

Science, Service, Stewardship



# Standardized Bycatch Reporting Methodology: Annual Discard Report and Consultation / Prioritization Process in 2010

*Northeast Fisheries Science Center*

Presentation To:  
New England Fishery Management Council  
Portsmouth, NH  
January 26-28, 2010

Mid Atlantic Fishery Management Council  
Cambridge, MD  
February 9-11, 2010

**NOAA  
FISHERIES  
SERVICE**



# Standardized Bycatch Reporting Methodology (SBRM)

- 1) SBRM Annual Discard Report 2010  
Summary of NE Fishery Observer Program data
- 2) SBRM Recommended Sea Days 2010  
Sea days needed for 30% CV  
Update based on July 2008- June 2009 data
- 3) Prioritization 2010  
Comparison of SBRM Recommended days &  
Prioritized sea days

**REQUEST COMMENTS BY FEBRUARY 26, 2010**



# SBRM Annual Discard Report 2010

## OUTLINE of Report (same format as 2009)

- BACKGROUND
- DATA USED
- ANNUAL REPORT TABLES
- CAUTIONARY NOTES TO READER
- SUMMARY list of tables
- Tables and Appendix Tables

Handout Summary has list of tables

Report is available on-line: [www.nefsc.noaa.gov](http://www.nefsc.noaa.gov)

*Search - Site Index - 'S' - SBRM*

# SBRM Annual Discard Report 2010

## ANNUAL DISCARD REPORT TABLES

Table numbers correspond to the report requirements (Federal Register). Divided into two sections.

### Section 1 (pages 1-200) contains:

Tables 1 - 5 where Tables 4a-b and 5a-b summarize data by species group

Appendix Tables summarizing discard reasons for all species encountered

### Section 2 (pages 201 - 1531) contains:

Tables 4c,d - 5c,d which summarize individual species

Tables 4 and 5 are partitioned into two parts:

fish/invertebrates are reported in live pounds;

interactions of incidental take species are reported in numbers;

# SBRM Annual Discard Report 2010

## SUMMARY

- List of tables
- List of species groups
- List of individual species
  - reported in pounds
  - reported in numbers
- List of discard reasons and categories

<b>ALL SPECIES</b>
All species except turtles, marine mammals, and birds.
<b>ATLANTIC SALMON</b>
<b>BLUEFISH</b>
<b>FLUKE - SCUP - BLACK SEA BASS</b>
Black Sea Bass
Fluke
Scup
<b>HERRING, ATLANTIC</b>
<b>LARGE MESH GROUND FISH</b>
American Plaice
Atlantic Cod
Atlantic Halibut
Atlantic Wolffish
Haddock
Ocean Pout
Pollock
Redfish
White Hake
Windowpane Flounder
Winter Flounder
Witch Flounder
Yellowtail Flounder
<b>MONKFISH</b>
<b>RED CRAB</b>
<b>SEA SCALLOP</b>
<b>SKATE COMPLEX</b>
Barndoor Skate
Clearnose Skate
Little Skate
Rosette Skate
Smooth Skate
Thorny Skate
Winter Skate

<b>SMALL MESH GROUND FISH</b>
Offshore Hake
Red Hake
Silver Hake
<b>SPINY DOGFISH</b>
<b>SQUID - BUTTERFISH - MACKEREL</b>
Atlantic Mackerel
Butterfish
Illex Squid
Loligo Squid
<b>SURFLAM - OCEAN QUAHOG</b>
Surfclam
Ocean Quahog
<b>TILEFISH</b>
<b>SEA TURTLES</b>
Green Turtle
Hawksbill Turtle
Kemp's Ridley Turtle
Leatherback Turtle
Loggerhead Turtle
Olive Ridley Turtle
Slider (Pond) Turtle
Snapper Turtle
Terrapin Turtle
Turtles, unk.
Turtles, unk hard-shell

# Tables in SBRM Annual Report

1. Observed SEA DAYS by fleet and quarter
2. Observed TRIPS by fleet and quarter
3. Observed TRIPS by fleet and statistical area
4. Kept and discard pounds by fleet and quarter
  - a. by species group (fish)
  - b. by species group (turtles)
  - c. by individual species (fish)
  - d. by individual species (turtles)
5. Kept and discard pounds by fleet & stat. area

Appendix Table 1a. Species groups & Discard Reason Category

Appendix Table 1b. contains all living species reported in pounds:

Alewife through Wrymouth

Appendix 2a. Number of sea turtles

Appendix 2b. All Incidental take species



# SBRM Recommended Sea Days 2010

Sea days needed to attain a 30% CV

Document available on-line: [www.nefsc.noaa.gov](http://www.nefsc.noaa.gov)  
*Search - Site Index - 'S' - SBRM*

Printed copies available

# SBRM Recommended Sea Days

## NEW in 2010 Sea Day Analysis

- 7 new fleets (row numbers marked with \*) included:
  - Beam trawl (rows 47 & 48)
  - Floating trap (rows 16 & 17)
  - Ruhle trawl (row 13)
  - Shrimp pot (row 42)
  - Dredge, Other (row 49)
- Revised Turtle Importance Filters
  - updated 'unlikely' filter, and
  - used total discard filter and
  - used total mortality due to discards filter

New Analysis: the expected CV achieved given prioritized sea days.



# SBRM Recommended Sea Days

## NEW in 2010 Prioritization

- Turtle monitoring requirements in Industry-funded scallop fleets are explicitly included in the analysis
- Higher coverage of NE Groundfish fleets to support implementation of A16
- Coverage of US/CAN, B-day and Special Access Programs will be the same coverage rates as Sectors
- Fishing patterns are likely to be different under Sectors, a pre-trip notification system will assign coverage
- Anticipated but unknown changes in fishing patterns, discard rates, etc. reduce the utility of the optimization method for 2010-2011. No formal optimization was applied.

# SBRM Recommended Sea Days

	2009 SBRM	2010 SBRM
Data	2007-2008	2008-2009
Fleets	44	51
Baseline Sea Days	54,631	51,252
Filtered Sea Days	15,125	14,147
Fleets with Pilot coverage	24	28

Recommended  
Sea Days ←

The 7 new fleets contributed 108 (pilot) days of the 14,147 days

# Table 4. 2010 SBRM Recommended Sea Days

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 Recommended Sea Days	Pilot	
1	Longline	OPEN	all	MA	all	0	0	0	0	0	0	109	109	0	109	109	0	0	0	109	109	109	109	P
2	Longline	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25	
3	Hand Line	OPEN	all	MA	all	0	0	0	0	0	0	0	70	0	0	0	0	0	0	0	70	70	70	P
4	Hand Line	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50	
5	Otter Trawl	OPEN	all	MA	sm	0	0	0	0	0	0	723	0	0	533	692	691	1,359	0	0	1,415	181	1,415	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0	0	0	0	0	166	2,175	158	237	265	0	0	0	240	2,175		
7	Otter Trawl	OPEN	all	NE	sm	0	0	0	0	0	0	0	0	1,297	0	2,038	2,192	0	0	1,683	159	2,192		
8	Otter Trawl	OPEN	all	NE	lg	0	0	0	0	0	0	438	64	668	61	238	370	0	0	0	520	668		
9	Scallop Trawl	AA	GEN	MA	all	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	P
10	Scallop Trawl	AA	LIM	MA	all	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	P
11	Scallop Trawl	OPEN	GEN	MA	all	41	0	0	0	41	41	41	41	41	41	41	41	0	0	0	41	41	41	P
12	Scallop Trawl	OPEN	LIM	MA	all	84	0	0	0	84	84	84	84	84	84	84	84	84	0	0	84	84	84	P
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	3	P
14	Shrimp Trawl	OPEN	all	MA	all	0	97	0	0	0	97	97	97	97	97	0	97	0	0	97	97	97	97	P
15	Shrimp Trawl	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	36	P
16+	Floating Trap	OPEN	all	MA	all	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	P
17+	Floating Trap	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P

Table 4: Number of sea days needed to obtain a 30% CV by species group and fleet and the SBRM recommended sea days for each fleet

Row 6: Small-mesh Groundfish is the 'driving' species group for this fleet.

Row 9: new fleet in 2009, unlikely filter not updated, use 'pilot' to maintain some coverage.

Row 15: all species group are filtered out (0 days), used 'pilot' to maintain some coverage.

35
478
423
12
159
140
10
30
43
12
93
255
49
23
3,443
475
34
379
26
13
16
13
128
56
9
68
427
37
51
31
18
23
67
29
4,147

# SBRM Recommended Sea Days

2010

Total for all fleets 14,147 days

Agency-funded fleets 9,689 days

Industry-funded fleets 4,458 days

- nine scallop fleets  
(rows 2, 4, 15, 18, 25, 26, 27, 28, 41)
- work plan is under development
- not Open area Limited Access Gen. Cat. fleets  
(rows 11,30,31)



# Funding for April 2010 to March 2011

Agency-funded (with constraints)

Industry-funded  
work plan under development

# Sea Day Funding Source Constraints

Reducing Bycatch	Temporary	Funding dedicated nationally to generating bycatch reporting, rather than sea day support.
MMPA Observers	Permanent	Funding source is to implement MMPA and must be applied to estimate marine mammal bycatch. <i>MMPA is not part of SBRM.</i>
New England Groundfish	Permanent <b>94%</b>	Funding sources can only be applied New England groundfish fisheries, or fisheries that take NE Groundfish as bycatch
National Observer Program	Temporary	Funding sources obtained in response to national RFP and must address the objectives of the funded proposal. Proposal was to provide infrastructure (data entry, editing, quality control, etc)
Atlantic Coast Observers	Permanent <b>6%</b>	Funding source to support observation of fish and sea turtle bycatch in Mid-Atlantic fisheries (coverage split 50/50 between fish and turtles).

# Funding\* for April 2010 - March 2011

Agency Funding Sources 10,375 days  
Atlantic Coast 646 days  
NE Groundfish 9,719 days  
NEFOP 4,614 days and At-Sea Monitors (ASM) 5,105 days  
MMPA (days for SBRM) 10 days

Industry Funding assumed 4,000 days  
9 fleets (rows 2, 4, 15, 18, 25, 26, 27, 28, 41)  
Work plan is under development

**14,375 funded days > 14,147 SBRM days**  
shortfall exists in some fleets due to funding constraints

*\*as of January 15, 2010*



# **SBRM Prioritization Process**



# SBRM Prioritization Process

## Summary Table: Table 5\*

- 1) 2010 SBRM Recommended Sea Days  
(days needed to attain 30% CV in each applicable fishery)
  
- 2) Days allocated proportionally within two funding categories:
  - Agency-funded without funding constraints
  - Industry-funded

\* *handout in 11x17 format is available*

# SBRM Prioritization Process continued

## Summary Table continued

3) Days allocated proportionally within two funding categories:

- Agency-funded with funding constraints
- Industry-funded

4) Prioritized Sea Days

5) Rationale for the recommended prioritization

(1)

# 2010 Prioritization Table

Row	Gear Type	Access Area	Trip Cat.	Region	Mesh	2010 SBRM Recommended Sea Days	Available coverage with shortfall applied proportionally	Available Coverage with shortfall applied proportionally within funding constraints	Prioritized April 2010 - March 2011 Coverage	April 2010 - March 2011 Difference from Preferred Alternative	April 2010 - March 2011 Percentage of Preferred Alternative	Justification	Basis for SBRM Coverage
1	Longline	OPEN	all	MA	all	109	117	12	104	5	95%	Fish stock assessment support	P
2	Longline	OPEN	all	NE	all	25	27						P
3	Hand Line	OPEN	all	MA	all	70	75						P
4	Hand Line	OPEN	all	NE	all	50	54						P
5	Otter Trawl	OPEN	all	MA	sm	1415	1515						P
6	Otter Trawl	OPEN	all	MA	lg	2175	2329						P
7	Otter Trawl	OPEN	all	NE	sm	2192	2347						P
8	Otter Trawl	OPEN	all	NE	lg	668	715						P
9	Scallop Trawl	AA	GEN	MA	all	12	11						P
10	Scallop Trawl	AA	LIM	MA	all	41	37						P
11	Scallop Trawl	OPEN	GEN	MA	all	41	44						P
12	Scallop Trawl	OPEN	LIM	MA	all	84	75						P
13+	Otter Trawl, Ruhle	OPEN	all	NE	all	3	3						P
14	Shrimp Trawl	OPEN	all	MA	all	97	104						P
15	Shrimp Trawl	OPEN	all	NE	all	36	39						P
16+	Floating Trap	OPEN	all	MA	all	15	16						P
17+	Floating Trap	OPEN	all	NE	all	9	10						P
18	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	35	37						P*
19	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	478	512						P*
20	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	423	438						P
21	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	12	13						P
22	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	159	170						P
23	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	140	150						P
24	Purse Seine	OPEN	all	MA	all	10	11						P
25	Purse Seine	OPEN	all	NE	all	30	32						P
26	Scallop Dredge	AA	GEN	MA	all	43	39						P
27	Scallop Dredge	AA	GEN	NE	all	12	11						P
28	Scallop Dredge	AA	LIM	MA	all	93	83						P
29	Scallop Dredge	AA	LIM	NE	all	255	229						P
30	Scallop Dredge	OPEN	GEN	MA	all	49	52						P
31	Scallop Dredge	OPEN	GEN	NE	all	23	25						P
32	Scallop Dredge	OPEN	LIM	MA	all	3443	3089						P
33	Scallop Dredge	OPEN	LIM	NE	all	475	426						P
34	Mid-water Paired & Single Trawl	OPEN	all	MA	all	34	36						P
35	Mid-water Paired & Single Trawl	OPEN	all	NE	all	379	406						P
36	Pots and Traps, Fish	OPEN	all	MA	all	26	28						P
37	Pots and Traps, Fish	OPEN	all	NE	all	13	14						P
38	Pots and Traps, Conch	OPEN	all	MA	all	16	17						P
39	Pots and Traps, Conch	OPEN	all	NE	all	13	14						P
40	Pots and Traps, Hagfish	OPEN	all	MA	all	128	137						P
41	Pots and Traps, Hagfish	OPEN	all	NE	all	56	60						P
42+	Pots and Traps, Shrimp	OPEN	all	NE	all	9	10						P
43	Pots and Traps, Lobster	OPEN	all	MA	all	68	73						P
44	Pots and Traps, Lobster	OPEN	all	NE	all	427	457						P
45	Pots and Traps, Crab	OPEN	all	MA	all	37	40	5	0	-37	0%		P
46	Pots and Traps, Crab	OPEN	all	NE	all	51	55	114	0	-51	0%		P
47+	Beam Trawl	OPEN	all	MA	all	31	33	4	0	-31	0%		P
48+	Beam Trawl	OPEN	all	NE	all	18	19	40	0	-18	0%		P
49+	Dredge, Other	OPEN	all	MA	all	23	25	3	0	-23	0%		P
50	Ocean Quahog/Surf Clam Dredge	OPEN	all	MA	all	67	72	8	0	-67	0%		P
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	29	31	65	0	-29	0%		P
SAP/B day/US-CAN (covered as part of NE groundfish)													
Discovery Days													
Total Days						14,147	14,375	14,375	14,375				Notes:
Projected Costs						\$15,082,110	\$15,550,000	\$15,550,000	11,539,038				1: Sector monitoring coverage is dependent on industry activity

1) 2010 SBRM Recommended Sea Days: at-sea observer coverage levels required to attain the SBRM performance standards in each applicable fishery

Based on data from July 2008 to June 2009

# 2010 Prioritization Table

Row	Gear Type	Access Area	Trip Cat	Region	Mesh	2010 SBRM Recommended Sea Days	Available Coverage with shortfall applied proportionally	Available Coverage with shortfall applied proportionally within funding constraints	Prioritized April 2010 - March 2011 Coverage	April 2010 - March 2011 Difference from Preferred Alternative	April 2010 - March 2011 Percentage of Preferred Alternative	Justification	Basis for SBRM Coverage
<p><b>SBRM requires 14,147 sea days (\$15.1 million)</b></p> <p><b>Agency funding for 10,375 days (\$7.4 million)</b></p> <p><b>Industry funding for ~4,000 days (\$3.1 million)</b></p> <p><b>Total 14,375 days</b></p> <p><b>Total: No Shortfall</b></p> <p><b>By fleet: Shortfall due to funding constraints</b></p>													
29	Scallop Dredge	AA	LIM	NE	all	235	229	229	237	2	101%	Industry funded, coverage is dependent on industry activity	
30	Scallop Dredge	OPEN	GEN	MA	all	49	52	6	49	0	100%	Fish stock assessment support	
31	Scallop Dredge	OPEN	GEN	NE	all	23	25	51	23	0	100%	Fish stock assessment support	
32	Scallop Dredge	OPEN	LIM	MA	all	3443	3089	3089	1356	-2087	39%	Industry funded, coverage is dependent on industry activity	
33	Scallop Dredge	OPEN	LIM	NE	all	475	426	426	1628	1153	343%	Industry funded, coverage is dependent on industry activity	
34	Mid-water Paired & Single Trawl	OPEN	all	MA	all	34	36	4	66	32	194%	Fish stock assessment support	P
35	Mid-water Paired & Single Trawl	OPEN	all	NE	all	379	406	848	379	0	100%	Fish stock assessment support	
36	Pots and Traps, Fish	OPEN	all	MA	all	26	28	3	0	-26	0%		P
37	Pots and Traps, Fish	OPEN	all	NE	all	13	14	29	0	-13	0%		P
38	Pots and Traps, Conch	OPEN	all	MA	all	16	17	2	0	-16	0%		P
39	Pots and Traps, Conch	OPEN	all	NE	all	13	14	29	0	-13	0%		P
40	Pots and Traps, Hagfish	OPEN	all	MA	all	128	137	16	0	-128	0%		P
41	Pots and Traps, Hagfish	OPEN	all	NE	all	56	60	125	0	-56	0%		
42+	Pots and Traps, Shrimp	OPEN	all	NE	all	9	10	20	0	-9	0%		P
43	Pots and Traps, Lobster	OPEN	all	MA	all	68	73	8	0	-68	0%		P
44	Pots and Traps, Lobster	OPEN	all	NE	all	427	457	956	0	-427	0%		P
45	Pots and Traps, Crab	OPEN	all	MA	all	37	40	5	0	-37	0%		P
46	Pots and Traps, Crab	OPEN	all	NE	all	51	55	114	0	-51	0%		P
47+	Beam Trawl	OPEN	all	MA	all	31	33	4	0	-31	0%		P
48+	Beam Trawl	OPEN	all	NE	all	18	19	40	0	-18	0%		P
49+	Dredge, Other	OPEN	all	MA	all	23	25	3	0	-23	0%		P
50	Ocean Quahog/Surf Clam Dredge	OPEN	all	MA	all	67	72	8	0	-67	0%		P
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	29	31	65	0	-29	0%		P
SAP/B day/US-CAN (covered as part of NE groundfish)													
Discovery Days													
Total Days						14,147	14,375	14,375	14,375				Notes:
Projected Costs						\$15,082,110	\$15,550,000	\$15,550,000	11,539,038				1: Sector monitoring coverage is dependent on industry activity

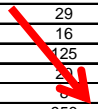


# 2010 Prioritization Table

(4)

Row	Gear Type	Access Area	Trip Cat.	Region	Mesh	2010 SBRM Recommended Sea Days	Available Coverage with shortfall applied proportionally	Available Coverage with shortfall applied proportionally with funding constraints	Age of thin boats	Prioritized April 2010 - March 2011 Coverage	April 2010 - March 2011 Difference from Preferred Alternative	April 2010 - March 2011 Percentage of Preferred Alternative	Justification	Basis for SBRM Coverage
1	Longline	OPEN	all	MA	all	109	117	13		104	-5	95%	Fish stock assessment support <sup>1</sup>	P
2	Longline	OPEN	all	NE	all	25	27	56		201	176	806%	Fish stock assessment support <sup>1</sup>	
3	Hand Line	OPEN	all	MA	all	70	75	9		0	-70	0%		P
4	Hand Line	OPEN	all	NE	all	50	54	113		50	0	99%	Fish stock assessment support	
5	Otter Trawl	OPEN	all	MA	sm	1415	1515	174		116	-1299	8%	Fish stock assessment and turtle bycatch support	
6								267		1537	-638	71%	Fish stock assessment and turtle bycatch support <sup>1</sup>	
7								4906		733	-1459	33%	Fish stock assessment support	
8								1495		4190	3522	627%	Fish stock assessment support <sup>1</sup>	
9								11		24	12	204%	Industry funded, coverage is dependent on industry activity	P
10								37		5	-36	11%	Industry funded, coverage is dependent on industry activity	P
11								5		41	0	100%	Fish stock assessment support	P
12								75		34	-50	40%	Industry funded, coverage is dependent on industry activity Coverage is expected for fish stock assessment support and US/CAN monitoring <sup>1</sup>	P
13+								7		0	-3	15%		P
14								12		0	-97	0%		P
15								81		16	-20	44%	Fish stock assessment support	
16+								2		0	-15	0%		P
17+								20		0	-9	0%		P
18								4		0	-35	0%	(355 days for protected species bycatch not included in SBRM)	
19								59		100	-378	21%	Fish stock assessment support <sup>1</sup> (56 days for protected species bycatch not included in SBRM)	P*
20								52		302	-121	71%	Fish stock assessment support <sup>1</sup> (62 days for protected species bycatch not included in SBRM)	
21								27		12	0	102%	Fish stock assessment support (2 days for protected species bycatch not included in SBRM)	P
22								356		1667	1508	1049%	Fish stock assessment support <sup>1</sup> (69 days for protected species bycatch not included in SBRM)	
23								313		739	599	528%	Fish stock assessment support <sup>1</sup> (46 days for protected species bycatch not included in SBRM)	
24								1		20	10	200%	Fish stock assessment and turtle bycatch support	P
25								67		30	0	100%	Fish stock assessment support	
26								39		224	181	521%	Industry funded, coverage is dependent on industry activity	
27								11		30	18	252%	Industry funded, coverage is dependent on industry activity	
28								83		442	349	476%	Industry funded, coverage is dependent on industry activity	
29								229		257	2	101%	Industry funded, coverage is dependent on industry activity	
30								6		49	0	100%	Fish stock assessment support	
31								51		23	0	100%	Fish stock assessment support	
32								3089		1356	-2087	39%	Industry funded, coverage is dependent on industry activity	
33								426		1628	1153	343%	Industry funded, coverage is dependent on industry activity	
34								4		66	32	194%	Fish stock assessment support	P
35								848		379	0	100%	Fish stock assessment support	
36	Pots and Traps, Fish	OPEN	all	MA	all	29	29	3		0	-26	0%		P
37	Pots and Traps, Fish	OPEN	all	NE	all	13	14	29		0	-13	0%		P
38	Pots and Traps, Conch	OPEN	all	MA	all	16	17	2		0	-16	0%		P
39	Pots and Traps, Conch	OPEN	all	NE	all	13	14	29		0	-13	0%		P
40	Pots and Traps, Hagfish	OPEN	all	MA	all	128	137	16		0	-128	0%		P
41	Pots and Traps, Hagfish	OPEN	all	NE	all	56	60	125		0	-56	0%		
42+	Pots and Traps, Shrimp	OPEN	all	NE	all	9	10	2		0	-9	0%		P
43	Pots and Traps, Lobster	OPEN	all	MA	all	68	73	6		0	-68	0%		P
44	Pots and Traps, Lobster	OPEN	all	NE	all	427	457	956		0	-427	0%		P
45	Pots and Traps, Crab	OPEN	all	MA	all	37	40	5		0	-37	0%		P
46	Pots and Traps, Crab	OPEN	all	NE	all	51	55	114		0	-51	0%		P
47+	Beam Trawl	OPEN	all	MA	all	31	33	4		0	-31	0%		P
48+	Beam Trawl	OPEN	all	NE	all	18	19	40		0	-18	0%		P
49+	Dredge, Other	OPEN	all	MA	all	23	25	3		0	-23	0%		P
50	Ocean Quahog/Surf Clam Dredge	OPEN	all	MA	all	67	72	8		0	-67	0%		P
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	29	31	65		0	-29	0%		P
	SAP/B day/US-CAN (covered as part of NE groundfish)													
	Discovery Days													
	Total Days					14,147	14,375	14,375		14,375				
	Projected Costs					\$15,082,110	\$15,550,000	\$15,550,000		11,539,038				

4) Prioritized coverage levels (Provisional due to Pre-trip notification system, Industry funded days, etc)



Notes:  
1: Sector monitoring coverage is dependent on industry activity

# 2010 Prioritization Table

(5)

Row	Gear Type	Access Area	Trip Cat.	Region	Mesh	2010 SBRM Recommended Sea Days	Available Coverage with shortfall applied proportionally	Available Coverage with shortfall applied proportionally within funding constraints	Prioritized April 2010 - March 2011 Coverage	April 2010 - March 2011 Difference from Preferred Alternative	April 2010 - March 2011 Percentage of Preferred Alternative	Justification	Basis for SBRM Coverage	
1	L	OPEN	all	MA	all	100	117	12	104	5	95%	Fish stock assessment support <sup>1</sup>	P	
2	L	OPEN	all	MA	all	100	117	12	104	5	806%	Fish stock assessment support <sup>1</sup>		
3	H	OPEN	all	MA	all	100	117	12	104	5	0%		P	
4	H	OPEN	all	MA	all	100	117	12	104	5	99%	Fish stock assessment support		
5	C	OPEN	all	MA	all	100	117	12	104	5	8%	Fish stock assessment and turtle bycatch support		
6	C	OPEN	all	MA	all	100	117	12	104	5	71%	Fish stock assessment and turtle bycatch support <sup>1</sup>		
7	C	OPEN	all	MA	all	100	117	12	104	5	33%	Fish stock assessment support		
8	C	OPEN	all	MA	all	100	117	12	104	5	627%	Fish stock assessment support <sup>1</sup>		
9	S	OPEN	all	MA	all	100	117	12	104	5	204%	Industry funded, coverage is dependent on industry activity	P	
10	S	OPEN	all	MA	all	100	117	12	104	5	11%	Industry funded, coverage is dependent on industry activity	P	
11	S	OPEN	all	MA	all	100	117	12	104	5	100%	Fish stock assessment support	P	
12	S	OPEN	all	MA	all	100	117	12	104	5	40%	Industry funded, coverage is dependent on industry activity Coverage is expected for fish stock assessment support and US/CAN monitoring <sup>1</sup>	P	
13+	C	OPEN	all	MA	all	100	117	12	104	5	15%		P	
14	S	OPEN	all	MA	all	100	117	12	104	5	0%		P	
15	S	OPEN	all	MA	all	100	117	12	104	5	44%	Fish stock assessment support		
16+	R	OPEN	all	MA	all	100	117	12	104	5	0%		P	
17+	R	OPEN	all	MA	all	100	117	12	104	5	0%		P	
18	S	OPEN	all	MA	all	100	117	12	104	5	0%	(355 days for protected species bycatch not included in SBRM)		
19	S	OPEN	all	MA	all	100	117	12	104	5	21%	Fish stock assessment support <sup>1</sup> (56 days for protected species bycatch not included in SBRM)	P*	
20	S	OPEN	all	MA	all	100	117	12	104	5	71%	Fish stock assessment support <sup>1</sup> (62 days for protected species bycatch not included in SBRM)		
21	S	OPEN	all	MA	all	100	117	12	104	5	102%	Fish stock assessment support (2 days for protected species bycatch not included in SBRM)	P	
22	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	159	170	356	1667	1508	1049%	Fish stock assessment support <sup>1</sup> (69 days for protected species bycatch not included in SBRM)		
23	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xl	140	150	313	739	599	528%	Fish stock assessment support <sup>1</sup> (46 days for protected species bycatch not included in SBRM)		
24	Purse Seine	OPEN	all	MA	all	10	11	1	20	10	200%	Fish stock assessment and turtle bycatch support	P	
25	Purse Seine	OPEN	all	NE	all	30	32	67	30	0	100%	Fish stock assessment support		
26	Scallop Dredge	AA	GEN	MA	all	43	39	39	224	181	521%	Industry funded, coverage is dependent on industry activity		
27	Scallop Dredge	AA	GEN	NE	all	12	11	11	30	18	252%	Industry funded, coverage is dependent on industry activity		
28	Scallop Dredge	AA	LIM	MA	all	93	83	83	442	349	476%	Industry funded, coverage is dependent on industry activity		
29	Scallop Dredge	AA	LIM	NE	all	255	229	229	257	2	101%	Industry funded, coverage is dependent on industry activity		
30	Scallop Dredge	OPEN	GEN	MA	all	49	52	6	49	0	100%	Fish stock assessment support		
31	Scallop Dredge	OPEN	GEN	NE	all	23	25	51	23	0	100%	Fish stock assessment support		
32	Scallop Dredge	OPEN	LIM	MA	all	3443	3089	3089	1356	-2087	39%	Industry funded, coverage is dependent on industry activity		
33	Scallop Dredge	OPEN	LIM	NE	all	475	426	426	1628	1153	343%	Industry funded, coverage is dependent on industry activity		
34	Mid-water Paired & Single Trawl	OPEN	all	MA	all	34	36	4	66	32	194%	Fish stock assessment support	P	
35	Mid-water Paired & Single Trawl	OPEN	all	NE	all	379	406	848	379	0	100%	Fish stock assessment support		
36	Pots and Traps, Fish	OPEN	all	MA	all	26	28	3	0	-26	0%		P	
37	Pots and Traps, Fish	OPEN	all	NE	all	13	14	29	0	-13	0%		P	
38	Pots and Traps, Conch	OPEN	all	MA	all	16	17	2	0	-16	0%		P	
39	Pots and Traps, Conch	OPEN	all	NE	all	13	14	29	0	-13	0%		P	
40	Pots and Traps, Hagfish	OPEN	all	MA	all	128	137	16	0	-128	0%		P	
41	Pots and Traps, Hagfish	OPEN	all	NE	all	56	60	125	0	-56	0%			
42+	Pots and Traps, Shrimp	OPEN	all	NE	all	9	10	20	0	-9	0%		P	
43	Pots and Traps, Lobster	OPEN	all	MA	all	68	73	8	0	-68	0%		P	
44	Pots and Traps, Lobster	OPEN	all	NE	all	427	457	956	0	-427	0%		P	
45	Pots and Traps, Crab	OPEN	all	MA	all	37	40	5	0	-37	0%		P	
46	Pots and Traps, Crab	OPEN	all	NE	all	51	55	114	0	-51	0%		P	
47+	Beam Trawl	OPEN	all	MA	all	31	33	4	0	-31	0%		P	
48+	Beam Trawl	OPEN	all	NE	all	18	19	40	0	-18	0%		P	
49+	Dredge, Other	OPEN	all	MA	all	23	25	3	0	-23	0%		P	
50	Ocean Quahog/Surf Clam Dredge	OPEN	all	MA	all	67	72	8	0	-67	0%		P	
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	29	31	65	0	-29	0%		P	
	SAP/B day/US-CAN (covered as part of NE groundfish)													
	Discovery Days													
	Total Days					14,147	14,375	14,375	14,375				Notes:	
	Projected Costs					\$15,082,110	\$15,550,000	\$15,550,000	11,539,038				<sup>1</sup> : Sector monitoring coverage is dependent on industry activity	

5) The rationale for the recommended prioritization

- Statistical & Ad-hoc
- Industry funded
- Pre-Trip Notification program



# Table 6: Expected achieved CV for prioritized days

Row	GearType	Access Area	Trip Cat.	Region	Mesh	2010 SBRM Prioritized Sea Days	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	TURS	Pilot	
1	Longline	OPEN	all	MA	all	104																P	
2	Longline	OPEN	all	NE	all	201	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	P
3	Hand Line	OPEN	all	MA	all	0																P	
4	Hand Line	OPEN	all	NE	all	191	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	P
5	Otter Trawl	OPEN	all	MA	sm	116	*	*	*	*	*	0.780	*	*	0.662	0.751	0.772	1.183	*	*	*	1.138	P
6	Otter Trawl	OPEN	all	MA	lg	1,537	*	*	*	*	*	*	*	0.092	0.370	0.090	0.112	0.119	*	*	*	*	P
7	Otter Trawl	OPEN	all	NE	sm	602	*	*	*	*	*	*	*	*	0.445	*	0.587	0.614	*	*	*	0.546	P
8	Otter Trawl	OPEN	all	NE	lg	4,190	*	*	*	*	*	*	0.089	0.034	0.113	0.033	0.067	0.083	*	*	*	*	P
9	Scallop Trawl	AA	GEN	MA	all	24																P	
10	Scallop Trawl	AA	LIM	MA	all	5																P	
11	Scallop Trawl	OPEN	GEN	MA	all	0																P	
12	Scallop Trawl	OPEN	LIM	MA	all	34																P	



**New analysis in 2010**

**Table 6. Expected achieved CV by species group and fleet for the prioritized days.**

**FOR EXAMPLE:**  
**ROW 6 MA OTTER TRAWL LARGE-MESH Fleet**

13+	Ott																						P
14	Shr																						P
15	Shr																					*	P
16+	Flo																						P
17+	Flo																						P
18	Sin																						P
19	Sin																					0.859	P*
20	Sin																					0.361	P
21	Sin																						P
22	Sin																					*	P
23	Sin																					*	P
24	Pur																						P
25	Pur																					*	P
26	Sc																					*	P
27	Sc																					*	P
28	Sc																					*	P
29	Sc																					*	P
30	Sc																					*	P
31	Sc																					*	P
32	Sc																					0.522	P
33	Sc																					*	P
34	Mid																					*	P
35	Mid																					*	P
36	Pot																						P
37	Pot																						P
38	Pot																						P
39	Pot																						P
40	Pot																						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 Dredge	OPEN	all	MA	all	0																	P
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	0																	P



# Table 6. Expected achieved CV for prioritized days

Example: MA Otter trawl large-mesh (row 6)

SBRM recommended days = 2,175 (Table 5)

Prioritized sea days = 1,537 (638 day difference)

The expected CV achieved for the important species groups shows that 4 of the 5 species groups have a CV less than 30%. An additional 638 days would be needed to lower the small-mesh groundfish (GFS) CV by 7% for all species group to have a 30% or less CV.

## Table 6 row 6

Row	2010 SBRM Prioritized Sea Days	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	TURS	Pilot
6	1,537	*	*	*	*	*	*	*	0.092	0.370	0.090	0.112	0.119	*	*	*	

\* indicate species groups filtered out through the importance filter process

# Important Caveats for 2010 Prioritization

- Funding constraints remain an issue and shortfall by fleet results; Mid-Atlantic fleets and small-mesh fleets remain under funded.
- Change in management regulations will result in different fishing practices such that previous year's data can not be used to inform the prioritization, thus provisional.
- High level of NE Groundfish coverage, fleet coverage rates will rely more on proportional allocation and systematic sampling governed by actual fishing activity.

# Important Caveats for 2010 Prioritization

continued.

- The pre-trip notification system will dynamically assign sea day coverage to industry activity for common pool and sector fleets by gear type and access area.
- Industry-funded coverage in the scallop fleets is the subject of ongoing discussions between industry and government. These analysis have assumed coverage, however actual coverage will be based on outcome of discussions.



**Comments on prioritization  
are requested by February 26, 2010**





## Back pocket slides

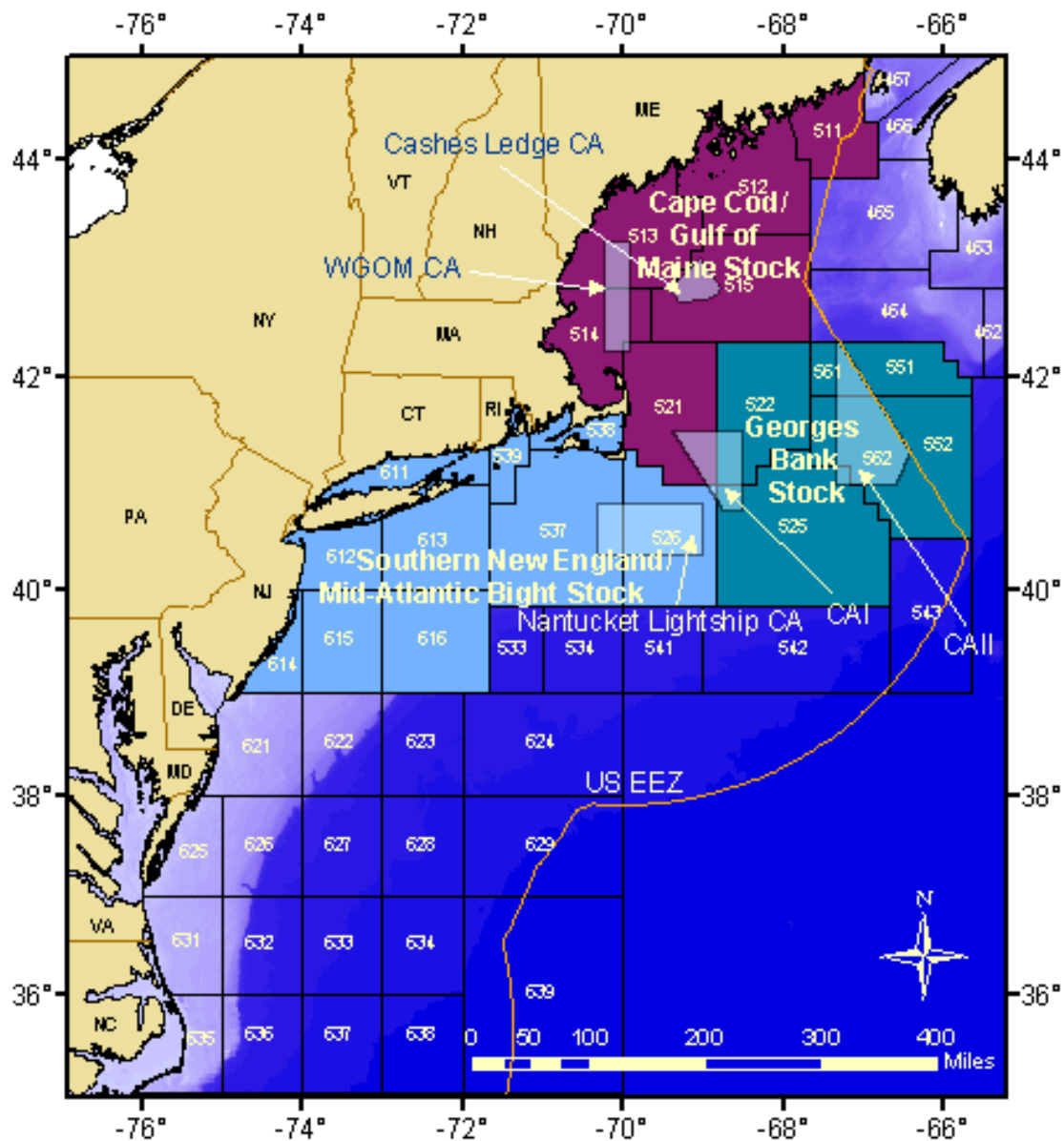
# What is Pilot Coverage?

Pilot coverage is defined as the minimum level of coverage to acquire bycatch data with which to calculate variance estimates that in turn can be used to further define the level of sampling needed.

Based on *Evaluating Bycatch: A National Approach to Standardized Bycatch Monitoring Programs* (NMFS 2004), pilot coverage can range between 0.5% and 2%.

In the SBRM analysis, 2% of annual trips was used, with a minimum of 12 trips and maximum of 400 trips.

The SBRM used 2% of trips \* average trip length to determine the number of sea days for fleets that did not have observer coverage in 2004.



## Yellowtail Flounder

3 Stocks:

Gulf of Maine

Georges Bank

Southern New England –  
Mid-Atlantic

Figure 7.1. Statistical areas used to define the Cape Cod/Gulf of Maine, Georges Bank, and Southern New England/Mid-Atlantic Bight yellowtail stocks.





## *Program Costs*

**SEADAY = \$1,200**

**Observer Trainings**

**Observer Salaries and Benefits**

**Facility, Gear, Equipment**

**Insurance**

**Travel and Trip Deployment**

**Data Processing**

**Data Quality Controls**

# SBRM POLICY ISSUES (2)

## Mid-Atlantic Coverage

- Currently 94% of funding is mandated for NE groundfish coverage
  - SBRM operationally defines fisheries/fleet by physical attributes
    - Physical attributes: gear type, mesh size, space, time
    - No 'species' defined fisheries - to avoid double count when dealing with multiple FMPs
    - For example, there is no "Loligo" fleet. The sampling frame does not exist in advance and therefore one cannot improve the estimates of discards of butterfish in the Loligo fleet per se. Instead, one can improve the estimates of discards in the small mesh trawl fleet in the mid Atlantic, with the **expectation but no guarantee** that precision of butterfish discards will improve.
- **HOW FLEXIBLE IS FUNDING MANDATE?**
- **SPECIES-SPECIFIC FISHERIES REQUIRE A CALL-IN PROGRAM. IS THIS DESIRED?**

# SBRM POLICY ISSUES (3)

- Finite funds for a given sea day schedule
  - 'Zero-sum game' , 'rob Peter to pay Paul'
  - Suggest X% of funds taken off the top to use as discretionary coverage to support priorities

CAN NRCC AGREE ON A SPECIFIED FRACTION OF DISCRETIONARY DAYS?

IS THIS LEGAL UNDER SBRM?

- Protected resource species (marine mammals, birds)
  - some coverage is non-overlapping with fish due to:
    - spatio-temporal patterns of interactions
    - sampling protocols used (gillnet trips)

# SBRM POLICY ISSUES (4)

- Evaluate Management Regulations

- Need gear modification data in VTR (gear type and mesh size are no longer sufficient to evaluate management measures)

New gear codes are helpful

- Need SAP identification (need linkages between databases)
  - Expected to have with A16 implementation

## Importance Filter: Total Fishing Mortality Ratio

$$\text{Fishing Mortality Ratio} = D_{jh} / (\sum L_j + \sum D_j),$$

Where D = discards, L = commercial landings plus recreational landings (A+B1), j = species, and h = fishing mode

Filter cells where magnitude of discards is minor component of total fishing-related mortality of a species using a standardized approach

Derive cumulative fishing mortality percentages for each species/species group

# SBRM Importance Filter

- Baseline sea days  
15 species groups and  
15 fleets
- Simultaneously apply  
the Unlikely cells filter,  
the 95% Discard filter  
and the 98% Total  
Mortality filter
- For each fleet, select  
the maximum sea days  
needed among the 15  
species groups then  
sum over all fleets

