.175	*	*	0.156	0.186	0.308	*	*	0.917		
33	Scallop Dredge	OPEN	LIM	NE	all	470	*	*	*	*	0.287	*	0.213	0.146	0.247	0.153	0.302	0.222	*	*	*		
34	Mid-water Paired & Single Trawl	OPEN	all	MA	all	66																P	
35	Mid-water Paired & Single Trawl	OPEN	all	NE	all	379	*	*	*	*	*	*	*	*	0.300	*	0.192	*	*	*	*		
36	Pots and Traps, Fish	OPEN	all	MA	all	0																	P
37	Pots and Traps, Fish	OPEN	all	NE	all	0																	P
38	Pots and Traps, Conch	OPEN	all	MA	all	0																	P
39	Pots and Traps, Conch	OPEN	all	NE	all	0																	P
40	Pots and Traps, Hagfish	OPEN	all	MA	all	0																	P
41	Pots and Traps, Hagfish	OPEN	all	NE	all	0																	P
42+	Pots and Traps, Shrimp	OPEN	all	NE	all	0																	P
43	Pots and Traps, Lobster	OPEN	all	MA	all	0																	P
44	Pots and Traps, Lobster	OPEN	all	NE	all	0																	P
45	Pots and Traps, Crab	OPEN	all	MA	all	0																	P
46	Pots and Traps, Crab	OPEN	all	NE	all	0																	P
47+	Beam Trawl	OPEN	all	MA	all	0																	P
48+	Beam Trawl	OPEN	all	NE	all	0																	P
49+	Dredge, Other	OPEN	all	MA	all	0																	P
50	Ocean Quahog/Surf Clam	OPEN	all	MA	all	0																	P
51	Ocean Quahog/Surf Clam	OPEN	all	NE	all	0																	P

13,800 (excludes the 150 for Closed Area I Herring coverage)

* Filtered out by importance filter; Blank: No funded seadays or no estimates of discards and variance (in need of pilot coverage).

Appendix Table 1. The number of sea days needed to achieve a 30% CV for the 15 species groups included in SBRM and also for river herring (RHERR), a non-SBRM species group.

Row	GearType	Access Area	Trip Cat.	Region	Mesh	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	TURS	Pilot days	2010 SBRM Sea Day Standard	Pilot	RHERR
1	Longline	OPEN	all	MA	all	0	0	0	0	0	0	109	109	0	109	109	0	0	109	109	109	109	P	109
2	Longline	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25		0
3	Hand Line	OPEN	all	MA	all	0	0	0	0	0	0	0	70	0	0	0	0	0	0	70	70	70	P	70
4	Hand Line	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50		0
5	Otter Trawl	OPEN	all	MA	sm	0	0	0	0	0	723	0	0	533	692	691	1,359	0	0	1,415	180	1,415		706
6	Otter Trawl	OPEN	all	MA	lg	0	0	0	0	0	0	0	163	2,175	158	237	265	0	0	0	240	2,175		0
7	Otter Trawl	OPEN	all	NE	sm	0	0	0	0	0	0	0	0	1,257	0	2,038	2,192	0	0	1,683	159	2,192		2085
8	Otter Trawl	OPEN	all	NE	lg	0	0	0	0	0	0	438	64	668	61	238	370	0	0	0	520	668		1780
9	Scallop Trawl	AA	GEN	MA	all	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	P	12
10	Scallop Trawl	AA	LIM	MA	all	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	P	41
11	Scallop Trawl	OPEN	GEN	MA	all	41	0	0	0	41	41	41	41	41	41	41	41	0	0	41	41	41	P	41
12	Scallop Trawl	OPEN	LIM	MA	all	84	0	0	0	84	84	84	84	84	84	84	84	0	0	84	84	84	P	84
13+	Otter Trawl, Ruhle	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P	3
14	Shrimp Trawl	OPEN	all	MA	all	0	97	0	0	0	97	97	97	97	97	0	97	0	0	97	97	97	P	97
15	Shrimp Trawl	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	36		32
16+	Floating Trap	OPEN	all	MA	all	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	P	15
17+	Floating Trap	OPEN	all	NE	all	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P	9
18	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	35		0
19	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	24	24	0	0	0	24	24	24	0	24	24	24	0	0	478	24	478	P*	24
20	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0	0	0	0	46	0	0	0	43	0	0	0	423	67	423		0
21	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	12	12	0	0	0	12	12	12	12	12	12	12	0	0	12	12	12	P	12
22	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	0	0	0	0	0	0	0	60	0	0	159	0	0	0	0	207	159		0
23	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	0	0	0	0	0	0	140	0	0	72	86	0	0	0	0	92	140		0
24	Purse Seine	OPEN	all	MA	all	10	10	0	0	0	10	0	10	10	10	10	10	0	0	10	10	10	P	10
25	Purse Seine	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	30		0
26	Scallop Dredge	AA	GEN	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	43		0
27	Scallop Dredge	AA	GEN	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12		0
28	Scallop Dredge	AA	LIM	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	93		0
29	Scallop Dredge	AA	LIM	NE	all	0	0	0	0	0	0	255	0	0	0	0	0	0	0	0	104	255		0
30	Scallop Dredge	OPEN	GEN	MA	all	0	0	0	0	0	0	0	0	49	0	0	0	0	0	0	185	49		0
31	Scallop Dredge	OPEN	GEN	NE	all	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	64	23		0
32	Scallop Dredge	OPEN	LIM	MA	all	0	0	0	0	0	0	166	0	0	132	186	494	0	0	3,443	186	3,443		0
33	Scallop Dredge	OPEN	LIM	NE	all	0	0	0	0	431	0	242	116	322	126	475	263	0	0	0	224	475		0
34	Mid-water Paired & Single Trawl	OPEN	all	MA	all	34	34	0	0	0	34	34	34	34	0	34	0	0	0	34	34	34	P	34
35	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0	0	0	0	0	0	379	0	182	0	0	0	0	44	379		1091
36	Pots and Traps, Fish	OPEN	all	MA	all	0	26	0	26	0	0	0	26	26	26	0	26	0	26	26	26	26	P	26
37	Pots and Traps, Fish	OPEN	all	NE	all	0	13	0	13	0	0	0	13	13	13	0	13	0	13	13	13	13	P	13
38	Pots and Traps, Conch	OPEN	all	MA	all	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	P	16
39	Pots and Traps, Conch	OPEN	all	NE	all	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	P	13
40	Pots and Traps, Hagfish	OPEN	all	MA	all	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	P	128
41	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	56		0
42+	Pots and Traps, Shrimp	OPEN	all	NE	all	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P	9
43	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0	68	0	0	0	68	0	0	0	0	0	0	68	68	68	P	68
44	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0	427	0	0	0	427	0	0	0	0	0	0	0	427	427	P	427
45	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0	37	0	0	0	0	0	0	0	0	0	0	37	37	37	P	37
46	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0	51	0	0	0	0	0	0	0	0	0	0	51	51	51	P	51
47+	Beam Trawl	OPEN	all	MA	all	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	P	31
48+	Beam Trawl	OPEN	all	NE	all	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	P	18
49+	Dredge, Other	OPEN	all	MA	all	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	P	23
50	Ocean Quahog/Surf Clam Dredge	OPEN	all	MA	all	0	0	0	0	67	0	67	0	0	0	0	0	0	67	0	67	67	P	67
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	0	0	0	0	29	0	29	0	0	0	0	0	0	29	0	29	29	P	29
					Total	523	534	318	940	970	1,343	2,102	1,736	5,969	2,047	4,967	5,568	414	466	8,508	4,169	14,147		7,211