

Science, Service, Stewardship



Standardized Bycatch Reporting Methodology: Consultation / Prioritization Process in 2008

Northeast Fisheries Science Center

Presentation To:

New England Fishery Management Council

Portland, ME

June 3, 2008

Mid Atlantic Fishery Management Council

Atlantic City, NJ

**NOAA
FISHERIES
SERVICE**

Standardized Bycatch Reporting Methodology Consultation/Prioritization Process in 2008

- Overview of the SBRM Omnibus Amendment required review and reporting process
- Background on the sea day allocation/ optimization process
 - Constraints
 - Optimization
- Answer questions on the 2008 Consultation/ Prioritization Table

SBRM: Review and Reporting Process

Annual Report

5 specific report summaries

Evaluation Report - every 3 years

8 specific report summaries/analyses

Consultation/Prioritization Process

A process to provide the Councils and the public with an opportunity to consider, and provide input into, the decisions regarding the prioritization of at-sea observer coverage allocations, if the expected resources necessary may not be available.

4 specific components

Consultation/Prioritization Process

Summary Table

- 1) At-sea observer coverage levels required to attain the SBRM performance standards in each applicable fishery;
- 2) The coverage levels that would be available if the resource shortfall were allocated proportionately across all applicable fisheries;
- 3) The coverage levels that incorporate the recommended prioritization;
- 4) The rationale for the recommended prioritization.

2008 Consultation/Prioritization Table

Table 1. Standardized Bycatch Reporting Methodology Prioritization Information, Calendar Year 2008

| Fishing Mode | Omnibus Amendment Preferred Alternative: 95% of Discards & 98% of Mortality | Available Coverage with shortfalls applied proportionally | Prioritized | 2008 Difference from | 2008 Percentage | |
|----------------------------|---|---|-------------|----------------------|-----------------|---|
| 1 NE Clam Dredge | 50 | 31 | | | | |
| 2 MA Clam Dredge | 84 | 53 | | | | |
| 3 NE Crab Pot | 101 | 64 | | | | |
| 4 MA Crab Pot | 28 | 18 | | | | |
| 5 NE Fish Pot | 20 | 13 | | | | |
| 6 MA Fish Pot | 40 | 25 | | | | |
| 7 NE Small-mesh Gillnet | 12 | 8 | | | | |
| 8 MA Small-mesh Gillnet | 1,259 | 793 | | | | |
| 9 NE Large-mesh Gillnet | 141 | 89 | | | | |
| 10 MA Large-mesh Gillnet | 653 | 411 | | | | |
| 11 NE X-Large-mesh Gillnet | 214 | 135 | | | | |
| 12 MA X-Large-mesh Gillnet | 468 | 295 | | | | |
| 13 NE Handline | 72 | 45 | | | | |
| 14 MA Handline | 133 | 84 | | | | |
| 15 NE Lobster Pot | 439 | 276 | | | | |
| 16 MA Lobster Pot | 89 | 56 | | | | |
| 17 NE Longline | 35 | 22 | | | | |
| 18 MA Longline | 76 | 48 | | | | |
| 19 NE Mid-Water Trawl | 316 | 199 | | | | |
| 20 MA Mid-Water Trawl | 35 | 22 | | | | |
| 21 NE Small-mesh Trawl | 2,024 | 1,274 | | | | |
| 22 MA Small-mesh Trawl | 1,229 | 774 | | | | |
| 23 NE Large-mesh Trawl | 730 | 460 | | | | |
| 24 MA Large-mesh Trawl | 481 | 303 | | | | |
| 25 NE Purse Seine | 19 | 12 | | | | |
| 26 MA Purse Seine | 9 | 6 | | | | |
| 27 NE Scallop Dredge OL | 320 | 201 | IF | | 11% | Protected species |
| 28 MA Scallop Dredge OL | 114 | 72 | IF | | | Industry funded |
| 29 NE Scallop Dredge CL | 145 | 91 | IF | | | Industry funded |
| 30 MA Scallop Dredge CL | 108 | 68 | IF | | | Industry funded |
| 31 NE Scallop Dredge OG | 92 | 58 | 9 | -83 | 10% | Fish stock assessment support |
| 32 MA Scallop Dredge OG | 17 | 11 | 18 | 1 | 106% | Fish stock assessment support |
| 33 NE Scallop Dredge CG | 24 | 15 | IF | | | |
| 34 MA Scallop Dredge CG | 21 | 13 | IF | | | |
| 35 MA Scallop Trawl OL | 95 | 60 | 0 | -95 | 0% | |
| 36 MA Scallop Trawl OG | 51 | 32 | 131 | 80 | 257% | Protected species |
| 37 NE Scottish Seine | 12 | 8 | 0 | -12 | 0% | |
| 38 NE Shrimp Trawl | 42 | 26 | 19 | -23 | 45% | Fish stock assessment support |
| 39 MA Shrimp Trawl | 76 | 48 | 0 | -76 | 0% | |
| 40 SAP/Day/US-CAN | | | 3,000 | 3,000 | | Days will be allocated according to call-in DAS procedures |
| 41 Discovery | | | 60 | 60 | | Days are not allocated above but will be conducted under NEFOP schedule |
| Total Number Days | 9,874 | 6,217 | 6,217 | -3,657 | | |
| Projected Cost | \$11,355,100 | \$7,149,500 | \$7,149,500 | \$4,205,600 | | |

(1)

1) at-sea observer coverage levels required to attain the SBRM performance standards in each applicable fishery

Based on 2004 data

OL= Open Area, Limited Access

2008 Consultation/Prioritization Table

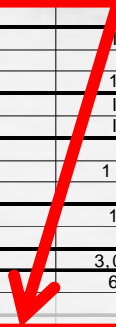
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|----------------------------|---|---|---------------------------|--|--|---|
| 1 NE Clam Dredge | 50 | 31 | 8 | -42 | 16% | Economics data collection program |
| 2 MA Clam Dredge | 84 | 53 | 0 | -84 | 0% | |
| 3 NE Crab Pot | 101 | 64 | 0 | -101 | 0% | |
| 4 MA Crab Pot | 28 | 18 | 16 | -12 | 57% | Economics data collection program |
| 5 NE Fish Pot | 20 | 13 | 3 | -17 | 15% | Economics data collection program |
| 6 MA Fish Pot | 40 | 25 | 3 | -37 | 8% | Economics data collection program |
| 7 NE Small mesh Gillnet | 49 | 9 | 0 | -49 | 0% | Fish stock assessment support |
| 8 MA Small mesh Gillnet | 10 | 0 | 0 | -10 | 0% | |
| 9 NE Large mesh Gillnet | 10 | 0 | 0 | -10 | 0% | |
| 10 MA Large mesh Gillnet | 10 | 0 | 0 | -10 | 0% | |
| 11 NE X-Large mesh Gillnet | 10 | 0 | 0 | -10 | 0% | |
| 12 MA X-Large mesh Gillnet | 10 | 0 | 0 | -10 | 0% | |
| 13 NE Hand Trawl | 10 | 0 | 0 | -10 | 0% | |
| 14 MA Hand Trawl | 10 | 0 | 0 | -10 | 0% | |
| 15 NE Lobster Trawl | 10 | 0 | 0 | -10 | 0% | |
| 16 MA Lobster Trawl | 10 | 0 | 0 | -10 | 0% | |
| 17 NE Longline | 10 | 0 | 0 | -10 | 0% | |
| 18 MA Longline | 10 | 0 | 0 | -10 | 0% | |
| 19 NE Midline | 10 | 0 | 0 | -10 | 0% | |
| 20 MA Midline | 10 | 0 | 0 | -10 | 0% | |
| 21 NE Small mesh Trawl | 10 | 0 | 0 | -10 | 0% | |
| 22 MA Small mesh Trawl | 10 | 0 | 0 | -10 | 0% | |
| 23 NE Large mesh Trawl | 10 | 0 | 0 | -10 | 0% | |
| 24 MA Large mesh Trawl | 10 | 0 | 0 | -10 | 0% | |
| 25 NE Purse Seine | 10 | 0 | 0 | -10 | 0% | |
| 26 MA Purse Seine | 10 | 0 | 0 | -10 | 0% | |
| 27 NE Scallop | 10 | 0 | 0 | -10 | 0% | |
| 28 MA Scallop | 10 | 0 | 0 | -10 | 0% | |
| 29 NE Scallop Dredge CL | 145 | 91 | IF | | | Industry funded |
| 30 MA Scallop Dredge CL | 108 | 68 | IF | | | Industry funded |
| 31 NE Scallop Dredge OG | 92 | 58 | 9 | -83 | 10% | Fish stock assessment support |
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| 33 NE Scallop Dredge CG | 24 | 15 | IF | | | |
| 34 MA Scallop Dredge CG | 21 | 13 | IF | | | |
| 35 MA Scallop Trawl OL | 95 | 60 | 0 | -95 | 0% | |
| 36 MA Scallop Trawl OG | 51 | 32 | 131 | 80 | 257% | Protected species |
| 37 NE Scottish Seine | 12 | 8 | 0 | -12 | 0% | |
| 38 NE Shrimp Trawl | 42 | 26 | 19 | -23 | 45% | Fish stock assessment support |
| 39 MA Shrimp Trawl | 76 | 48 | 0 | -76 | 0% | |
| 40 SAP/Bycatch/US-CAN | | | 3,000 | 3,000 | | Days will be allocated according to call-in DAS procedures |
| 41 Discovery | | | 60 | 60 | | Days are not allocated above but will be conducted under NEFOP schedule |
| Total Number Days | 9,874 | 6,217 | 6,217 | -3,657 | | |
| Projected Cost | \$11,355,100 | \$7,149,500 | \$7,149,500 | \$4,205,600 | | |

SBRM requires 9,874 sea days (\$11.4 million)

NMFS has funding for 6,217 sea days (\$7.1 million)

Shortfall of 3,657 sea days (\$4.2 million)



| | | | | |
|-------------------|--------------|-------------|-------------|-------------|
| Total Number Days | 9,874 | 6,217 | 6,217 | -3,657 |
| Projected Cost | \$11,355,100 | \$7,149,500 | \$7,149,500 | \$4,205,600 |

2008 Consultation/Prioritization

Table 1. Standardized Bycatch Reporting Methodology Prioritization Information, Calendar Year 2008

| Fishing Mode | Omnibus Amendment Preferred Alternative: 95% of Discards & 98% of Mortality | Available Coverage with shortfalls proportionally applied | Prioritized 2008 Coverage | Difference from Preferred Alternative | Percentage of Total |
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| 2 MA Clam Dredge | 84 | 53 | 0 | -84 | |
| 3 NE Crab Pot | 101 | 64 | 0 | -101 | |
| 4 MA Crab Pot | 28 | 18 | 16 | -12 | |
| 5 NE Fish Pot | 20 | 13 | 3 | -17 | |
| 6 MA Fish Pot | 40 | 25 | 3 | -37 | |
| 7 NE Small-mesh Gillnet | 12 | 8 | 3 | -9 | |
| 8 MA Small-mesh Gillnet | 1,259 | 793 | 0 | -1,259 | |
| 9 NE Large-mesh Gillnet | 141 | 89 | 159 | 18 | |
| 10 MA Large-mesh Gillnet | 653 | 411 | 4 | -649 | |
| 11 NE X-Large-mesh Gillnet | 214 | 135 | 81 | -133 | |
| 12 MA X-Large-mesh Gillnet | 468 | 295 | 52 | -416 | |
| 13 NE Handline | 72 | 45 | 0 | -72 | |
| 14 MA Handline | 133 | 84 | 0 | -133 | |
| 15 NE Lobster Pot | 439 | 276 | 0 | -439 | |
| 16 MA Lobster Pot | 89 | 56 | 0 | -89 | |
| 17 NE Longline | 35 | 22 | 25 | -10 | |
| 18 MA Longline | 76 | 48 | 8 | -68 | |
| 19 NE Mid-Water Trawl | 316 | 199 | 111 | 205 | |
| 20 MA Mid-Water Trawl | 35 | 22 | 103 | 68 | |
| 21 NE Small-mesh Trawl | 2,024 | 1,274 | 175 | -1,849 | |
| 22 MA Small-mesh Trawl | 1,229 | 774 | 377 | -852 | |
| 23 NE Large-mesh Trawl | 730 | 460 | 1,494 | 764 | |
| 24 MA Large-mesh Trawl | 481 | 303 | 254 | 227 | |
| 25 NE Purse Seine | 19 | 12 | 94 | 75 | |
| 26 MA Purse Seine | 9 | 6 | 10 | 1 | |
| 27 NE Scallop Dredge OL | 320 | 201 | IF | | |
| 28 MA Scallop Dredge OL | 114 | 72 | IF | | |
| 29 NE Scallop Dredge CL | 145 | 91 | IF | | |
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| 32 MA Scallop Dredge OG | 17 | 11 | 18 | 1 | |
| 33 NE Scallop Dredge CG | 24 | 15 | IF | | |
| 34 MA Scallop Dredge CG | 21 | 13 | IF | | |
| 35 MA Scallop Trawl OL | 95 | 60 | 0 | -95 | |
| 36 MA Scallop Trawl OG | 51 | 32 | 131 | 80 | |
| 37 NE Cottish Seine | 12 | 8 | 0 | -12 | |
| 38 NE Shrimp Trawl | 42 | 26 | 19 | -23 | |
| 39 MA Shrimp Trawl | 76 | 48 | 0 | -76 | |
| 40 SAP/Day/US-CAN | | | 3,000 | 3,000 | |
| 41 Discovery | | | 60 | 60 | |
| Total Number Days | 9,874 | 6,217 | 6,217 | -3,657 | |
| Projected Cost | \$11,355,100 | \$7,143,800 | \$7,143,800 | \$4,205,600 | |

(2) (3)

2) The coverage levels that would be available if the resource shortfall were allocated proportionately across all applicable fisheries;

3) The coverage levels that incorporate the recommended prioritization;

Based on 2006/2007 data

OL= Open Area, Limited Access

2008 Consultation/Prioritization Table Summary

4) The rationale for the recommended prioritization. e.g.,

- Optimization
- Industry funded
- Call-In program

(4)

| 2008 Percentage of Preferred Alternative | Justification |
|--|---|
| 16% | Economics data collection program |
| 0% | |
| 0% | |
| 57% | Economics data collection program |
| 15% | Economics data collection program |
| 8% | Economics data collection program |
| 25% | Fish stock assessment optimization |
| 0% | (420 days marine mammal bycatch not included in this SB RM summary) |
| 113% | Fish stock assessment optimization (276 days marine mammal bycatch not included) |
| 1% | Fish stock assessment optimization |
| 38% | Fish stock assessment optimization |
| 11% | Fish stock assessment optimization |
| 0% | |
| 0% | |
| 0% | |
| 71% | Fish stock assessment optimization |
| 11% | Economics data collection earmark |
| 35% | Atlantic herring bycatch monitoring (95), economics data (16) |
| 294% | Atlantic herring bycatch monitoring (95), economics data (8) |
| 9% | Fish stock assessment optimization (171), economics data (4) |
| 31% | Fish stock assessment optimization (275), protected species mixed trawl (98), economics data (16) |
| 205% | Fish stock assessment optimization |
| 53% | Fish stock assessment optimization (156), protected species mixed trawl (98) |
| 195% | Atlantic herring bycatch monitoring |
| 111% | Protected species |
| | Industry funded |
| | Industry funded |
| | Industry funded |
| 10% | Fish stock assessment support |
| 106% | Fish stock assessment support |
| | |
| | |
| 0% | |
| 257% | Protected species |
| 0% | |
| 45% | Fish stock assessment support |
| 0% | |
| | Days will be allocated according to call-in DAS procedures |
| | Days are not allocated above but will be conducted under NEFOP schedule |

| | | | | | | | |
|-------------------|----------------------|--------------|-------------|-------------|-------------|------|---|
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| 23 | NE Large-mesh Trawl | 730 | 460 | 1,494 | 764 | 205% | Fish stock assessment optimization |
| 24 | MA Large-mesh Trawl | 481 | 303 | 254 | -227 | 53% | Fish stock assessment optimization (156), protected species mixed trawl (98) |
| 25 | NE Purse Seine | 19 | 12 | 94 | 75 | 195% | Atlantic herring bycatch monitoring |
| 26 | MA Purse Seine | 9 | 6 | 10 | 1 | 111% | Protected species |
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| Total Number Days | | 9,874 | 6,217 | 6,217 | -3,657 | | |
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Sea Day Funding Source Constraints

| | | |
|---------------------------|-------------------------|---|
| Reducing Bycatch | Temporary 1% | 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 by-catch. <i>MMPA is not part of SBRM.</i> |
| New England Groundfish | Permanent 91% | 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 8% | Funding source to support observation of fish and sea-turtle by-catch in Mid-Atlantic fisheries (coverage split 50/50 between fish and turtles). |

Management Constraints

- Monitoring of Total Allowable Catch (3,000 days)
 - US-Canada
 - Special Access Programs
 - B-Day coverage compliance
 - Not based on statistical precision targets. Instead uses seeks sufficient coverage rate to reduce risk of TAC overages.
 - TAC monitoring has taken precedence.
 - Remaining sea days used for other programs
- ### Total Discards Estimation
- Optimization model for NE groundfish, Monkfish, Fluke-Scup- Black Sea Bass
 - Herring (200-300 days)
 - Open Area General Category Scallop Coverage

Background on Sea Day Allocation/Optimization

NEFSC has been using statistical algorithms to allocate a portion of the total sea days since 2003

These approaches are described in

NEFSC Bycatch Estimation Methodology: Allocation, Precision, and Accuracy

by P.J. Rago, S.E. Wigley and M.J. Fogarty

Northeast Fisheries Science Center Reference Document 05-09

Allocating observer Sea Days to Bottom Trawl and Gillnet Fisheries in the Northeast and Mid-Atlantic Regions to Monitor and Estimate Incidental Bycatch of Marine Mammals

by M. Rossman

Northeast Fisheries Science Center Reference Document 07-19

Background on Sea Day Allocation/Optimization

- Covers 3 FMPs
Groundfish, Monkfish, Fluke-Scup-Black Sea Bass
- Considers overlapping coverage of trips
- Total available sea days are those days remaining after management constraints are met
- Minimizes the variance of the discard estimates subject to a given number of sea days
- Sea days for the Mid-Atlantic (M-A) and New England (NE) regions are optimized separately and the resulting allocated sea days combined.

Background on Sea Day Allocation/Optimization

- For fisheries which do not enter the optimization process (e.g. scallop dredge fishery; herring fishery, etc), sea days are allocated proportional to fishing effort (number of trips or number of days fished).



Background on Sea Day Allocation/Optimization

The optimization algorithm current handles 3 species groups, 3 gear types, 6 regions, and 2 trip length groups

3 Species groups:

New England Groundfish
(12 multi-species groundfish)
Fluke, Scup and Black Sea Bass
Monkfish

4 Gear types:

Otter trawl (with four mesh groups)
Gillnet (with four mesh groups)
Longline

6 Regions:

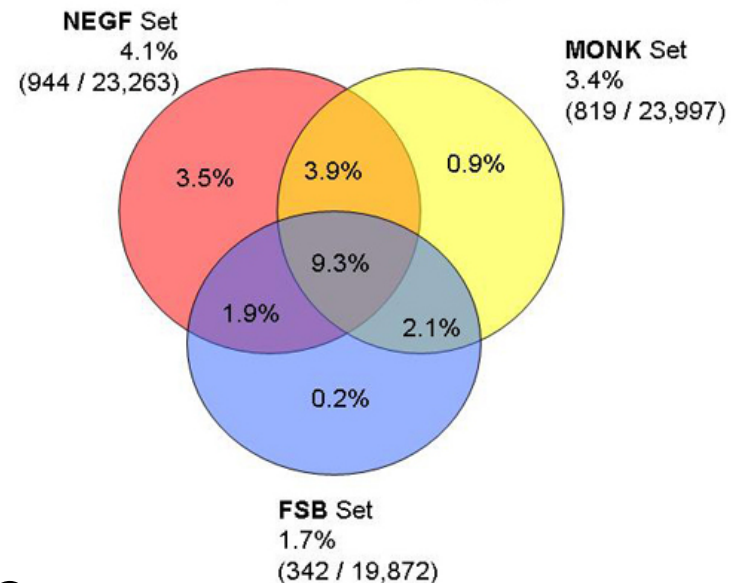
ME-NH, N_MA, SNE, NY-NJ, DE-MD, VA-NC

2 Trip Length groups: 1-day, 2+days

Taken from Rago et al. 2005

SBRM Omnibus Amendment Appendix A

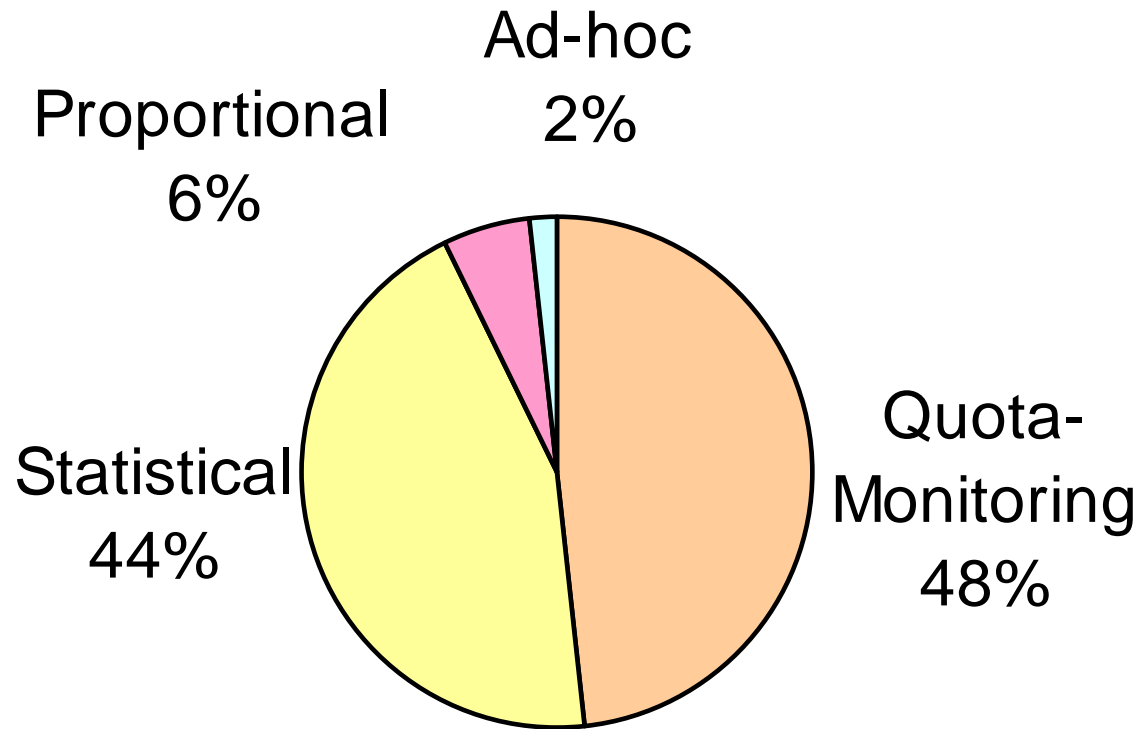
Sampling Fraction: 2003/2004 Observer trips/VTR trips
for otter trawl, gillnet and longline trips
(43,703 unique trips)



Total Unique Trips: 2.5% (1,103 / 43,703)
Total Trips with Overlap: 3.8% (817 / 21,429)
Sum of Trip Sets: 3.1% (2,105 / 67,132)

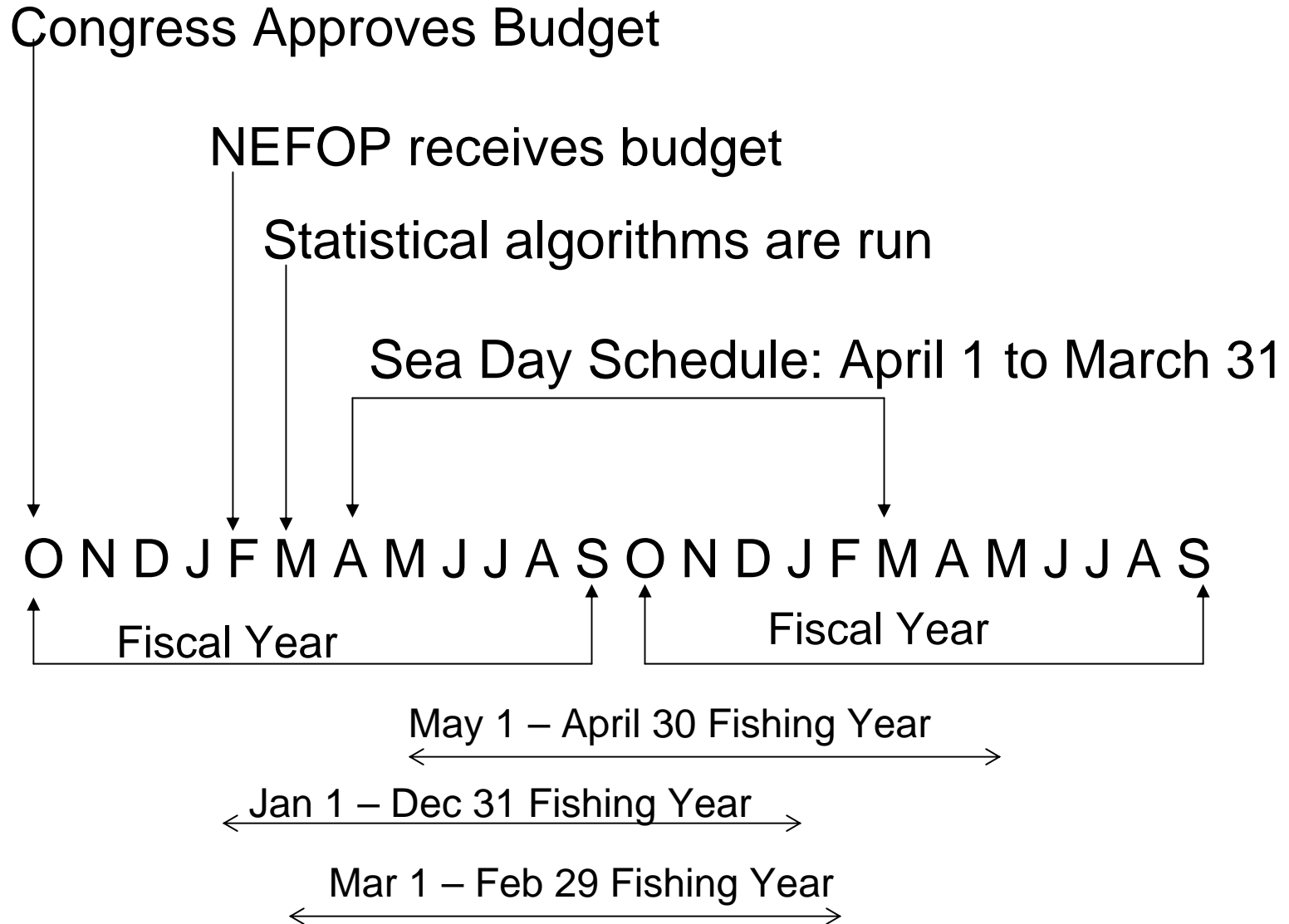
Background on Sea Day Allocation/Optimization

6,217 sea days assigned



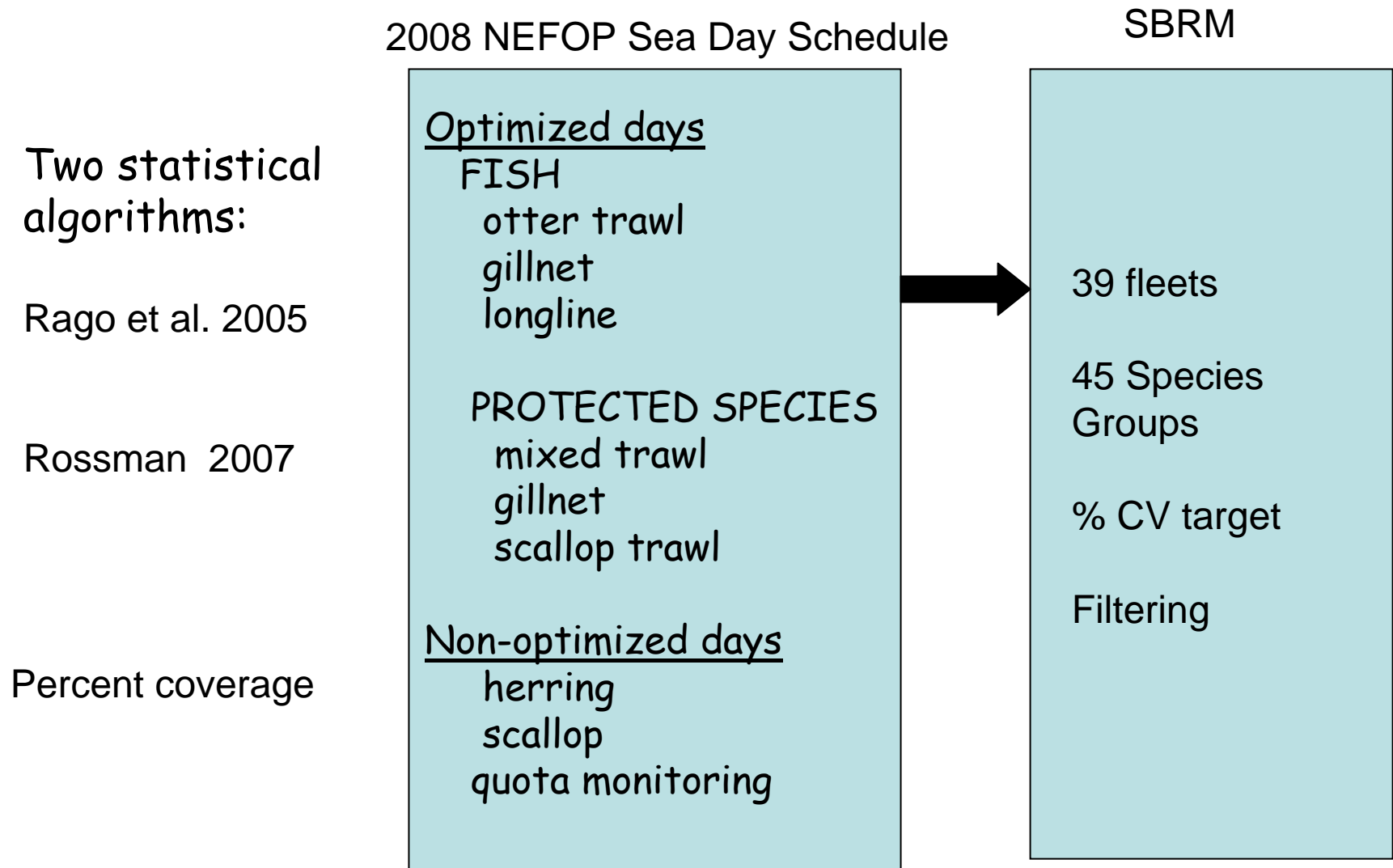
696 days for gillnet coverage for marine mammals only
(not included in 6,217 day total)

Funding Availability and Timing



Background on Sea Day Allocation/Optimization

2008 is a Transition Year



Summary

- *2008 is a transition year*
- Expand optimization tool described in Rago et al. 2005
 - to account for all objectives: fish, protected species, quota monitoring and non-quota monitoring;
 - to account for more fleets and species groups;
- Funding constraints limit use of funds for other species and areas
- Fund availability, Timing and Logistics of observer staffing requires a sea day observer year from April 1 to March 31

2008 Consultation/Prioritization Table

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Possible Questions

Why are there differences between SBRM sea days and 2008 sea days ?

Differences are due to methods and data used

Methods

SBRM used filter method

2008 used statistical algorithms and proportional coverage along with funding and management constraints

Data

SBRM used 2004 data

2008 used 2006/2007 data

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.

How much Industry Funded coverage has there been?

Industry funded observer coverage of 1,890 sea days (300 trips) occurred for the following permit categories and areas during Fishing Year 2007.

Open Area

Limited Access

Nantucket Lightship Area

Limited Access

General Category

Closed Area I

Limited Access

General Category

Hudson Canyon

Limited Access

Elephant Trunk

Limited Access

General Category

Can the 3,000 SAP sea days be optimized?

Yes; however, if substantial changes in the sea day schedule occur, then a transition period will be needed to re-align observer staff.

Clarification on the spatial or gear-related constraints associated with this funding would be needed (i.e. funding just for NE coverage or can days be allocated to both MA and NE? And used for coverage on any gears?)

Which fleets used statistical algorithms?

| | Fishing Mode | Omnibus Amendment Preferred Alternative: 95% of Discards & 98% of Mortality | Prioritized 2008 Coverage | Method Used |
|----|-------------------------|--|---------------------------|--------------------------------|
| 1 | NE Clam Dredge | 50 | 8 | ad-hoc |
| 2 | MA Clam Dredge | 84 | 0 | |
| 3 | NE Crab Pot | 101 | 0 | |
| 4 | MA Crab Pot | 28 | 16 | ad-hoc |
| 5 | NE Fish Pot | 20 | 3 | ad-hoc |
| 6 | MA Fish Pot | 40 | 3 | ad-hoc |
| 7 | NE Small-mesh Gillnet | 12 | 3 | statistical method |
| 8 | MA Small-mesh Gillnet | 1,259 | 0 | |
| 9 | NE Large-mesh Gillnet | 141 | 159 | statistical method |
| 10 | MA Large-mesh Gillnet | 653 | 4 | statistical method |
| 11 | NE X-Large-mesh Gillnet | 214 | 81 | statistical method |
| 12 | MA X-Large-mesh Gillnet | 468 | 52 | statistical method |
| 13 | NE Handline | 72 | 0 | |
| 14 | MA Handline | 133 | 0 | |
| 15 | NE Lobster Pot | 439 | 0 | |
| 16 | MA Lobster Pot | 89 | 0 | |
| 17 | NE Longline | 35 | 25 | statistical method |
| 18 | MA Longline | 76 | 8 | ad-hoc |
| 19 | NE Mid-Water Trawl | 316 | 111 | proportional coverage & ad-hoc |
| 20 | MA Mid-Water Trawl | 35 | 103 | proportional coverage & ad-hoc |
| 21 | NE Small-mesh Trawl | 2,024 | 175 | statistical method |
| 22 | MA Small-mesh Trawl | 1,229 | 377 | statistical method |
| 23 | NE Large-mesh Trawl | 730 | 1,494 | statistical method |
| 24 | MA Large-mesh Trawl | 481 | 254 | statistical method |
| 25 | NE Purse Seine | 19 | 94 | proportional coverage & ad-hoc |
| 26 | MA Purse Seine | 9 | 10 | statistical method |
| 27 | NE Scallop Dredge OL | 320 | IF | |
| 28 | MA Scallop Dredge OL | 114 | IF | |
| 29 | NE Scallop Dredge CL | 145 | IF | |
| 30 | MA Scallop Dredge CL | 108 | IF | |
| 31 | NE Scallop Dredge OG | 92 | 9 | proportional coverage & ad-hoc |
| 32 | MA Scallop Dredge OG | 17 | 18 | proportional coverage & ad-hoc |
| 33 | NE Scallop Dredge CG | 24 | IF | |
| 34 | MA Scallop Dredge CG | 21 | IF | |
| 35 | MA Scallop Trawl OL | 95 | 0 | |
| 36 | MA Scallop Trawl OG | 51 | 131 | statistical method |
| 37 | NE Scottish Seine | 12 | 0 | |
| 38 | NE Shrimp Trawl | 42 | 19 | proportional coverage & ad-hoc |
| 39 | MA Shrimp Trawl | 76 | 0 | |
| 40 | SAP/B day/US-CAN | | 3,000 | |
| 41 | Discovery | | 60 | ad-hoc |

SBRM Evaluation Report
and
Annual Report Slides

SBRM Evaluation Report (every 3 years)

A report assessing the effectiveness of the SBRMs.

- 1) A review of the recent levels of observer coverage in each applicable fishery;
- 2) A review of recent observed encounters with each species in each fishery, and a summary of observed discards by weight;
- 3) A review of the coefficient of variation (CV) of the discard information collected for each fishery;
- 4) An estimate of the total discards associated with each fishery;
- 5) An evaluation of the effectiveness of the SBRM at meeting the performance standard for each fishery;
- 6) A description of the methods used to calculate the reported CVs and to determine observer coverage levels, if those methods are different from those described and evaluated in the SBRM amendments;
- 7) An updated assessment of potential sources of bias in the sampling program, and analyses of accuracy; and
- 8) An evaluation of the implications for management of the discard information collected under the SBRM, for any cases in which the evaluation performed for item 5 indicates that the performance standard is not met.

SBRM Annual Discard Report based on NEFOP

1. Number of observer sea days schedules for each fishery, by area and gear type, in each quarter
2. The percent total trips observed, by gear type, in each quarter;
3. The distribution of sea sampling trips by gear type and statistical area in each fishery;
4. The observed catch and discards of each species, by gear type and fishery, in each quarter;
5. The observed catch and discards of each species, by gear type and fishery, in each statistical area.

Note: gear type is included in the fishery/fleet definition