

Science, Service, Stewardship



# Standardized Bycatch Reporting Methodology: Annual Discard Report and Consultation / Prioritization Process in 2011

*Northeast Fisheries Science Center and  
Northeast Regional Office*

Presentation To:  
Mid Atlantic Fishery Management Council  
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New England Fishery Management Council  
Portsmouth, NH ( delivered Jan 25, 2011)  
Webinar : March 2, 2011

**NOAA  
FISHERIES  
SERVICE**

# Standardized Bycatch Reporting Methodology (SBRM)

- A combination of sampling design, data collection procedures and analyses used to estimate bycatch in multiple fleets.
- A structured approach for evaluating the efficacy of the allocation of observer days to multiple fleets to monitor a large number of species under NE and MA FMPs
- 52 separate fleets, 14 FMPs + Turtles

- Integrated allocation approach for observer coverage based on relative precision **AND** the relative importance of discards for stock dynamics
- **Methods to ensure that sea day allocations are not driven by imprecise estimates of small quantities.**
- Includes new fleets as they emerge, e.g. Ruhle Trawl in 2010 and Haddock Separate Trawl in 2011
- Allocations are based on FMP species **BUT** all species are monitored.
- Responds to new demands, e.g., river herring

# 2011 SBRM Documents available at:

[www.nefsc.noaa.gov/femad/fsb/SBRM/  
SBRM\\_Annual\\_Discard\\_Reports.htm](http://www.nefsc.noaa.gov/femad/fsb/SBRM/SBRM_Annual_Discard_Reports.htm)

[www.nefsc.noaa.gov](http://www.nefsc.noaa.gov)

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

# Outline of Today's Presentation

- 1) SBRM Annual Discard Report 2011: Summary of NE Fishery Observer Program data
- 2) SBRM Sea Day Analysis and Prioritization
  - ✓ 2011 Sea days needed for 30% CV (SBRM standard)
  - ✓ Comparison of SBRM Standard sea days & Prioritized sea days
  - ✓ **COMMENTS REQUESTED BY MARCH 4, 2011 (Observer coverage Apr 2011-Mar 2012)**
- 3) Plans for SBRM 3-year Evaluation Report 2011

# 1) SBRM Annual Discard Report 2011

-This is a very large document

- Summary of NEFOP data  
July 2009 through June 2010
- Species group (Section 1)
- Individual species (Section 2)

## 2) SBRM Sea Day Analysis and Prioritization 2011

### Summary of Tables

Table 1: List of Species Groups

Table 2: Summary of Trips by NEFOP, VTR

Table 3: Summary of Days by NEFOP, VTR

Table 4: Sea Days needed by species group & fleet

Table 5: Summary of sea days by fleet:

SBRM standard sea days,

proportionally allocated sea days,

prioritized sea days

Table 6: Expected achieved CV given prioritized days

# 2011 SBRM Standard Sea Days Table 4

Row	Gear Type	Access Area	Trip Cat.	Region	Mesh	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	TURS	Pilot days	2011 SBRM Standard Sea Days	Pilot		
1	Longline	OPEN	all	MA	all	0	0	0	0	0	0	79	79	0	79	79	0	0	79	79	79	79	P		
2	Longline	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	184	0	0	0	0	0	0	184	P	
3	Hand Line	OPEN	all	MA	all	0	0	0	0	0	0	0	74	0	0	0	0	0	0	0	74	74	P		
4	Hand Line	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	49	P	
5	Otter Trawl	OPEN	all	MA	sm	0	0	0	0	0	937	0	0	709	467	553	577	0	0	1,449	1,449	1,449	P		
6	Otter Trawl	OPEN	all	MA	lg	0	0	0	0	0	0	128	161	0	96	139	128	0	0	2,835	229	2,835	P		
7	Otter Trawl	OPEN	all	NE	sm	0	0	0	0	0	655	0	0	762	697	520	529	0	0	4,274	167	4,274	P		
8	Otter Trawl	OPEN	all	NE	lg	0	0	0	5,183	0	0	154	97	433	105	122	294	0	0	0	496	5,183	P		
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		
10 +	Scallop Trawl	AA	LIM	MA	all	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	P		
11	Scallop Trawl	OPEN	GEN	MA	all	29	0	0	0	29	29	29	29	29	29	29	29	0	0	29	29	29	P		
12	Scallop Trawl	OPEN	LIM	MA	all	95	0	0	0	95	95	95	95	95	95	95	95	0	0	95	95	95	P		
13 +	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	22	P	
14 +	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	21	P	
15																							74	P	
16																								18	
17 +																								3	P
18 +																								9	P
19																								39	P*
20																								755	
21																								86	
22																								12	P
23																								147	
24																								256	
25																								9	P
26																								23	
27																								29	P
28																								17	P
29																								178	
30																								170	
31																								43	
32																								68	
33																								1,417	
34																								658	
35																								30	P
36																								190	
37																								24	P
38																								12	P
39 +																								20	P
40 +																								15	P
41 +																								3	P
42 +																								60	
43 +																								8	P
44																								66	P
45																								452	P
46																								12	P
47																								53	P
48 +																								29	P
49 +																								14	P
50 +																								21	P
51																								61	P
52																								32	P
						Total	436	422	222	6,041	900	2,102	1,958	2,883	2,475	2,773	2,669	2,748	315	337	11,660	3,991	19,507		

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

Row 2: Dogfish (DOG) is the 'driving' species group for this fleet.

Row 4: all species group are filtered out (0 days), used 'pilot' to maintain some coverage.

Row 12: fleet with no observer coverage, use 'pilot' to obtain coverage.

# SBRM Standard Sea Days

	2009 SBRM	2010 SBRM	2011 SBRM
Data	2007-2008	2008-2009	2009-2010
Fleets	44	51	52
Baseline Sea Days	54,631	51,252	52,651
Filtered Sea Days	15,125	14,147	19,507
Fleets with Pilot coverage	24	28	30

SBRM Standard Sea Days that include 95% of discards and 98% of total mortality

NE Otter Trawl large-mesh (Row 8) had largest increase in SBRM Standard Sea Days

# SBRM Standard Sea Days 2011

Agency-funded fleets 16,843 days

Industry-funded fleets 2,664 days

- nine scallop fleets  
(rows 9, 10, 12, 27, 28, 29, 30, 33, 34)
- not Open Area Limited Access Gen. Cat. fleets  
(rows 11, 31, 32)

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Total for all fleets 19,507 days

# Funding\* for April 2011 - March 2012

Agency-funded Sources	10,650 days
Atlantic Coast	544 days
Herring (CA I)	127 days
NE Groundfish	9,979 days
<u>Industry-funded (scallop)</u>	<u>3,254 days</u>

Total Funding 13,904 days

**13,904 funded days < 19,507 SBRM days**

*--Scallop days based preliminary compensation rate analysis (Jan 14, 2011) that affects 9 fleets (rows 9, 10, 12, 27, 28, 29, 30, 33, 34)*

*--Groundfish days include NEFOP and At-Sea Monitors days*

*---\*as of January 3, 2011*

(1)

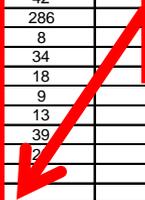
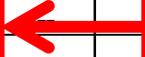
# 2011 Prioritization Table 5

Row	Gear Type	Access Area	Trip Cat.	Region	Mesh	2011 SBRM Standard Sea Days	Available Coverage with shortfall applied proportionally	Coverage with shortfall applied proportionally within funding constraints	April 2011 - March 2012 Coverage (January 2011)	April 2011 - March 2012 Difference from SBRM Standard	April 2011 - March 2012 Percentage of SBRM Standard	Justification	Basis for 2011 SBRM Standard Coverage
1	Longline	OPEN	all	MA	all	79	50						
2	Longline	OPEN	all	NE	all	184	116						
3	Hand Line	OPEN	all	MA	all	74	47						
4	Hand Line	OPEN	all	NE	all	49	31						
5	Otter Trawl	OPEN	all	MA	sn	1,449	916						
6	Otter Trawl	OPEN	all	MA	lg	2,835	1,793						
7	Otter Trawl	OPEN	all	NE	sn	4,274	2,702						
8	Otter Trawl	OPEN	all	NE	lg	5,183	3,277						
9 +	Scallop Trawl	AA	GEN	MA	all	12	15						
10 +	Scallop Trawl	AA	LIM	MA	all	88	107						
11	Scallop Trawl	OPEN	GEN	MA	all	29	18						
12	Scallop Trawl	OPEN	LIM	MA	all	95	116						
13 +	Otter Trawl, Ruhle	OPEN	all	NE	lg	22	14						
14 +	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	21	13						
15	Shrimp Trawl	OPEN	all	MA	all	74	47						
16	Shrimp Trawl	OPEN	all	NE	all	18	11						
17 +	Floating Trap	OPEN	all	MA	all	3	2						
18 +	Floating Trap	OPEN	all	NE	all	9	6						
19	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sn	39	25						
20	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	755							
21	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xl	86	54						
22	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sn	12	8						
23	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	147	93						
24	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xl	256	162						
25	Purse Seine	OPEN	all	MA	all	9	6						
26	Purse Seine	OPEN	all	NE	all	23	15						
27	Scallop Dredge	AA	GEN	MA	all	29	35						
28	Scallop Dredge	AA	GEN	NE	all	17	21						
29	Scallop Dredge	AA	LIM	MA	all	178	217						
30	Scallop Dredge	AA	LIM	NE	all	170	208						
31	Scallop Dredge	OPEN	GEN	MA	all	43	27						
32	Scallop Dredge	OPEN	GEN	NE	all	68	43						
33	Scallop Dredge	OPEN	LIM	MA	all	1,417	1,731						
34	Scallop Dredge	OPEN	LIM	NE	all	658	804						
35	Mid-water Paired & Single Trawl	OPEN	all	MA	all	30	19						
36	Mid-water Paired & Single Trawl	OPEN	all	NE	all	190	120						
37	Pots and Traps, Fish	OPEN	all	MA	all	24	15						
38	Pots and Traps, Fish	OPEN	all	NE	all	12	8						
39 +	Pots and Traps, Conch	OPEN	all	MA	all	20	13						
40 +	Pots and Traps, Conch	OPEN	all	NE	all	15	9						
41 +	Pots and Traps, Hagfish	OPEN	all	MA	all	3	2						
42 +	Pots and Traps, Hagfish	OPEN	all	NE	all	60	38						
43 +	Pots and Traps, Shrimp	OPEN	all	NE	all	8	5						
44	Pots and Traps, Lobster	OPEN	all	MA	all	66	42						
45	Pots and Traps, Lobster	OPEN	all	NE	all	452	286						
46	Pots and Traps, Crab	OPEN	all	MA	all	12	8						
47	Pots and Traps, Crab	OPEN	all	NE	all	53	34						
48 +	Beam Trawl	OPEN	all	MA	all	29	18						
49 +	Beam Trawl	OPEN	all	NE	all	14	9	13	0	-14	0%		P
50 +	Dredge, Other	OPEN	all	MA	all	21	13	2	0	-21	0%		P
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	MA	all	61	39	6	0	-61	0%		P
52	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	32	20	29	0	-32	0%		P
	SAP/B day/US-CAN (now covered as part of NE groundfish)								0				
	Herring CAI coverage								127			Fish stock assessment support	
	Discovery Days								0				
	Total Days					19,507	13,904	13,904	13,904			Notes:	
	Projected Costs					\$22,276,200	\$15,301,850	\$15,301,850	\$15,645,050			1. Monitoring coverage is dependent on industry activity	

1) 2011 SBRM Standard Sea Days: at-sea observer coverage levels required to attain the SBRM performance standards in each applicable fishery

Based on data from July 2009 to June 2010

19,507 sea days



# (2) (3) 2011 Prioritization Table 5

2) Coverage levels that would be available if funds were allocated proportionally across all applicable fisheries without funding constraints

3) Coverage levels that would be available if funds were allocated proportionally across all applicable fisheries with funding constraints

	2011 SBRM Standard Sea Days	Available Coverage with shortfall applied proportionally	Available Coverage with shortfall applied proportionally within funding constraints	Prioritized April 2011-March 2012 Coverage (January 2011)	April 2011-March 2012 Difference from SBRM Standard	April 2011	Basic for M ard ge
	79	50	7	44	-35		
	184	116	167	237	53		
	74	47	7	0	-74		
	49	31	45	419	370		
	1,449	916	137	616	-833		
	2,835	1,793	269	820	-2015		
	4,274	2,702	3,891	529	-3745		
	5,183	3,277	4,718	4,235	-948		
	12	15	32	30	18		
	88	107	237	34	-54		
	29	18	3	0	-29		
	05	116	71	30	-65		
	22	14	20	11	-11		
	21	13	19	15	-6		
	74	47	7	0	-74		
	18	11	16	18	0		
	3	2	0	0	-3		
	9	6	8	0	-9		
	39	25	4	0	-39		
	755	477	72	206	-549		
	86	54	8	324	238		
	12	8	11	0	-12		
	147	93	134	1,822	1675		
	256	162	233	611	355		
	9	6	1	43	34		
	23	15	21	112	89		
	29	35	78	40	11		
	17	21	74	60	43		
	178	217	479	723	545		
	170	208	741	755	585		
	43	27	4	43	0		
	68	43	62	68	0		
	1,417	1,731	1,053	935	-482		
	658	804	489	647	-11		
	30	19	3	30	0		
	190	120	173	235	45		
	24	15	2	0	-24		
	12	8	11	85	73		
	20	13	2	0	-20		
	15	9	14	0	-15		
	3	2	0	0	-3		
	60	38	55	0	-60		
	8	5	7	0	-8		
	66	42	6	0	-66	0%	P
	452	286	411	0	-452	0%	P
	12	8	1	0	-12	0%	P
	53	34	48	0	-53	0%	P
	29	18	3	0	-29	0%	P
	14	9	13	0	-14	0%	P
	21	13	2	0	-21	0%	P
	61	39	6	0	-61	0%	P
	32	20	29	0	-32	0%	P
				0			
	SAP/B day/US-CAN (now covered as part of NE groundfish)			127			Fish stock assessment support
	Herring CAI coverage			0			
	Discovery Days			0			
	Total Days	19,507	13,904	13,904			Notes:
	Projected Costs	\$22,276,200	\$15,301,850	\$15,301,850	\$15,645,050		1. Monitoring coverage is dependent on industry activity

# 2011 Prioritization Table 5 (4)

Row	Gear Type	Access Area	Trip Cat.	Region	Mesh	2011 SBRM Standard Sea Days	Available Coverage with shortfall applied proportionally	Available Coverage with shortfall applied proportionally within funding constraints	Prioritized April 2011 - March 2012 Coverage (January 2011)	April 2011 - March 2012 Difference from SBRM Standard	April 2011 - March 2012 Percentage of SBRM Standard	Justification	Basis for 2011 SBRM Standard Coverage
1	Longline	OPEN	all	MA	all	79	50	7	44	-35	56%	Fish stock assessment support <sup>1</sup>	P
2	Longline	OPEN	all	NE	all	184	116	167	237	53	129%	Fish stock assessment support <sup>1</sup>	
3	Hand Line	OPEN	all	MA	all	74	47	7	0	-74	0%		P
4	Hand Line	OPEN	all	NE	all	49	31	45	419	370	854%	Fish stock assessment support <sup>1</sup>	
5								7	616	-833	42%	Fish stock assessment and turtle bycatch support	
6								9	820	-2015	29%	Fish stock assessment and turtle bycatch support	
7								91	529	-3745	12%	Fish stock assessment support <sup>1</sup>	
8								18	4,235	-948	82%	Fish stock assessment support <sup>1</sup>	
9								2	30	18	250%	Industry funded, coverage is dependent on industry activity	P
10								7	34	-54	39%	Industry funded, coverage is dependent on industry activity	P
11								7	0	-29	0%		P
12								0	30	-65	32%	Industry funded, coverage is dependent on industry activity	P
13								0	11	-11	50%	Fish stock assessment support <sup>1</sup>	
14								9	15	-6	73%	Fish stock assessment support <sup>1</sup>	
15								0	0	-74	0%		P
16								5	18	0	100%	Fish stock assessment support	
17								0	0	-3	0%		P
18								0	0	-9	0%		P
19								0	0	-39	0%	(150 days for protected species bycatch not included in SBRM)	P*
20								2	206	-549	27%	Fish stock assessment support <sup>1</sup> (24 days for protected species bycatch not included in SBRM)	
21								0	324	238	377%	Fish stock assessment support <sup>1</sup> (26 days for protected species bycatch not included in SBRM)	
22								0	0	-12	0%	(2 days for protected species bycatch not included in SBRM)	P
23								4	1,822	1675	1239%	Fish stock assessment support <sup>1</sup> (51 days for protected species bycatch not included in SBRM)	
24								3	611	355	239%	Fish stock assessment support <sup>1</sup> (33 days for protected species bycatch not included in SBRM)	
25								0	43	34	478%	Fish stock assessment support	P
26								0	112	89	487%	Fish stock assessment support	
27								0	40	11	138%	Industry funded, coverage is dependent on industry activity	P
28								0	60	43	353%	Industry funded, coverage is dependent on industry activity	P
29								9	723	545	406%	Industry funded, coverage is dependent on industry activity	
30								1	755	585	444%	Industry funded, coverage is dependent on industry activity	
31								0	43	0	100%	Fish stock assessment support	
32								2	68	0	100%	Fish stock assessment support	
33								53	935	-482	66%	Industry funded, coverage is dependent on industry activity	
34								9	647	-11	98%	Industry funded, coverage is dependent on industry activity	
35								0	30	0	100%	Fish stock assessment support	P
36								3	235	45	124%	Fish stock assessment support	
37	Pots and traps, Fish	OPEN	all	MA	all	24	19	2	0	-24	0%		P
38	Pots and Traps, Fish	OPEN	all	NE	all	12	8	11	85	73	706%	Fish stock assessment support <sup>1</sup>	P
39 +	Pots and Traps, Conch	OPEN	all	MA	all	20	13	2	0	-20	0%		P
40 +	Pots and Traps, Conch	OPEN	all	NE	all	15	9	14	0	-15	0%		P
41 +	Pots and Traps, Hagfish	OPEN	all	MA	all	3	2	0	0	-3	0%		P
42 +	Pots and Traps, Hagfish	OPEN	all	NE	all	60	38	55	0	-60	0%		
43 +	Pots and Traps, Shrimp	OPEN	all	NE	all	8	5	7	0	-8	0%		P
44	Pots and Traps, Lobster	OPEN	all	MA	all	66	42	6	0	-66	0%		P
45	Pots and Traps, Lobster	OPEN	all	NE	all	452	286	411	0	-452	0%		P
46	Pots and Traps, Crab	OPEN	all	MA	all	12	8	1	0	-12	0%		P
47	Pots and Traps, Crab	OPEN	all	NE	all	53	34	48	0	-53	0%		P
48 +	Beam Trawl	OPEN	all	MA	all	29	18	3	0	-29	0%		P
49 +	Beam Trawl	OPEN	all	NE	all	14	9	13	0	-14	0%		P
50 +	Dredge, Other	OPEN	all	MA	all	21	13	2	0	-21	0%		P
51	Ocean Quahog/Surf Clam Dredge	OPEN	all	MA	all	61	39	6	0	-61	0%		P
52	Ocean Quahog/Surf Clam Dredge	OPEN	all	NE	all	32	20	29	0	-32	0%		P
	SAP/B day/US-CAN (now covered as part of NE groundfish)								0				
	Herring CAI coverage								127			Fish stock assessment support	
	Discovery Days								0				
	Total Days					19,507	13,904	13,904	13,904			Notes:	
	Projected Costs					\$22,276,200	\$15,301,850	\$15,301,850	\$15,645,050			1. Monitoring coverage is dependent on industry activity	

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





# Table 6. Expected achieved CV for prioritized days

Example: NE Otter trawl large-mesh (Row 8)

SBRM Standard days = 5,183 (Table 5)

Prioritized sea days = 4,235 (948 day difference)

The expected CV achieved for the important species groups shows that 6 of the 7 species groups have a CV less than 30%. An additional **948** days would be needed to lower the red crab (RCRAB) CV by **5%** for all species group to have a 30% or less CV.

**Table 6 Row 8**



Row	2011 SBRM Standard Sea Days	2011 SBRM Prioritized Sea Days	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	TURS	Pilot
8	5,183	4,235	*	*	*	0.346	*	*	0.053	0.041	0.086	0.043	0.046	0.073	*	*	*	

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

# MAFMC: 3 Fleets of Interest

Table 5							Prioritized April 2011- March 2012 Coverage (January 2011)	April 2011 - March 2012 Difference from SBRM Standard	April 2011 - March 2012 Percentage of SBRM Standard
Row	Gear Type	Access Area	Trip Cat.	Region	Mesh	2011 SBRM Standard Sea Days			
5	Otter Trawl	OPEN	all	MA	sm	1,449	616	-833	42%
6	Otter Trawl	OPEN	all	MA	lg	2,835	820	-2015	29%
7	Otter Trawl	OPEN	all	NE	sm	4,274	529	-3745	12%

Row 5

MA small mesh trawl

616 days = 245 non-PTNS days  
371 PTNS days

Row 6

MA large mesh trawl

820 days = 299 non-PTNS days  
521 PTNS days

Row 7

NE small mesh trawl

529 days = 150 non-PTNS days  
379 PTNS days

# MAFMC: 3 Fleets of Interest

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Fleet	2010		2011	
	Standard	Prioritized	Standard	Prioritized
<b>MA small mesh trawl</b>				
Row 5	1,415	553	1,449	616
<b>MA large mesh trawl</b>				
Row 6	2,175	1,582*	2,835	820
<b>NE small mesh trawl</b>				
Row 7	2,192	954	4,274	529

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\* Re-prioritized document warned that this may be over estimated and depended on sector activity

# Important Caveats for 2011 Prioritization

- Funding constraints remain an issue. Mid-Atlantic fleets and small-mesh fleets remain under funded.
- High level of NE Groundfish coverage.
- Fleet coverage rates will rely combination of stratified random allocation and systematic sampling governed by actual fishing activity.
- The Pre-Trip Notification System (PTNS) will dynamically assign sea day coverage for common pool and sector fleets by gear type and access area as well as for directed Loligo trips
- Industry-funded coverage in the scallop fleets is based on a preliminary compensation rate analysis.

### 3) SBRM 3-year Evaluation in 2011

*“Every 3 years, the Regional Administrator and the Science and Research Director will appoint appropriate staff to work with staff appointed by the Executive Directors of the Councils to obtain and review available data on discards and to prepare a report assessing the effectiveness of the Northeast Region SBRM.”*

*(Taken from Federal Register, Vol. 73, No. 18, Monday, January 28, 2008, Page 4738)*

# SBRM 3-year Evaluation in 2011

- Establish FMAT
- SBRM 3-year Evaluation Report 2011
  - Two parts:
    - Data portion in April 2011
    - Evaluation portion in the Fall 2011
  - Examine 2009, 2010, and 2011 SBRMs



# Standardized Bycatch Reporting Methodology

## Questions?