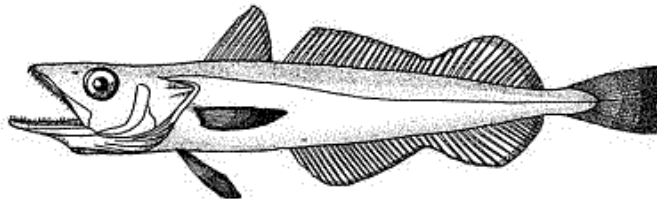
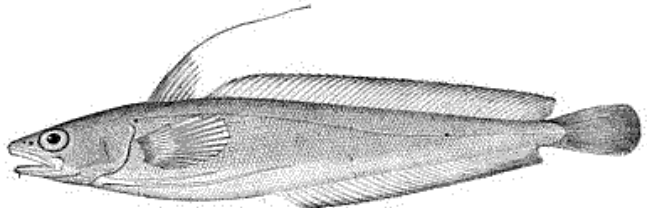
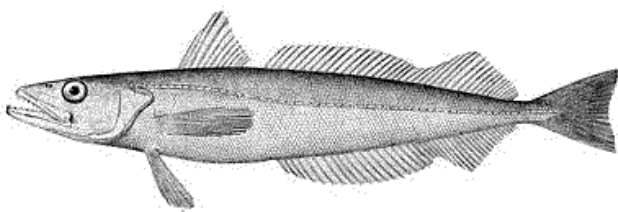


**FRAMEWORK ADJUSTMENT 38**  
**to the**  
**NORTHEAST MULTISPECIES FISHERY MANAGEMENT PLAN**  
**(for Whiting, Red Hake, & Offshore Hake)**

**Incorporating an  
Environmental Assessment and  
Regulatory Impact Review**

**To Establish an Exempted Grate Raised Footrope Trawl Fishery  
in the Inshore Gulf of Maine**



**Prepared by the New England Fishery Management Council**

in consultation with

Maine Department of Marine Resources  
National Marine Fisheries Service  
Mid-Atlantic Fishery Management Council

Initial Framework Meeting:  
Final Framework Meeting:  
Submitted by NEFMC:

September 10-12, 2002  
January 28-30, 2003  
February 21, 2003



## EXECUTIVE SUMMARY

The New England Fishery Management Council is seeking to modify existing multispecies regulations specified in 50 CFR §648.80(a) to allow for a seasonal whiting exempted grate raised footrope trawl fishery in the inshore Gulf of Maine (GOM). This action will allow for a transition from a successful experimental fishery for whiting focused on minimizing regulated species bycatch to a more permanent fishery that provides a seasonal small mesh fishing opportunity for vessels fishing in the GOM. The exempted grate raised footrope trawl fishery proposed in this framework adjustment is the product of eight years of experimental work conducted by the Maine Department of Marine Resources (ME DMR) in cooperation with the fishing industry. The gear itself evolved throughout the course of the experimental fisheries, as different mesh configurations and grate bar spacing were tested. The gear proposed for the exempted fishery in this framework adjustment represents the configuration that encountered the most success minimizing regulated species bycatch when vessels used it to target whiting in the area proposed for exemption.

The proposed season for the grate raised footrope trawl fishery is July 1 – November 30. The proposed area is an inshore area in the GOM extending to the Loran 44500 line and northward along the coast of Maine (Option 2A from the Draft Framework 38 document). This area most closely represents the historical whiting fishery and the area utilized by the fishermen who have participated in the experimental whiting grate fisheries over the past six years.

Several gear specifications are proposed for this fishery, including net specifications for the raised footrope trawl that are consistent with those in the Cape Cod Bay whiting fishery, a requirement to use a sweepless trawl, and a requirement to use a Nordmore-style grate with a maximum bar spacing of 50-mm. A minimum codend mesh requirement of 2.5-inches (square or diamond mesh) is also proposed. Vessels would be allowed to use net strengtheners in this fishery, provided that they are consistent with the existing net strengthener provisions for 2.5-inch mesh. A maximum whiting possession limit of 7,500 pounds is proposed for this fishery, along with additional incidental catch restrictions to ensure that the net is fished properly and remains off the ocean bottom. Requirements for fishery review and monitoring are included in this framework adjustment as well.

During the development of this framework adjustment, the Council considered several alternatives for the exempted fishery season, area, and gear specifications. One alternative considered for the season was to allow this fishery to be prosecuted on a year-round basis. The Council did not select this alternative because the experimental grate raised footrope trawl fisheries did not occur throughout the entire year, so no sea sampling data are available to support the exemption during the winter and spring months. The Council also considered allowing the fishery to occur during the month of June. However, no sea sampling data are available from the experimental fisheries during June. As a result, the potential level of risk to the groundfish resource by allowing this fishery to occur in June was deemed to be unacceptable. Similarly, sea sampling data are not available for some of the offshore areas that were proposed for this fishery. As a result, the Council selected an area that was adequately sampled during the experimental fisheries as well as an adjacent area that is supported by the Groundfish Plan

Development Team (PDT) due to similar characteristics (bottom topography, current flow, species composition, etc.). The Council considered several gear specifications for the fishery, including options for establishing the minimum mesh size and allowing net strengtheners in this fishery. The Council ultimately selected gear specifications that are most consistent with specifications in other small mesh multispecies fisheries throughout the region.

Establishing a seasonal grate raised footrope trawl fishery in the inshore GOM is not expected to significantly impact fishing mortality or rebuilding schedules for any small mesh multispecies or large mesh regulated groundfish stocks. The 2002 Stock Assessment and Fishery Evaluation (SAFE) Report for small mesh multispecies shows that the northern stock of whiting is fully recovered, with estimated biomass at 175% of the proxy  $B_{MSY}$ . Fishing mortality (F) in the northern area is very low, and the increase in F that would be created by the grate fishery is projected to be very low as well. The Groundfish PDT reviewed the experimental fishery data in the context of juvenile groundfish bycatch and concluded that the impacts of this fishery on juvenile groundfish mortality are not likely to be significant.

The economic effects of the proposed exempted grate raised footrope trawl fishery are not expected to be profound, but will be important to the participating vessels, especially those along the coast of Maine and in smaller ports adjacent to the GOM. Analyses suggest that the initial fishery using the proposed grate raised footrope trawl would not be expected to expand quickly, but will probably allow the bait fishing activities to occur and will probably produce a food fishery that will be worth about \$1 million if levels of activity similar to those in 1996 occur. Overall, and certainly in comparison to the no action alternative, the social impacts of the proposed action will be positive and will result from increased fishing opportunities, economic returns from the fishery, flexibility for the affected fishing fleet, and increased ability to adapt to regulations in other fisheries.

The proposed action is not expected to change the determination in Amendment 12 that the small mesh multispecies management program would have negligible impacts on protected species, including those that are threatened and endangered. This determination is based on the lack of evidence of protected species interactions with mobile fishing gear in the multispecies fishery in the Northeast. The proposed action has effects on essential fish habitat (EFH) because it involves fishing activity, however the impacts have been determined to be less than substantial. Furthermore, this framework action does not increase any of the potentially adverse effects on EFH as established in the baseline condition under Amendment 12 and Framework 35.

The data and analyses presented in this framework document indicate that the grate, in combination with the raised footrope trawl, significantly reduces the bycatch of most regulated groundfish species while not compromising the catch of target small mesh species, an accomplishment for which the Council commends the fishing industry and the Maine Department of Marine Resources. The development of this fishery demonstrates the creativity and innovation that will keep the small mesh fishing fleet in the GOM viable now and in the future. The Council wants to provide these vessels with an opportunity to catch whiting in the inshore GOM during the summer and fall through this framework adjustment.

## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION AND BACKGROUND.....</b>	<b>1</b>
1.1	Background .....	1
<b>2.0</b>	<b>PURPOSE.....</b>	<b>1</b>
2.1	Need for Adjustment .....	1
2.2	Objectives.....	2
<b>3.0</b>	<b>PROPOSED ACTION .....</b>	<b>2</b>
3.1	Grate Raised Footrope Trawl Fishery Season .....	3
3.2	Grate Raised Footrope Trawl Fishery Area – Extending to the Loran 44500 Line . .....	5
3.3	Grate Raised Footrope Trawl Fishery Gear Specifications .....	8
3.3.1	Nordmore-Style Grate.....	8
3.3.2	Net Specifications .....	8
3.3.3	Minimum Mesh Size .....	9
3.4	Allowable Landings and Incidental Catch Restrictions .....	10
3.4.1	Whiting/Offshore Hake Possession Limit .....	10
3.4.2	Additional Incidental Catch Restrictions .....	10
3.5	Fishery Review and Monitoring .....	11
<b>4.0</b>	<b>ALTERNATIVES TO THE PROPOSED ACTION .....</b>	<b>12</b>
<b>5.0</b>	<b>AFFECTED ENVIRONMENT .....</b>	<b>14</b>
<b>6.0</b>	<b>ANALYSIS OF IMPACTS .....</b>	<b>16</b>
6.1	Biological Impacts .....	16
6.1.1	Experimental Fishery Data.....	16
6.1.2	Impacts on the Northern Stocks of Silver Hake and Red Hake .....	27
6.1.3	Potential for Increased Effort in the Grate Raised Footrope Trawl Fishery .....	28
6.1.4	Impacts on Other Species.....	31
6.1.5	Impacts on Endangered and Threatened Species and Other Marine Mammals ...	33
6.2	Impacts on Habitat, Including EFH Assessment .....	37
6.2.1	Grate Raised Footrope Trawl Fishery Season .....	38
6.2.2	Grate Raised Footrope Trawl Fishery Area .....	38
6.2.3	Grate Raised Footrope Trawl Gear Specifications .....	41
6.2.4	Allowable Landings and Incidental Catch Restrictions .....	41
6.2.5	Fishery Review and Monitoring .....	41
6.2.6	Alternatives to the Proposed Action .....	41

6.2.7	EFH Assessment .....	41
<b>6.3</b>	<b>Cumulative Effects .....</b>	<b>42</b>
<b>6.4</b>	<b>Economic Impacts .....</b>	<b>45</b>
<b>6.5</b>	<b>Social Impacts.....</b>	<b>47</b>
6.5.1	Background .....	47
6.5.2	Social Impacts of Exempted Grate Raised Footrope Trawl Fishery.....	47
<b>7.0</b>	<b>RELATIONSHIP TO APPLICABLE LAW .....</b>	<b>50</b>
<b>7.1</b>	<b>Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) .....</b>	<b>50</b>
7.1.1	Consistency with the National Standards .....	50
7.1.2	Other Required Provisions of the MSFCMA.....	53
<b>7.2</b>	<b>National Environmental Policy Act (NEPA) .....</b>	<b>58</b>
7.2.1	Environmental Assessment .....	58
7.2.2	Finding of No Significant Impact (FONSI) .....	59
7.2.3	List of Agencies and Persons Consulted.....	62
7.2.4	Opportunity for Public Comment .....	62
<b>7.3</b>	<b>Regulatory Flexibility Act (RFA) .....</b>	<b>64</b>
7.3.1	Executive Order 12866 .....	64
7.3.2	Initial Regulatory Flexibility Act Analysis (IRFAA) .....	66
<b>7.4</b>	<b>Endangered Species Act (ESA) .....</b>	<b>68</b>
<b>7.5</b>	<b>Marine Mammal Protection Act (MMPA) .....</b>	<b>68</b>
<b>7.6</b>	<b>Coastal Zone Management Act (CZMA).....</b>	<b>68</b>
<b>7.7</b>	<b>Paperwork Reduction Act (PRA) .....</b>	<b>68</b>
<b>8.0</b>	<b>LIST OF ACRONYMS .....</b>	<b>68</b>
<b>9.0</b>	<b>GLOSSARY.....</b>	<b>71</b>
<b>10.0</b>	<b>REFERENCES .....</b>	<b>73</b>

## LIST OF TABLES

Table 1	1996 Monthly Landings of Whiting in Maine from VTR Records .....	4
Table 2	Total Catch, Regulated Species Catch, and Percent Regulated Species Catch from Sea Sampled Whiting Trips 1995 - 2000 to Demonstrate Seasonal Distribution of Catch.....	4
Table 3	Coordinates of Area Proposed for the Exempted Grate Raised Footrope Trawl Fishery.	5
Table 4	Principal Port Profile for Vessels Participating in the Experimental Whiting Separator Trawl Fishery, 1995 – 1997 .....	14
Table 5	Other Permits Held by Vessels Participating in the Whiting Experimental Separator Trawl (Grate) Fishery, 1995 – 1997 .....	15
Table 6	Tows with Sweepless Trawl, 50 mm Grate and 2.5" Diamond Mesh Cod End, October, November, 2001 .....	17
Table 7	Catch in Weight per Tow by Species for 22 Tows with Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V Tenacious, Fall 2002) ..	20
Table 8	Catch in Weight per Tow by Species for 39 Tows with a Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V North Star, Fall 2002) .....	22
Table 9	Catch in Weight per Trip by Species for Six Trips with a Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V Tenacious, Fall 2002) .....	25
Table 10	Catch in Weight per Trip by Species for Ten Trips with a Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V North Star, Fall 2002) .....	26
Table 11	Catch and Bycatch Scenarios Based on Catch/Hour in 2001 ME Commercial Trials and Hours Fished/Day for Both Transfer at Sea and Landed Categories in the 1998 Experimental Grate Fishery .....	30
Table 12	Otter Trawl Gear Activity Levels (data from VTR 1995 – 2001) .....	40
Table 13	Opportunity for Public Comment on Frameworks 37 and 38 .....	63

## LIST OF FIGURES

Figure 1 Area Proposed for Exempted Grate Raised Footrope Trawl Fishery (Option 2A) .....	6
Figure 2 Tow Locations During Various Experimental Fisheries, 1999-2002.....	7
Figure 3 Bottom Sedimentation for Areas Potentially Impacted by Proposed Grate Fishery Area (data from Poppe <i>et al.</i> 1989).....	39
Figure 4 Otter Trawl Activity in Proposed Grate Fishery Area (data from VTR 1995 – 2001) .	40
Figure 5 Landings and Revenues from Silver Hake (Whiting) in the State of Maine .....	46



## **1.0 INTRODUCTION AND BACKGROUND**

This framework adjustment has been developed to establish an exempted grate raised footrope trawl fishery in the inshore Gulf of Maine (GOM) consistent with regulations for both large mesh multispecies and small mesh multispecies. This exemption is based on data collected through a series of experimental fisheries conducted by the Maine Department of Marine Resources (ME DMR) in cooperation with the fishing industry.

### **1.1 BACKGROUND**

The exempted grate raised footrope trawl fishery proposed in this framework adjustment is the product of eight years of experimental work conducted by ME DMR in cooperation with the fishing industry. The gear itself evolved throughout the course of the experimental fisheries, as different mesh configurations and grate bar spacing were tested. The gear proposed for the exempted fishery in this framework adjustment represents the configuration that encountered the most success minimizing regulated species bycatch when vessels used it to target whiting in the area proposed for exemption.

A complete summary of the evolution of this grate raised footrope trawl fishery, including data collected during the various experimental fisheries, is presented in **Appendix I** of this framework document and should be referenced for more background information.

## **2.0 PURPOSE**

The purpose of this framework adjustment is to modify existing multispecies regulations to establish a seasonal whiting grate raised footrope trawl fishery in the inshore GOM. This action will allow for a transition from an experimental fishery for whiting focused on minimizing regulated species bycatch to a more permanent fishery that provides a seasonal small mesh fishing opportunity for vessels fishing in the inshore GOM.

### **2.1 NEED FOR ADJUSTMENT**

The need for this adjustment stems from multispecies regulations that require small mesh fisheries in the GOM Regulated Mesh Area to be exempted from large-mesh groundfish regulations through a certification process. The certification process evaluates the bycatch of regulated groundfish species in the fishery proposed for exemption and can occur in one of two ways:

§648.80(a)(8)(i)(A). An exemption may be added in an existing fishery for which there are sufficient data or information to ascertain the amount of regulated species bycatch, if the Regional Administrator, after consultation with the NEFMC, determines that the percentage of regulated species caught as bycatch is, or can be reduced to, less than 5 percent, by weight, of total catch and that such exemption will not jeopardize fishing mortality objectives. In determining whether exempting a fishery may jeopardize meeting fishing mortality objectives, the Regional Administrator may take

into consideration various factors including, but not limited to, juvenile mortality. A fishery can be defined, restricted, or allowed by area, gear, season, or other means determined to be appropriate to reduce bycatch of regulated species....

- §648.80(a)(8)(ii). The NEFMC may recommend to the Regional Administrator, through the framework procedure specified in §648.90(b), additions or deletions to exemptions for fisheries, either existing or proposed, for which there may be insufficient data or information for the Regional Administrator to determine, without public comment, percentage catch of regulated species or small-mesh multispecies.

The Council is applying the second approach described above to establish this exempted fishery through this framework adjustment.

## **2.2 OBJECTIVES**

The primary objective of this framework adjustment is to provide the industry with a viable small mesh multispecies fishing opportunity in the inshore GOM consistent with the conservation objectives for both regulated multispecies and small mesh multispecies. This objective will be achieved by establishing a small mesh fishery using a combination of a Nordmore-style grate with a sweepless raised footrope trawl and specifications that address the following:

- minimizing regulated species bycatch;
- ensuring consistency with small mesh multispecies regulations implemented through Amendment 12;
- encouraging proper gear design and use; and
- prohibiting the catch of bottom-dwelling species that the gear is designed to avoid (monkfish, lobsters, for example).

## **3.0 PROPOSED ACTION**

The proposed action, described in the following subsections, relates specifically to establishing an exempted grate raised footrope trawl fishery in the inshore GOM. ME DMR has been developing this fishery through the federal experimental fisheries process in cooperation with the fishing industry, testing various configurations of small mesh gear to reduce the bycatch of regulated groundfish to less than five percent.

In addition to the management measures specified in the subsections below, participants in this fishery will be subject to all other restrictions for small mesh multispecies, including permitting and reporting requirements, net strengthener specifications, transfer at sea provisions for small mesh multispecies, and all other applicable management measures implemented through Amendment 12, Framework 32, Framework 35, and Framework 37 to the Northeast Multispecies Fishery Management Plan (FMP).

### 3.1 GRATE RAISED FOOTROPE TRAWL FISHERY SEASON

The grate fishery season is proposed to begin on **July 1** and end on **November 30** of each year.

**Discussion:** This period encompasses the traditional seasonal presence of whiting along the Maine coast in the GOM and also encompasses the period of documented catch and bycatch during research trials and experimental small mesh fisheries permitted by NMFS between 1996 and 2002. The Groundfish PDT expressed support for a season from July 1 – November 30 based on catch rates documented in Table 2 as well as experimental data from 2001 and 2002, which were reviewed by the PDT in detail.

During the development of this framework adjustment, the Council considered establishing a season for this fishery from June 1 – November 30 but ultimately decided to eliminate the month of June from consideration. Data presented in Table 1 and Table 2 were evaluated by the Groundfish PDT and the Council when determining the season for this fishery. The reasons why the Council eliminated the month of June from consideration are discussed in more detail in Section 4.0 of this document (p. 12).

The general seasonal nature of the fishery is seen in the landings by month for 1996, the most recent year with any significant landings (Table 1). These data show that the coastal whiting fishery started in July and ended in November, with the heaviest landings occurring in August, September and October. The sea sampled trips in 1996 show reasonably even total catch per trip for July through November (Table 2). The catch of regulated species was considerably lower during August and September than during July, October and November, but was low relative to total catch during all months. The percent catch of regulated species remained under 5% of total catch for all months, but was higher in October and November than it was during July, August and September (Table 2). The total catch for sea sampled trips by month for 1995, 1998, and 1999 are unevenly distributed between months, showing the volatile nature of the fishery in recent years. In Table 2, it should be noted that the data is presented as catch/trip for three years and as catch per tow for one year and catch per hour towing for another. Thus, the monthly data should be compared within each year for examining seasonal distribution of the catch, but the data should not be compared between years.

The majority of the experimental tows with the proposed sweepless trawl were conducted during October and November 2001 and 2002. The catches of whiting are generally lower and the bycatch of regulated species are higher during these months than they are during the summer and early fall. Given these facts, if the data for the sweepless trawl shows low bycatch of regulated species during October and November, the gear should fish with even lower bycatch during the summer and fall.

**Table 1 1996 Monthly Landings of Whiting in Maine from VTR Records**

Month	Whiting Lbs. Kept	Whiting Lbs. Discarded
Jan	1,204	3,533
Feb	2,823	1,317
Mar	325	2,650
Apr	3,324	3,345
May	6,128	11,580
Jun	513	142
Jul	225,246	1,032
Aug	507,225	224
Sept	546,252	304
Oct	732,543	85
Nov	280,637	14
Dec	14,756	14,109
<b>Total</b>	<b>2,320,976</b>	<b>38,335</b>

**Table 2 Total Catch, Regulated Species Catch, and Percent Regulated Species Catch from Sea Sampled Whiting Trips 1995 - 2000 to Demonstrate Seasonal Distribution of Catch**

	May	June	July	August	September	October	November	Data Type
<b>TOTAL CATCH (LBS.)</b>								
1994								
1995			1,021.2	289.5	1,106.8	507.5		Wt/hr tow
1996	4,493.4		4,238.2	6,374.8	4,011.6	6,733.4	5,779.7	Wt/trip
1997								
1998			1,881.7	849.0	460.1			Wt/tow
1999			247.0	789.8	391.8			Wt/trip
2000				477.5				Wt/trip
<b>REGULATED SPECIES CATCH (LBS.)</b>								
1994								
1995			19.3	5.9	11.5	21.5		Wt/hr tow
1996	1,405.3		152.5	86.2	34.8	226.6	251.6	Wt/trip
1997								
1998			8.6	24.6	8.0			Wt/tow
1999								
2000				7.8				Wt/trip
<b>% REGULATED SPECIES</b>								
1994								
1995			1.89	2.04	1.04	4.23		
1996	31.27		0.60	0.19	0.12	3.36	4.35	
1997								
1998			0.46	2.89	1.74			
1999								
2000				1.64				

### 3.2 GRATE RAISED FOOTROPE TRAWL FISHERY AREA – EXTENDING TO THE LORAN 44500 LINE

The proposed area for the exempted grate raised footrope trawl fishery is identified in Table 3 and in Figure 1 and extends eastward along the coast to the 69°20' W. Longitude line. This area represents Area Option 2A that the Council considered during the development of this framework adjustment. Any area within this proposed area that is closed for other reasons would not be opened to this fishery, such as the Maine territorial sea inside three miles.

**Table 3 Coordinates of Area Proposed for the Exempted Grate Raised Footrope Trawl Fishery**

	<b>°N. Lat.</b>	<b>°W. Long.</b>
<b>Start</b>	43.25	70.59
<b>Point 2</b>	43.25	70
<b>Point 3</b>	43.42	70
<b>Point 4</b>	43.67	69.33
<b>Point 5</b>	44.98	69.33

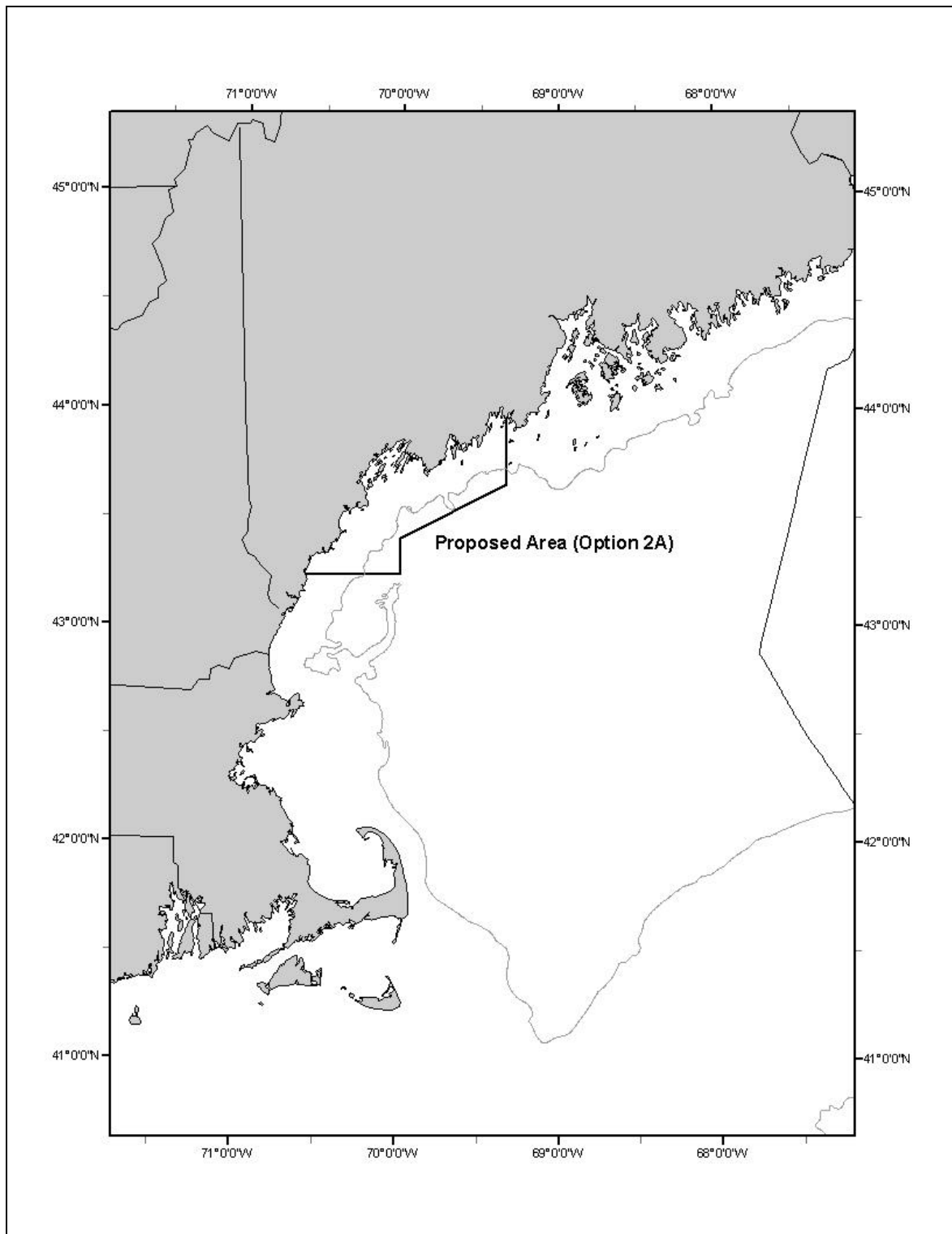
**Discussion:** During the development of this framework adjustment, the Council considered three options for the fishery area, including the proposed action (Option 2A). Option 1 was the largest area option under consideration and included an offshore component to the proposed fishery area. Option 2B was the smallest area option under consideration and represented a subset of the proposed action where experimental fishing was concentrated. Option 2A was ultimately selected by the Council, following an endorsement by the Groundfish PDT. The Groundfish PDT supports Option 2A even though sampling was not conducted throughout the entire area. The PDT based its support for Option 2A on the notion that there are similarities (species composition, hydrography, habitat, current flow, bottom topography) between Area 2A and 2B that suggest bycatch in Area 2A may be similar to that observed in the experiments conducted in Area 2B (see Figure 2 for a chart of all area options that the Council considered).

As previously stated, the grate raised footrope trawl net effectively reduces the numbers of flatfish entering the net and otherwise is an effective size selector, releasing both large and small fish. Fish such as juvenile redfish are vulnerable to this gear, and in areas of high concentrations, these fish can present a problem. Most of the redfish population lives below 75 fathoms in the GOM. The proposed area for this fishery generally limits the available fishing area to less than 75 fathoms. This decreases the opportunity for redfish to be taken in this fishery and helps to ensure a clean fishery.

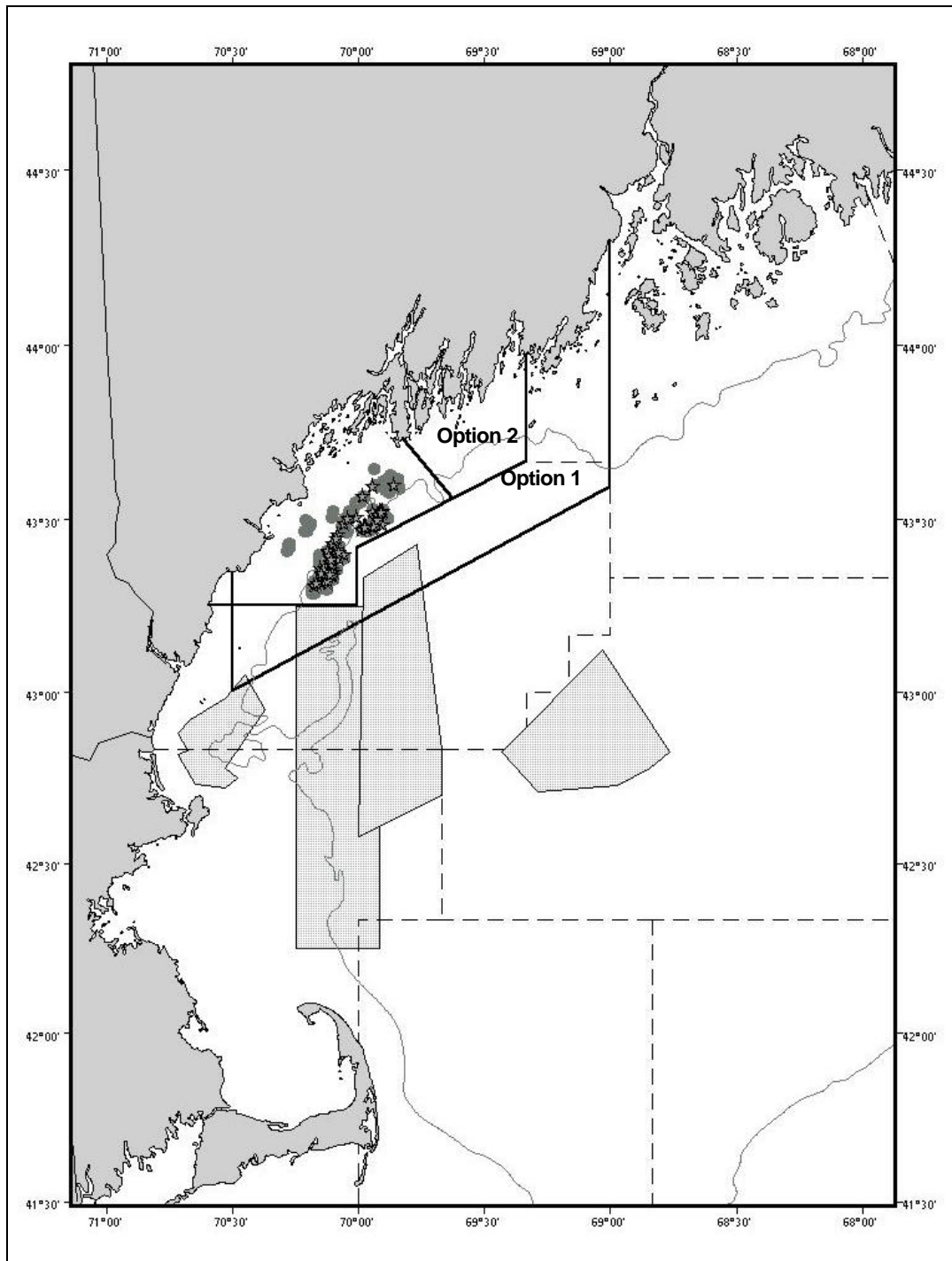
The proposed area provides fishing opportunity along the coast to the east of the immediate research area to allow greater access to coastal vessels while keeping the fishery inside 75 fathoms. This area most closely represents the historical whiting fishery and the area utilized by the fishermen who have participated in the experimental whiting grate fisheries over the past six years. The proposed eastern area is consistent in bottom type and hydrography with the area where the experimental fishery tows were conducted (both areas lying west of Penobscot Bay and west of the eastern Maine coastal current that swings offshore in the vicinity of Penobscot Bay). Fishery structure as seen in coastal sampling programs conducted by the State of Maine is

essentially the same over the entire area. Thus, the rate of capture of regulated species would not be expected to differ over the proposed area.

**Figure 1 Area Proposed for Exempted Grate Raised Footrope Trawl Fishery (Option 2A)**



**Figure 2 Tow Locations During Various Experimental Fisheries, 1999-2002**



*Note: Option 2A (the proposed action) includes both inshore areas identified in the chart. Option 2B includes only the larger of the inshore areas where experimental tows were sampled. Starred tows represent the most recent tows made in the fall of 2002.*

### **3.3 GRATE RAISED FOOTROPE TRAWL FISHERY GEAR SPECIFICATIONS**

#### **3.3.1 Nordmore-Style Grate**

**The trawl will have a Nordmore style grate mounted in the extension of the net with spacing between the bars of no more than 50 mm.** The trawl will be a sweepless trawl with bare lower legs and a bare footrope with dropper chains suspended from it (as described in the subsections below). There will be no sweep or chain attached to the droppers. The gear specifications for this fishery will be the same as those in the Cape Cod Bay raised footrope trawl fishery established through Framework 35 to the Northeast Multispecies FMP, with the exception of the requirements to use a 50-mm grate and a sweepless trawl.

#### **3.3.2 Net Specifications**

The following net specifications apply to the grate raised footrope trawl fishery established by this framework adjustment. These net specifications are intended to clarify the current specifications to allow both fishermen and enforcement agents to have a better understanding of how to properly “rig” raised footrope trawl gear. **With the exception of the requirements to use a 50-mm grate and a sweepless trawl in this fishery, the net specifications described below mirror those for the Cape Cod Bay raised footrope trawl fishery established through Framework 35 to the Northeast Multispecies FMP.**

##### **3.3.2.1 Headrope**

The headrope specifications mirror those for the Cape Cod Bay raised footrope trawl fishery established through Framework 35.

Floats with a minimum diameter of eight inches must be attached along the entire length of the headrope with a maximum spacing between each float of four feet.

##### **3.3.2.2 Ground Gear**

The ground gear specifications mirror those for the Cape Cod Bay raised footrope trawl fishery established through Framework 35.

- Ground gear must be all bare wire not larger than ½-inch in diameter for the top leg, not larger than 5/8-inch in diameter for the bottom leg, and not larger than ¾-inch in diameter for the ground cables.
- The top legs must be at least as long as the bottom legs.
- The total length of the ground cables must not be greater than forty fathoms from the doors to the wing ends.



### 3.3.2.3 Footrope

The footrope specifications mirror those for the Cape Cod Bay raised footrope trawl fishery established through Framework 35.

- The footrope must be longer than the headrope, but not more than twenty feet longer than the headrope.
- The footrope must be rigged so that it does not contact the bottom while fishing.

### 3.3.2.4 Drop Chains

The drop chain specifications mirror those for the Cape Cod Bay raised footrope trawl fishery established through Framework 35.

- Drop chains must be 42-inches in length or greater.
- Drop chains may be a maximum of 3/8-inch stock when no sweep is used.
- Only bare chain may be used; cookies or additional weights on the drop chains are prohibited.
- Drop chains must be hung from the center of the footrope and each corner (the quarter, or the junction of the bottom wing to the belly at the footrope).
- Drop chains must be hung at eight foot intervals along the footrope from the corners to the wing ends.

### 3.3.2.5 Sweep Specifications – Sweepless Trawl

The grate raised footrope trawl net is to be a sweepless trawl. No sweep, whether made of chain, a roller frame, rockhopper gear, or any other type may be used in the exempted grate raised footrope trawl fishery.

### 3.3.3 Minimum Mesh Size

For any vessel participating in this exempted grate raised footrope trawl fishery, **the minimum codend mesh size will be 2.5-inch mesh.** Consistent with Amendment 12 to the Multispecies FMP, the codend can consist of either square or diamond mesh, provided that all mesh in the codend is at least 2.5-inches. Minimum mesh size is measured by the inside stretch of the mesh. In terms of management for small mesh multispecies, the codend is defined by the Amendment 12 regulations as the following:

*For a vessel less than or equal to 60 feet in length overall, the minimum mesh to retain Small mesh multispecies must be applied to a minimum of the first 50 meshes (100 bars in the case of square mesh) from the terminus of the net. For a vessel greater than 60 feet in length overall, the minimum mesh to retain small mesh multispecies must be applied to a minimum of the first 100 meshes (200 bars in the case of square mesh) from the terminus of the net. This specification does not apply to vessels that fish with mesh smaller than 2.5 inches and are subject to other codend specifications for other small mesh fisheries (loligo squid, for example).*

### 3.4 ALLOWABLE LANDINGS AND INCIDENTAL CATCH RESTRICTIONS

#### 3.4.1 Whiting/Offshore Hake Possession Limit

Vessels participating in the exempted grate raised footrope trawl fishery will be limited to a **maximum whiting/offshore hake possession limit in this fishery of 7,500 pounds**. Vessels using mesh larger than the minimum 2.5-inches will not be allowed to possess whiting in quantities greater than 7,500 pounds.

#### 3.4.2 Additional Incidental Catch Restrictions

For the grate raised footrope trawl fishery, the incidental catch restrictions reflect those that were incorporated into the Cape Cod Bay raised footrope trawl fishery under Framework 35 with the notable addition of a prohibition on the possession of dogfish.

Vessels participating in the grate raised footrope trawl fishery may retain **red hake, squid, butterfish, mackerel, alewife and herring** up to the amounts allowed by the regulations for those species, provided they comply with all regulations for those species. The following additional restrictions apply:

- A prohibition on the possession of regulated species (Atlantic cod, witch flounder, American plaice, yellowtail flounder, winter flounder, windowpane flounder, haddock, pollock, redfish and white hake)
- A prohibition on the possession of monkfish
- A prohibition on the possession of lobsters
- A prohibition on the possession of skates
- A prohibition on the possession of crabs, longhorn sculpin, sea raven, summer flounder (fluke), and ocean pout
- A prohibition on the possession of dogfish.

**Discussion:** The prohibition of possession of monkfish, lobsters, and skates helps to ensure that the fishermen rig the net correctly, so that the footrope is not in contact with the bottom and thus much less likely to catch these species. The prohibition on crabs, longhorn sculpin, sea raven and dogfish is designed to reduce the damage to whiting, a soft bodied fish, from abrasion and puncture as well as to encourage keeping the footrope off the bottom. Except for a few juveniles, very few dogfish are retained by the grate raised footrope trawl net as they are too large to go through the grate.

Regulations governing the establishment of multispecies exempted fisheries are specified in CFR §648.80(a)(8)(iv) and require that at a **minimum**, Multispecies Exempted Fisheries must comply with the following incidental catch restrictions:

- A prohibition on the possession of regulated multispecies;
- A limit of 10 percent monkfish or monkfish parts, by weight, of all other species on board;
- A limit of 10 percent lobsters, by weight, of all other species on board or 200 lobsters,

whichever is less;

- A limit of 10 percent skate or skate parts in the Southern New England regulated mesh area, by weight, of all other species on board.

The incidental catch restrictions proposed for the grate raised footrope trawl fishery in this framework adjustment are more conservative than the current minimum required restrictions for Multispecies Exempted Fisheries and are intended to discourage vessels from rigging their nets improperly by not allowing them to keep any species that are usually caught when nets fish directly on the ocean bottom. This should minimize the bycatch of all non target species in this fishery.

### **3.5 FISHERY REVIEW AND MONITORING**

The Council believes that monitoring of this fishery is important to ensure that regulated species bycatch remains at a minimum, especially since absolute levels of participation in this fishery cannot be predicted. NMFS should work closely with ME DMR to monitor this fishery on a seasonal basis. The Council recommends that as a goal, observers are included on as many trips occurring in this fishery as practicable. Observers will likely be provided by both NMFS and Maine DMR. Maine DMR intends to contribute four (4) sea sampling trips per month during the grate raised footrope trawl fishery season to monitor the bycatch of regulated species.

As part of the effort to closely monitor this fishery, the Groundfish PDT will annually review sea sampling data from the fishery and develop recommendations, as necessary, to ensure that groundfish bycatch remains at a minimum. Since this is a seasonal fishery, the Council may modify the specifications for this fishery through a framework adjustment to the Multispecies FMP prior to the next season if the Groundfish PDT recommends adjustments to address regulated species bycatch.

The Council desires 10 percent observer coverage in this fishery. No later than 2006, NMFS, in consultation with the Groundfish PDT, will determine if this level of observer coverage is sufficient to monitor catch and bycatch in this fishery with an acceptable level of precision. The level of desired observer coverage will be adjusted (increased or decreased) consistent with that analysis. The Groundfish PDT may recommend adjustments to the level of observer coverage prior to 2006 based on information examined during the annual Groundfish PDT review described above.

**Discussion:** The grate raised footrope trawl was designed to restrict the entry of all larger fish as well as to almost completely reduce the entry of flatfish and other bottom dwellers into the net. The combination of the grate bar spacing and cod end mesh is designed to select for a certain size range of fish. Should any regulated species within this size range enter the net, they will be retained along with the whiting. Given the timing of the research towing and experimental fisheries conducted to date and the recent status of the stocks of such species as cod, haddock, pollock and redfish in the GOM, bycatch of these species has not occurred. The fishery should be monitored through sea sampling to assure that bycatch remains low as these stocks continue to recover.

## 4.0 ALTERNATIVES TO THE PROPOSED ACTION

Because the action in this framework adjustment is narrowly focused on the establishment of the exempted grate raised footrope trawl fishery, the obvious alternative to the proposed action is the **no action alternative**. Under the no action alternative, the Council would not establish an exempted grate raised footrope trawl fishery in this framework adjustment.

During the development of this framework adjustment, the Council considered only one alternative to address some issues (incidental catch restrictions, gear restrictions) because the data collected through the experimental fisheries have been compiled and analyzed and appear to best support one specific alternative rather than a range. The “range” of possible alternatives for the gear specifications, in other words, were identified and assessed throughout five years of experimental fishing.

The Council considered some alternatives for the grate raised footrope trawl fishery season, area, minimum mesh size requirements, and net strengthener provisions when developing this framework adjustment. Alternatives that the Council considered and the rationale for the Council’s choices are summarized below.

### *Season (Non-Preferred Alternatives)*

When the establishment of the grate raised footrope trawl fishery was considered as part of Framework 37, one alternative was to allow this fishery to be prosecuted on a year-round basis. The Council did not select this alternative because the experimental grate raised footrope trawl fisheries did not occur throughout the entire year, so no sea sampling data are available to support the exemption during the winter and spring months.

As part of both Framework 37 and Framework 38, the Council also considered allowing this fishery to occur from June 1 – November 30 of each year. Data presented in Table 1 (p. 4) and Table 2 (p. 4) were evaluated by the Groundfish PDT and the Council when determining the appropriate season for this fishery. The sea sampling data in the experimental fisheries from 1996 – 1999 show that groundfish bycatch rates (in percentage of total catch, by weight) declined from July-August and then increased in the fall. The total weight of bycatch, however, remained fairly constant during these months. This suggests that bycatch percentages observed in the recent October/November experiments are not likely to be exceeded during the months of July-September. In contrast, the data presented in Table 2 show that May 1996 bycatch percentages were high. This, in combination with the fact that no sea sampling was conducted during the month of June, led the Groundfish PDT, Groundfish Committee, and ultimately the Council to recommend that the month of June be eliminated from consideration at this time. The potential level of risk to the groundfish resource by allowing this fishery to occur in June was deemed to be unacceptable. As a result, the proposed action establishes a season for this fishery from July 1 – November 30 of each year.

### *Area*

During the development of this action (in both Framework 37 and 38), the Council considered three alternatives for establishing the area for the grate raised footrope trawl fishery (Option 1, 2A, and 2B). The areas that the Council considered are depicted in Figure 2 (p. 7). The proposed action represents Option 2A. The Council did not select Option 1 because no sea

sampling occurred in the proposed offshore area during the experimental fisheries from 1995-2002. Without data demonstrating low groundfish bycatch rates in the offshore area, the Council was not comfortable with the potential level of risk to the groundfish resource associated with allowing fishing in the offshore area. The Groundfish PDT recommended that this area be sampled through experimental fisheries so that future consideration can be given to expanding this fishery farther offshore.

An additional option for the fishery area was proposed as part of Framework 37, but this option was eliminated prior to the development of this framework adjustment because it included areas even farther offshore, none of which had been sampled through the experimental fishery. The Council selected Option 2A for the fishery area, which is the larger of the two inshore options that were considered. The Groundfish PDT supports either Option 2A or 2B because of similarities (species composition, hydrography, habitat, current flow, bottom topography) between the two areas.

### ***Minimum Mesh Size***

During the development of this framework adjustment, the Council considered two options for minimum codend mesh in this fishery: (1) 2.5-inch diamond or square mesh (the proposed action); and (2) 2.25-inch knotless square mesh or 2.5-inch diamond mesh. Research conducted by Maine DMR during the experimental fisheries showed a better selectivity with the 2.25-inch knotless square mesh than with 2.5-inch diamond mesh in catch at size of whiting (see Figure 1 in Appendix I) and no difference in bycatch of non-target species between the two cod end mesh types (see Figure 2 in Appendix I).

The Council chose to require a minimum 2.5-inch codend mesh in this fishery that is consistent with the Amendment 12 mesh requirements (either square or diamond mesh). The proposed action is intended to minimize complexities in the regulations and maintain consistency between various small mesh multispecies fisheries throughout the region.

### ***Net Strengthening Provisions***

During the development of Frameworks 37 and 38, several alternatives were considered for net strengthening provisions in the exempted grate raised footrope trawl fishery. These include:

- prohibition on the use of a net strengthener;
- net strengtheners with at least two times the stretch mesh measure in the cod end mesh;
- net strengtheners with at least three times the stretch mesh measure in the cod end mesh;
- current net strengthener provisions for 2.5-inch mesh (the proposed action).

The proposed action is intended to minimize complexities in the regulations, ease compliance and enforcement, and maintain consistency between various small mesh multispecies fisheries throughout the region.

## 5.0 AFFECTED ENVIRONMENT

The physical, biological, and human environment affected by the actions proposed in this framework adjustment are described in detail in Amendment 12 (small mesh multispecies) to the Northeast Multispecies FMP. Section E.6.3 of the Amendment 12 document describes the affected physical environment and habitat. Section E.6.4 describes the affected biological environment, including life history and stock assessment information for the small mesh multispecies stocks. Section E.6.5 of Amendment 12 describes the affected human environment and includes biological, economic, and social characterizations of small mesh multispecies fisheries occurring throughout the region.

Section E.6.5.3.5 of Amendment 12 in particular provides the following information about the participants in the experimental grate fisheries from 1995-1997:

The experimental grate fishery is a localized fishery, with more than 78% of the participating vessels declaring ports in the state of Maine as their principal port in 1997, namely Portland and its smaller, surrounding ports. Table 4 summarizes the principal ports for vessels that participated in the grate fishery since the first experimental fishery in 1995 through the fishery in 1997. Besides Maine and Massachusetts, a few vessels whose principal ports are located in New Hampshire participated in the experimental fishery. Only one vessel from the southern New England/Mid-Atlantic area participated during this time period, and that was during the 1995 season.

**Table 4 Principal Port Profile for Vessels Participating in the Experimental Whiting Separator Trawl Fishery, 1995 – 1997**

PRINCIPAL PORT		NUMBER OF VESSELS		
STATE	CITY	1995	1996	1997
MA	GLOUCESTER	0	4	0
	PROVINCETOWN	0	3	0
	OTHER	6	6	4
MA TOTAL		6	13	4
ME	CUNDYS HARBOR	0	3	0
	FIVE ISLANDS	5	7	4
	NEW HARBOR	0	3	0
	PHIPPSBURG	4	3	0
	PORTLAND	11	15	8
	SEBASCO ESTATES	5	4	0
	WEST POINT	3	3	3
	OTHER	21	23	10
ME TOTAL		49	61	25
NH TOTAL		0	5	3
NY TOTAL		1	0	0
Grand Total		56*	79	32*

\* Vessels were counted twice due to permit changes and respecifications of principal ports.  
Source: Amendment 12 to the Northeast Multispecies FMP.

Table 5 characterizes the other federally-permitted commercial fisheries in which the grate fishery vessels participated from 1995-1997. Just as those in the Cultivator Shoal Whiting Fishery, most vessels in the grate fishery participate on a seasonal basis in several different fisheries. A majority of participants possess scallop, lobster, and squid/mackerel/butterfish permits. Some also have possessed summer flounder, scup, and surf clam/ocean quahog permits.

**Table 5 Other Permits Held by Vessels Participating in the Whiting Experimental Separator Trawl (Grate) Fishery, 1995 – 1997**

FISHERY PERMIT CATEGORY	YEAR		
	1995	1996	1997
<b>SUMMER FLOUNDER</b>	10	16	5
<b>LOBSTER</b>	32	52	22
<b>MULTISPECIES</b>	54	79	29
<b>OCEAN QUAHOG</b>	16	23	8
<b>SCALLOP</b>	45	70	27
<b>SCUP</b>	0	0	2
<b>SURF CLAM</b>	22	33	14
<b>SQUID-MACKEREL-BUTTERFISH</b>	37	60	18
<b>Grand Total</b>	216*	333*	125*

*\* Multiple permits are owned by one vessel.*

*Source: Amendment 12 to the Northeast Multispecies FMP.*

In addition to the information presented above, the Council's Whiting Monitoring Committee (WMC) has completed two Stock Assessment and Fishery Evaluation (SAFE) Reports since the implementation of Amendment 12. These documents update information regarding the biological and human environments affected by the management of small mesh multispecies. The 2002 SAFE Report for Small Mesh Multispecies was recently completed by the WMC and submitted as an appendix to Framework 37 (December 2002) to provide the most recent information regarding the affected environment. Information presented in the 2002 SAFE Report is not reproduced within this framework document and should be referenced as necessary.

Information about endangered and threatened species of concern relative to this framework adjustment is presented in Section 6.1.5 of this document (p. 33).

## **6.0 ANALYSIS OF IMPACTS**

### **6.1 BIOLOGICAL IMPACTS**

#### **6.1.1 Experimental Fishery Data**

The following tables (Table 6 – Table 10) present catch and bycatch information by tow and by trip for the experimental fisheries that occurred during 2001 and 2002 with the proposed gear. These tables also appear in Appendix I. They are reproduced in this section to provide some perspective on catch composition, catch rates, and potential biological impacts associated with establishing this exempted fishery.

Table 6 presents tow-by-tow catch information for 71 tows that were sampled with the proposed gear during October and November 2001. Six highlighted tows in Table 6 were discounted due to problems (aborted tows, etc.). Table 7 presents tow-by-tow catch information for 22 tows that were sampled with the proposed gear on the F/V Tenacious during the fall of 2002. Table 8 presents tow-by-tow catch information for 39 tows that were sampled with the proposed gear on the F/V North Star during the fall of 2002. Table 9 summarizes the data in Table 7 on a trip-by-trip basis (six trips). Table 10 summarizes the data in Table 8 on a trip-by-trip basis (ten trips). More detailed information is provided in **Appendix I**.



**Table 6 Tows with Sweepless Trawl, 50 mm Grate and 2.5" Diamond Mesh Cod End, October, November, 2001**

Date	Tow #	Tot.Catch kg	Whiting kg	Reg Sp kg	RegSp% Tot Cat	Tow Time	Depth (F)	Tow Time Dec Hrs	Tot.Cat/Hr kg	Reg.Sp/Hr kg	%Reg.Sp
10/9/2001	1	186.0	140	5.4	2.9	1:20	55-64	1.33	139.5	4.1	2.9
10/9/2001	2	216.0	190	3.3	1.5	1:35	61-63	1.58	136.4	2.1	1.5
10/9/2001	3	236.9	200	4.2	1.8	1:42	63-60	1.70	139.4	2.4	1.8
10/11/2001	4	0.0	0	0.0	0.0	1:00	58-62	1.00			
10/11/2001	5	19.9	19	0.0	0.0	1:30	65-70	1.50			
10/11/2001	6	162.7	100	6.5	4.0	1:30	68-59	1.50			
10/11/2001	7	106.1	65	9.2	8.7	1:20	60-51	1.33	79.6	6.9	8.7
10/12/2001	8	64.0	35	2.4	3.8	2:00	60-68	2.00	32.0	1.2	3.8
10/12/2001	9	54.6	40	1.1	2.0	1:22	68.00	1.37	40.0	0.8	2.0
10/12/2001	10	48.2	36	0.8	1.7	1:20	71-74	1.33	36.2	0.6	1.7
10/12/2001	11	91.6	64	3.7	4.0	1:30	64-58	1.50	61.1	2.5	4.0
10/16/2001	12	176.0	140	6.0	3.4	1:55	64-61	1.92	91.8	3.1	3.4
10/16/2001	13	216.0	175	5.0	2.3	1:27	62-63	1.45	149.0	3.4	2.3
10/16/2001	14	139.3	115	3.5	2.5	1:04	63-68	1.07	130.5	3.3	2.5
10/16/2001	15	113.4	85	2.7	2.3	1:45	66-58	1.75	64.8	1.5	2.3
10/19/2001	16	262.5	210	4.8	1.8	2:00	51-68	2.00	131.2	2.4	1.8
10/19/2001	17	221.1	183	3.3	1.5	2:00	68-59	2.00	110.6	1.6	1.5
10/19/2001	18	0.0	0	0.0	0.0	1:15	59-62	1.25			
10/20/2001	19	223.8	175	4.3	1.9	1:30	63-64	1.50	149.2	2.8	1.9
10/20/2001	20	158.1	135	3.3	2.1	1:33	64-70	1.55	102.0	2.1	2.1
10/20/2001	21	128.6	100	3.4	2.6	1:47	72-64	1.78	72.1	1.9	2.6
10/22/2001	22	128.2	120	2.5	2.0	1:30	59-63	1.50	85.5	1.7	2.0
10/22/2001	23	95.5	85	2.8	2.9	1:28	63-62	1.47	65.1	1.9	2.9
10/22/2001	24	235.3	200	6.8	2.9	1:27	62-61	1.45	162.2	4.7	2.9
10/22/2001	25	69.8	60	2.4	3.4	1:35	64-57	1.58	44.1	1.5	3.4
10/23/2001	26	67.1	60	1.2	1.7	1:43	63-66	1.73	38.7	0.7	1.7
10/23/2001	27	90.6	80	2.8	3.1	1:30	63-64	1.50	60.4	1.9	3.1
10/23/2001	28	82.0	72	2.1	2.6	1:53	63-65	1.88	43.5	1.1	2.6
10/28/2001	29	32.8	13	0.1	0.3	0:23	37-39	0.38	85.6	0.3	0.3

**Table 6 Continued** - Tows with Sweepless Trawl, 50 mm Grate and 2.5" Diamond Mesh Cod End, October, November, 2001

Date	Tow #	Tot.Catch kg	Whiting kg	Reg Sp kg	RegSp% Tot Cat	Tow Time	Depth (F)	Tow Time Dec Hrs	Tot.Cat/Hr kg	Reg.Sp/Hr kg	%Reg.Sp
10/28/2001	30	30.7	25	0.8	2.6	0:36	48-55	0.60	51.2	1.3	2.6
10/28/2001	31	103.4	65	3.3	3.1	1:30	65-70	1.50	68.9	2.2	3.1
10/28/2001	32	81.4	72	0.5	0.7	1:25	58-56	1.42	57.5	0.4	0.6
10/29/2001	33	71.6	62	2.1	2.9	1:21	58-63	1.35	53.0	1.5	2.9
10/29/2001	34	96.4	80	0.9	0.9	1:17	66-67	1.28	75.1	0.7	0.9
10/29/2001	35	84.0	70	2.0	2.4	1:25	73-72	1.42	59.3	1.4	2.4
10/29/2001	36	71.3	58	2.2	3.0	1:25	71-60	1.42	50.3	1.5	3.0
10/31/2001	37	96.1	85	3.3	3.4	1:15	62-64	1.25	76.9	2.6	3.4
10/31/2001	38	141.3	100	4.0	2.8	1:19	63-60	1.32	107.3	3.0	2.8
10/31/2001	39	116.0	72	2.8	2.4	1:28	63-60	1.47	79.1	1.9	2.4
10/31/2001	40	84.4	60	1.3	1.5	1:15	61-58	1.25	67.5	1.0	1.5
11/4/2001	41	176.6	144	4.2	2.4	2:00	67-64	2.00	88.3	2.1	2.4
11/4/2001	42	78.1	70	1.1	1.3	1:15	65-64	1.25			
11/4/2001	43	108.7	95	4.4	4.0	1:20	69-66	1.33	81.5	3.3	4.0
11/4/2001	44	108.7	100	0.7	0.6	1:15	67-63	1.25	87.0	0.5	0.6
11/8/2001	45	84.2	72	3.0	3.6	1:35	65-60	1.58	53.2	1.9	3.6
11/8/2001	46	102.1	90	3.8	3.7	1:30	64-59	1.50	68.0	2.5	3.7
11/8/2001	47	106.8	100	1.5	1.4	1:30	60-68	1.50	71.2	1.0	1.4
11/8/2001	48	31.4	30	0.0	0.0	1:35	68-66	1.58			
11/10/2001	49	123.9	100	2.5	2.0	1:15	59-68	1.25	99.1	2.0	2.0
11/10/2001	50	110.8	90	2.4	2.2	1:50	69-72	1.83	60.4	1.3	2.2
11/10/2001	51	77.6	68	1.3	1.7	1:40	68-60	1.67	46.5	0.8	1.7
11/11/2001	52	174.4	145	4.6	2.6	1:40	64-67	1.67	104.6	2.8	2.6
11/11/2001	53	127.7	108	2.3	1.8	1:40	68-60	1.67	76.6	1.4	1.8
11/11/2001	54	107.4	92	2.3	2.1	2:08	64-65	2.13	50.4	1.1	2.1
11/15/2001	55	167.2	144	6.2	3.7	1:20	69-62	1.33	125.4	4.7	3.7
11/15/2001	56	99.8	84	3.8	3.8	1:23	61-62	1.38	72.1	2.7	3.8
11/15/2001	57	270.8	210	12.0	4.4	1:35	64-65	1.58	171.0	7.6	4.4
11/15/2001	58	198.7	155	6.8	3.4	1:32	64-60	1.53	129.6	4.4	3.4
11/17/2001	59	126.3	105	2.8	2.2	1:35	65-63	1.58	79.8	1.8	2.2

**Table 6 Continued** – Tows with Sweepless Trawl, 50 mm Grate and 2.5" Diamond Mesh Cod End, October, November, 2001

Date	Tow #	Tot.Catch kg	Whiting kg	Reg Sp kg	RegSp% Tot Cat	Tow Time	Depth (F)	Tow Time Dec Hrs	Tot.Cat/Hr kg	Reg.Sp/Hr kg	%Reg.Sp
11/17/2001	60	97.6	83	2.2	2.3	1:43	64-67	1.72	56.8	1.3	2.3
11/17/2001	61	98.5	85	3.3	3.3	1:33	67-62	1.55	63.5	2.1	3.3
11/21/2001	62	74.9	60	0.4	0.5	1:30	40-57	1.50	49.9	0.3	0.5
11/21/2001	63	118.2	95	2.7	2.2	1:24	68-70	1.40	84.4	1.9	2.2
11/21/2001	64	140.5	108	3.3	2.3	1:20	68-60	1.33	105.4	2.5	2.3
11/24/2001	65	175.8	150	3.4	1.9	1:29	64-66	1.48	118.5	2.3	1.9
11/24/2001	66	137.9	122	1.9	1.4	1:26	67-62	1.43	96.2	1.3	1.4
11/24/2001	67	113.8	93	2.9	2.6	1:13	63-67	1.22	93.5	2.4	2.5
11/24/2001	68	193.1	175	5.3	2.8	1:34	66-63	1.57	123.2	3.4	2.7
11/27/2001	69	234.5	185	7.4	3.2	1:33	67-64	1.55	151.3	4.8	3.2
11/27/2001	70	156.0	140	4.2	2.7	1:43	63-68	1.72	90.9	2.4	2.7
11/27/2001	71	143.4	118	3.4	2.4	1:46	67-61	1.77	81.2	1.9	2.4
											%Reg.Sp.
							Mean Kg/Hr		85.8	2.2	2.5
Highlighted = Tows with problems, discounted.							Std. Deviation		34.39	1.4	1.18
							Number of Tows		65		

**Table 7 Catch in Weight per Tow by Species for 22 Tows with Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V Tenacious, Fall 2002)**

<b>Species</b>	<b>Tow 1 Wt. kg.</b>	<b>Tow 2 Wt. kg.</b>	<b>Tow 3 Wt. kg.</b>	<b>Tow 4 Wt. kg.</b>	<b>Tow 5 Wt. kg.</b>	<b>Tow 6 Wt. kg.</b>	<b>Tow 7 Wt. kg.</b>	<b>Tow 8 Wt. kg.</b>	<b>Tow 9 Wt. kg.</b>	<b>Tow 10 Wt. kg.</b>	<b>Tow 11 Wt. kg.</b>	<b>Tow 12 Wt. kg.</b>	<b>Tow 13 Wt. kg.</b>
<b>Shrimp</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Whiting/Silver Hake</b>	28	3.4	50.4	39	7.2	113.8	31	27.4	2.0	10.5	22	56	59.5
<b>EXP Whiting</b>	28	3.4	50.4	39	7.2	113.8	31	27.4	2.0	10.5	22	56	59.5
<b>Red Hake (Ling)</b>	9	1.4	2	2.2	0	4.6	1.2	2.4	0.7	3.0	1.5	0.3	0.2
<b>White Hake</b>	0.5	0	1.2	0.3	0	0.3	0.2	0.4	0.05	0	0	0.2	0
<b>Redfish</b>	0.1	0	0	0	0	0	0	0	0	0	0	0	0
<b>American Plaice</b>	1	0	1	0.5	0.1	1.05	0	0.6	0	0.1	0	0.3	0.1
<b>Witch Flounder</b>	0.2	0	0.1	0.4	0.05	0.15	0	0	0	0	0.1	0	0.1
<b>Windowpane Flounder</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Winter Flounder</b>	0.05	0	0	0	0	0	0	0	0	0	0	0	0
<b>Yellowtail Flounder</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Cod</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Haddock</b>	0	0	0	0.15	0	0	0	0	0	0	0	0	0
<b>Pollock</b>	0	0	0.2	0	0	0	0	0	0	0	0	0	0
<b>Herring</b>	0	6.8	16.6	10	4.6	3.6	8	2.6	4.3	96	6.5	3.8	4.1
<b>Alewife</b>	4.6	1.4	2.4	0	2.4	3	2.9	2.2	1.2	0.5	3.5	2.7	2
<b>Illex</b>	0.2	0.6	0.2	0.4	0.3	0.5	0.6	0.4	0	1.3	0.6	0.9	1.1
<b>Butterfish</b>	0.9	0.4	0	0	0	0.2	0	0.05	0.05	0.1	0.1	0.2	0.15
<b>Sculpin</b>	0.3	0	0	0	0	0	0	0	0	0	0	0	0
<b>Skate</b>	0	0	0	0	0	0	0	0	0	0.6	0	0	0
<b>Spiny Dog/Dogfish</b>	0	0	0	0.3	0	0	0	0	0	0	0	0	0
<b>Monkfish/Goosefish</b>	0.3	0	0	0.5	0	0	0	0	0	0	0	0	0
<b>Scallop</b>	0	0	0	0.1	0	0	0	0	0	0	0	0	0
<b>Four Spot</b>	0.2	0	0	0	0.1	0.4	0.1	0.1	0.2	0	0	0	0
<b>Shad</b>	0.1	0	0	0	0	0	0	0	0	0	0	0	0
<b>Lobster</b>	0.9	0	0	0	0	0	0	0	0.2	0	0	0	0
<b>Jonah Crab</b>	0.2	0.1	0	0.2	0	0	0	0	0	0	0	0	0
<b>Rock Crab</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Calculated Total</b>	46.4	14.1	74.1	54.0	14.7	127.5	43.9	36.1	8.5	112.0	34.3	64.3	67.3
<b>Observer Total</b>													
<b>Reg. Sp. Bycatch (kg)</b>	1.8	0.0	2.3	1.3	0.2	1.5	0.2	1.0	0.1	0.1	0.1	0.5	0.2
<b>Reg. Sp. Bycatch %</b>	3.88	0.00	3.11	2.41	1.02	1.14	0.34	2.63	0.59	0.09	0.29	0.70	0.30

*\*EXP Whiting represents an expansion made from the measured sample to the total catch (if necessary).*

**Table 7 Continued** – Catch in Weight per Tow by Species for 22 Tows with Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V Tenacious, Fall 2002)

Species	Tow 14 Wt. kg.	Tow 15 Wt. kg.	Tow 16 Wt. kg.	Tow 17 Wt. kg.	Tow 18 Wt. kg.	Tow 19 Wt. kg.	Tow 20 Wt. kg.	Tow 21 Wt. kg.	Tow 22 Wt. kg.	Sum	Wt./Tow	Std.Dev.
Shrimp	0	0	0	0	0.2	0	0	0	0	0.0	0.0	0.000
Whiting/Silver Hake	102.9	28	9.4	26	5.8	62	84	13.6	23.8	450.2	20.5	30.629
EXP Whiting	102.9	28	9.4	26	5.8	62	84	13.6	23.8	450.2	20.5	30.629
Red Hake (Ling)	13.8	0.4	1.7	6.4	4.2	2	5.6	4.4	0.9	28.4	1.3	2.411
White Hake	1.6	0	0.7	0.45	0	1.3	3	0.4	0	3.1	0.1	0.336
Redfish	0.2	0	0	0	0.05	0	0.05	0	0	0.1	0.0	0.028
American Plaice	0.7	0.1	0.6	1.7	0.2	0.4	1.9	0.3	0.5	4.7	0.2	0.417
Witch Flounder	1.05	0	0.3	0.3	0.4	0.2	0.05	0.05	0.3	1.0	0.0	0.101
Windowpane Flounder	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Winter Flounder	0	0	0	0	0	0	0	0	0	0.1	0.0	0.014
Yellowtail Flounder	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Cod	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Haddock	0	0	0	0	0.6	0.8	0	0	0	0.2	0.0	0.042
Pollock	0	0	0	0	0	0	0.1	0	0	0.2	0.0	0.042
Herring	0.1	1	0	0	0	0.5	0.05	1.4	1.2	166.8	7.6	25.321
Alewife	5.4	7	1.0	3.7	0.05	8.8	6.6	7.4	2.8	28.8	1.3	1.239
Illex	2.2	1.1	0.3	1.9	0.05	1.05	2.6	1.8	0.5	7.0	0.3	0.366
Butterfish	0.05	0	0.3	0.9	0.05	0.05	0.05	0.4	0.5	2.2	0.1	0.249
Sculpin	0	0	0	0	0	0	0	0	0	0.3	0.0	0.083
Skate	0	0	0	0	0	0	0	0	0	0.6	0.0	0.166
Spiny Dog/Dogfish	0	0	2.6	2	0	11.6	3.4	25.4	20.2	0.3	0.0	0.083
Monkfish/Goosefish	0	0	0	0	0	0	0	0	0	0.8	0.0	0.156
Scallop	0	0	0.3	0.2	0.2	0	0.05	0	0	0.1	0.0	0.028
Four Spot	0.1	0	0	0	0	1.9	3.0	0.8	0	1.0	0.0	0.103
Shad	0	0	0	0	0	0	0	0	0	0.1	0.0	0.028
Lobster	0	0	0	0	0	0	0	0	0	1.1	0.0	0.250
Jonah Crab	0	0	0	0	0.05	0	0	0	0	0.4	0.0	0.060
Rock Crab	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Calculated Total	128.0	37.6	17.0	43.4	11.7	90.4	110.4	55.7	50.5	697.0	31.7	35.971
Observer Total												
Reg. Sp. Bycatch (kg)	3.5	0.1	1.6	2.4	1.1	2.6	5.0	0.7	0.7	9.0	0.4	0.780
Reg. Sp. Bycatch %	2.73	0.27	9.12	5.42	9.40	2.88	4.53	1.26	1.39	1.27	1.29	

\*EXP Whiting represents an expansion made from the measured sample to the total catch (if necessary).

**Table 8 Catch in Weight per Tow by Species for 39 Tows with a Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V North Star, Fall 2002)**

Species	Tow 1 Wt. kg.	Tow 2 Wt. kg.	Tow 3 Wt. kg.	Tow 4 Wt. kg.	Tow 5 Wt. kg.	Tow 6 Wt. kg.	Tow 7 Wt. kg.	Tow 8 Wt. kg.	Tow 9 Wt. kg.	Tow 10 Wt. kg.	Tow 11 Wt. kg.	Tow 12 Wt. kg.	Tow 13 Wt. kg.	Tow 14 Wt. kg.	Tow 15 Wt. kg.
Shrimp	0.05	0.3	0.7	0.05	0.05	0	0.1	0.4	0.3	0.05	0.01	0.01	0.45	3	0
Whiting/Silver Hake	60	70.7	98	195.6	54.9	80.3	76.6	22.7	176.6	52.7	15	6.6	42.6	148.8	105.8
EXP Whiting	60	70.7	98	195.6	54.9	80.3	76.6	22.7	176.6	52.7	15	6.6	42.6	148.8	105.8
Red Hake (Ling)	3.8	15.9	42.2	9	4.9	3.8	9.4	7.7	12.2	22.8	2.05	0.9	2.8	15.6	10.1
White Hake	1.35	3	2	2.35	0.7	1.1	2.5	1.4	4.7	4.2	1.5	2.25	0	3.1	2.1
Redfish	0	0.2	1.5	1.2	0.05	0	0	21.6	0.2	0.7		0	0	0	0
American Plaice	0.8	0.4	1.5	1.3	0.3	0	0.15	0.2	0.4	3.4	0.05	0.2	0.4	1.7	0.2
Witch Flounder	0	1	2.1	0.7	0	0	0.2	0.2	0.8	6		0.3	0.5	0.6	0.1
Windowpane Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellowtail Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cod	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haddock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pollock	0.7	0	0	0	0	0	0	0	0.2	0	0	0	0.2	0	0
Herring	0	0.8	0	0.2	4.3	2.4	6.2	4.4	1.3	2.8	0.3	2.6	15.2	20	1.4
Alewife	0.4	0	0	0	0	2.9	6	0.3	0	0.8	2.8	4.1	6.8	8.4	4.2
Illex	0.2	0.1	0.2	0	0.6	0.5	0.2	0.3	0.2	0.1	0.1	0.1	0	1.0	1.1
Butterfish	0	0.05	0	0	0	0	0	0	0	0	0	0.05	0	0.2	0
Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Skate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiny Dog/Dogfish	1.6	1.4	0	2	0	3.3	0	1.0	1.3	1.3	0	1.9	0	0	0
Monkfish/Goosefish	0	0	0	0	0	0	0	0	0	0.9	0	0	0	0	0
Scallop	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Four Spot	0	0	0	0	0	0	0	0	0	0	0	0.7	0.9	0	0.1
Shad	0	0	0	0	0.5	0.2	0.7	0	0	0.2	0	0	0	0	0
Lobster	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0
Jonah Crab	0	0	0.05	0.05	0	0	0	0	0	0	0	0	0	0.2	0
Rock Crab	0	0	0	0	0.05	0	0	0	0	0.15	0	0	0	0	0.2
Calculated Total	68.7	93.6	148.2	212.4	66.2	94.5	102.0	59.9	198.6	95.8	21.7	19.5	69.8	202.5	125.3
Observer Total															
Reg.Sp.Bycatch (kg)	2.1	4.5	7.0	5.5	1.0	1.1	2.9	23.3	6.0	14.3	1.6	2.7	0.9	5.4	2.4
Reg.Sp.Bycatch %	3.06	4.81	4.72	2.59	1.51	1.16	2.79	38.93	3.02	14.88	7.14	13.58	1.29	2.64	1.92

*\*EXP Whiting represents an expansion made from the measured sample to the total catch (if necessary).*

**Table 8 Continued** – Catch in Weight per Tow by Species for 39 Tows with a Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V North Star, Fall 2002)

Species	Tow 16 Wt. kg.	Tow 17 Wt. kg.	Tow 18 Wt. kg.	Tow 19 Wt. kg.	Tow 20 Wt. kg.	Tow 21 Wt. kg.	Tow 22 Wt. kg.	Tow 23 Wt. kg.	Tow 24 Wt. kg.	Tow 25 Wt. kg.	Tow 26 Wt. kg.	Tow 27 Wt. kg.	Tow 28 Wt. kg.
Shrimp	0.01	0.1	0.01	0		0	0	0	0	0.01	1	0	0
Whiting/Silver Hake	40.8	163.9	98.7	21.2	121.5	79.3	96.9	37.6	23.5	34.3	68.7	47.3	47.2
EXP Whiting	40.8	163.9	98.7	21.2	121.5	79.3	96.9	37.6	23.5	34.3	68.7	47.3	47.2
Red Hake (Ling)	5.7	11.9	7.1	0.6	6.5	2.2	1.6	2.0	0.9	4.4	15.7	1.6	2.7
White Hake	0	1.3	1.3	0	3.4	1.5	0.6	1.7	0.7	1.2	2	0.4	0
Redfish	0.5	0.1	0	0		0	0	0	0	0	2.6	0	0
American Plaice	0.4	1.5	0.5	0.2	1	0.2	0.3	0.6	0.6	0.1	0.7	0.2	0.1
Witch Flounder	0	1.6	0.4	0		0	0	0	0	0	0.1	0	0
Windowpane Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellowtail Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Cod	0	0	0.6	0	0	0	0	0	0	0	0	0	0
Haddock	0	0	0	0	0	0	0	0	0	0	0	0	0
Pollock	0	0.5	0	0	0	0	0	0	0	0	0	0	0
Herring	1.2	0.8	0.9	0.4	0.5	12.8	14.4	8.6	0.2	0.7	27.2	2.6	3.2
Alewife	0.4	0.3	3.1	0.1	0.9	4.3	7.4	15.4	5.5	1.9	1.6	2.5	8.4
Illex	0.5	0.5	1.05	0	0.9	1.9	1.4	0.8	2.05	0.3	0.7	0	0.8
Butterfish	0	0	0	0	0	0	0	0.2	0.1	0.1	0.05	0.05	0.3
Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiny Dog/Dogfish	0.3	0.1	1.3	0	0	0	0.4	3.6	0	0.1	0.3	0	0
Monkfish/Goosefish	0	0.6	0	0	0	0	0	0	0	0	0	0	0
Scallop	0	0.05	0	0	0	0	0	0	0.05	0	0	0.05	0
Four Spot	0.2	0.1	0	0	0	0.1	0.9	1.0	0.1	0.1	0.4	0.7	0.3
Shad	0	0	0	0	0	0.6	0	0	0	0.1	0.3	0	0
Lobster	0	0	0	0	0	0	0	0	0	0	0	0	0
Jonah Crab	0	0	0	0	0	0	0	0	0	0	0	0	0
Rock Crab	0	2.1	0.1	0	0	0	0	0	0	0	0.1	0	0
Calculated Total	50.0	185.4	115.0	22.4	134.5	102.7	123.8	71.3	33.7	43.3	121.4	55.4	62.8
Observer Total													
Reg.Sp.Bycatch (kg)	0.9	4.5	2.8	0.2	4.4	1.6	0.9	2.2	1.3	1.3	5.4	0.6	0.1
Reg.Sp.Bycatch %	1.80	2.43	2.39	0.67	3.24	1.56	0.69	3.09	3.86	3.01	4.45	1.08	0.16

\*EXP Whiting represents an expansion made from the measured sample to the total catch (if necessary).

**Table 8 Continued** – Catch in Weight per Tow by Species for 39 Tows with a Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V North Star, Fall 2002)

Species	Tow 29 Wt. kg.	Tow 30 Wt. kg.	Tow 31 Wt. kg.	Tow 32 Wt. kg.	Tow 33 Wt. kg.	Tow 34 Wt. kg.	Tow 35 Wt. kg.	Tow 36 Wt. kg.	Tow 37 Wt. kg.	Tow 38 Wt. kg.	Tow 39 Wt. kg.	Sum	Wt./Tow	Std.Dev.
Shrimp	0	0	0	0.05	1.45	0		0	0	0.05	0.05	1.6	0.2	0.454
Whiting/Silver Hake	114.8	56.4	35.7	118.9	36.1	73.9	148	43.2	140	97.2	85.8	949.9	86.4	40.832
EXP Whiting	114.8	56.4	35.7	118.9	36.05	73.9	148	43.2	140	97.2	85.8	949.9	86.4	40.832
Red Hake (Ling)	9.4	1.1	1.2	18.8	24.4	11.2	19.6	9.5	12.2	7.2	11.4	126.0	11.5	7.260
White Hake	2.9	0.3	0	4.8	2.4	2.7	0.5	0.7	0.7	0.7	0.8	16.5	1.5	1.487
Redfish	0	0	0	0	0.2	0	0	0.05	0	0.05	0.05	0.4	0.0	0.060
American Plaice	0.7	0.1	0.5	1.2	0.3	0.3	1.6	0.3	0.5	0.3	1.3	7.0	0.6	0.502
Witch Flounder	0.2	0	0	0.1	1.1	0.1	1.3	0	0.7	0.8	1	5.3	0.5	0.504
Windowpane Flounder	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Winter Flounder	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Yellowtail Flounder	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Cod	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Haddock	0	0	0	0	0	0	0	0	0	0	0.2	0.2	0.0	0.060
Pollock	0	0.3	0	0	0	0.3	0	0	0	0	0	0.6	0.1	0.121
Herring	0.3	8	3.6	0.4	0	1.5	22	32.3	4	3.6	0.5	76.2	6.9	10.530
Alewife	1.3	1.7	1.7	3	0	0.8	1.1	0.5	0.7	1.2	1.0	12.9	1.2	0.787
Illex	1.6	0.6	0.2	1.7	1.6	1.6	2.2	0.7	0.4	0.2	0.9	11.6	1.1	0.691
Butterfish	0.1	0	0.05	0.05	0	0.2	0	0	0.05	0	0	0.5	0.0	0.063
Sculpin	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.0	0.030
Skate	0	0	0	0	0.5	0	0	0	0	0	0	0.5	0.0	0.151
Spiny Dog/Dogfish	0	0	0	0	1.5	0	0	0	0	0	0	1.5	0.1	0.437
Monkfish/Goosefish	0	0	0	0	0	0.3	0	0	0	0	0	0.3	0.0	0.075
Scallop	0.1	0.05	0	0	0	0.05	0.05	0	0	0	0	0.3	0.0	0.034
Four Spot	0.1	0.3	0.7	0	0	0.2	0	0.2	0.5	0.1	0.3	2.4	0.2	0.223
Shad	0.7	0	0	0	0	0	0	0.3	0	0	0	1.0	0.1	0.221
Lobster	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
Jonah Crab	0	0	0	0	0.5	0	0	0	0	0	0.05	0.6	0.1	0.150
Rock Crab	0	0.05	0	0	0	0	0.05	0	0.05	0	0	0.2	0.0	0.023
Calculated Total	132.2	68.9	43.7	148.9	69.9	93.1	196.4	87.8	159.8	111.4	103.4	1215.1	110.5	45.243
Observer Total														
Reg.Sp.Bycatch (kg)	3.8	0.4	0.5	6.1	4.0	3.1	3.4	1.1	1.9	1.8	3.4	29.3	2.7	1.722
Reg.Sp.Bycatch %	2.84	0.58	1.15	4.10	5.65	3.33	1.73	1.20	1.16	1.62	3.24	2.42	2.41	

\*EXP Whiting represents an expansion made from the measured sample to the total catch (if necessary).



**Table 9 Catch in Weight per Trip by Species for Six Trips with a Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V Tenacious, Fall 2002)**

Species	Trip 1 Wt. kg.	Trip 2 Wt. kg.	Trip 3 Wt. kg.	Trip 4 Wt. kg.	Trip 5 Wt. kg.	Trip 6 Wt. kg.	Sum	Wt./Trip	Std.Dev.
Shrimp	0	0	0	0	0.2	0	0.2	0.0	0.082
Whiting/Silver Hake	120.8	181.4	148	130.9	41.2	183.4	805.7	134.3	52.295
EXP Whiting	120.8	181.4	148	130.9	41.2	183.4	805.7	134.3	52.295
Red Hake (Ling)	14.6	8.9	4.9	14.2	12.3	12.85	67.6	11.3	3.722
White Hake	2	0.9	0.2	1.6	1.15	4.7	10.5	1.8	1.572
Redfish	0.1	0	0	0.15	0.05	0.05	0.4	0.1	0.058
American Plaice (Dab)	2.5	1.7	0.45	0.8	2.4	2.95	10.8	1.8	1.000
Gray Sole (Witch Flounder)	0.6	0.2	0.2	1.05	0.85	0.55	3.5	0.6	0.342
Windowpane Flounder (Sand Dab)	0	0	0	0	0	0	0.0	0.0	0.000
Winter Flounder (Blackback)	0.05	0	0	0	0	0	0.1	0.0	0.020
Yellowtail Flounder	0	0	0	0	0	0	0.0	0.0	0.000
Cod	0	0	0	0	0	0	0.0	0.0	0.000
Haddock	0.15	0	0	0	0.55	0.75	1.5	0.2	0.328
Pollock	0.15	0	0	0	0	0.1	0.3	0.0	0.066
Herring	33.4	23.1	110.4	1.1	0	3	170.9	28.5	42.347
Alewife	8.4	11.7	8.7	12.4	4.7	25.6	71.4	11.9	7.224
Illex	1.4	1.8	3.9	3.3	2.2	5.9	18.3	3.1	1.652
Butterfish	1.3	0.3	0.6	0.05	1.25	0.9	4.4	0.7	0.511
Sculpin	0.3	0	0	0	0	0	0.3	0.1	0.122
Skate	0	0	0.6	0	0	0	0.6	0.1	0.245
Spiny Dog/Dogfish	0.3	0	0	0	4.6	60.6	65.5	10.9	24.407
Monkfish/Goosefish	0.8	0	0	0	0	0	0.8	0.1	0.327
Scallop	0.1	0	0	0	0.6	0.05	0.8	0.1	0.236
Four Spot	0.15	0.8	0	0.1	0	5.6	6.7	1.1	2.221
Shad	0.1	0	0	0	0	0	0.1	0.0	0.041
Lobster	0.9	0.15	0	0	0	0	1.1	0.2	0.360
Jonah Crab	0.4	0	0	0	0.05	0	0.5	0.1	0.160
Rock Crab	0	0	0	0	0	0	0.0	0.0	0.000
Calculated Total	188.5	230.7	277.8	165.6	72.1	306.9	1241.5	206.9	84.645
Observer Total									
Reg.Sp.Bycatch (kg)	5.4	2.8	0.9	3.6	5.0	9.0	26.6	4.4	2.774
Reg.Sp.Bycatch %	2.86	1.19	0.31	2.17	6.94	2.93	2.73	2.14	

*\*EXP Whiting represents an expansion made from the measured sample to the total catch (if necessary).*

**Table 10 Catch in Weight per Trip by Species for Ten Trips with a Sweepless Raised Footrope Net with 50 mm Bar Space Grate and 2.5" Diamond Cod End (F/V North Star, Fall 2002)**

<b>Species</b>	<b>Trip 1 Wt. kg.</b>	<b>Trip 2 Wt. kg.</b>	<b>Trip 3 Wt. kg.</b>	<b>Trip 4 Wt. kg.</b>	<b>Trip 5 Wt. kg.</b>	<b>Trip 6 Wt. kg.</b>	<b>Trip 7 Wt. kg.</b>	<b>Trip 8 Wt. kg.</b>	<b>Trip 9 Wt. kg.</b>	<b>Trip 10 Wt. kg.</b>	<b>Sum</b>	<b>Wt./Trip</b>	<b>Std.Dev.</b>
<b>Shrimp</b>	1	0.05	0.8	3.47	0.12	0	1.01	0	1.5	0.1	8.1	0.8	1.080
<b>Whiting/Silver Hake</b>	424.3	135.1	328.5	213	430.4	335.3	126.5	301.4	228.8	514.2	3037.4	303.7	129.174
<b>EXP Whiting</b>	424.3	135.1	328.5	213	430.4	335.3	126.5	301.4	228.8	514.2	3037.4	303.7	129.174
<b>Red Hake (Ling)</b>	70.8	8.7	52.1	21.3	35.4	12.3	21.0	16.0	54.4	59.9	351.7	35.2	22.429
<b>White Hake</b>	8.7	1.8	12.8	6.9	4.7	7	3.9	3.6	9.9	3.4	62.6	6.3	3.426
<b>Redfish</b>	2.8	0.05	22.4	0	0.6	0	2.6	0	0.2	0.2	28.8	2.9	6.943
<b>American Plaice</b>	3.8	0.3	4.05	2.3	2.8	2	1.4	1.6	1.8	3.9	23.8	2.4	1.244
<b>Witch Flounder</b>	3.8	0	7.2	1.3	2.05	0	0.1	0.2	1.3	3.8	19.7	2.0	2.329
<b>Windowpane Flounder</b>	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
<b>Winter Flounder</b>	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
<b>Yellowtail Flounder</b>	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.000
<b>Cod</b>	0	0	0	0	0.6	0	0	0	0	0	0.6	0.1	0.190
<b>Haddock</b>	0	0	0	0	0	0	0	0	0	0.2	0.2	0.0	0.063
<b>Pollock</b>	0.7	0	0.2	0.15	0.5	0	0	0.3	0.3	0	2.2	0.2	0.240
<b>Herring</b>	1.0	6.7	14.6	38.05	4.7	36.3	28.05	17.7	1.9	62.4	211.2	21.1	19.946
<b>Alewife</b>	0.4	2.9	7	22.05	8.1	27.9	9	15.6	3.8	4.5	101.1	10.1	8.968
<b>Illex</b>	0.5	1.1	0.8	1.2	3.2	4.8	3.05	3.2	4.8	4.4	26.8	2.7	1.696
<b>Butterfish</b>	0.05	0	0	0.2	0	0.2	0.25	0.5	0.3	0.05	1.5	0.1	0.150
<b>Sculpin</b>	0	0	0	0	0	0	0	0	0	0.1	0.1	0.0	0.032
<b>Skate</b>	0	0	0	0	0	0	0	0	0.5	0	0.5	0.1	0.158
<b>Spiny Dog/Dogfish</b>	5.0	3.3	3.5	1.9	1.7	4	0.4	0	1.5	0	21.1	2.1	1.753
<b>Monkfish/Goosefish</b>	0	0	0.9	0	0.6	0	0	0	0.3	0	1.7	0.2	0.308
<b>Scallop</b>	0.2	0	0	0	0.05	0	0.05	0.2	0.05	0.05	0.6	0.1	0.069
<b>Four Spot</b>	0	0	0	1.6	0.4	2.0	0.6	2.05	0.2	1.1	7.9	0.8	0.818
<b>Shad</b>	0	0.7	0.8	0	0	0.6	0.4	0.7	0	0.3	3.5	0.4	0.334
<b>Lobster</b>	0	0	0.6	0	0	0	0	0	0	0	0.6	0.1	0.174
<b>Jonah Crab</b>	0.1	0	0	0.2	0	0	0	0	0.5	0.05	0.9	0.1	0.160
<b>Rock Crab</b>	0	0.05	0.2	0	2.4	0	0.1	0.05	0	0.1	2.9	0.3	0.745
<b>Calculated Total</b>	522.9	160.7	456.2	313.4	498.1	432.2	199.3	362.9	311.8	658.6	3916.0	391.6	152.511
<b>Observer Total</b>													
<b>Reg.Sp.Bycatch (kg)</b>	19.1	2.1	46.4	10.5	10.7	9.0	8.0	5.4	13.2	11.5	135.7	13.6	12.392
<b>Reg.Sp.Bycatch %</b>	3.65	1.31	10.17	3.33	2.15	2.08	4.01	1.47	4.22	1.74	3.41	3.47	

*\*EXP Whiting represents an expansion made from the measured sample to the total catch (if necessary).*

### **6.1.2 Impacts on the Northern Stocks of Silver Hake and Red Hake**

The 2002 SAFE report for small mesh multispecies shows that the northern stock of whiting is fully recovered, with estimated biomass at 175% of the proxy  $B_{MSY}$ . Fishing mortality (F) in the northern area is very low, and the increase in F that would be created by the grate fishery is projected to be very low as well.

Participation in the exempted grate raised footrope trawl fishery is difficult to predict. The market for whiting will be a major factor as it has been in the recent past. In 1998, there was an experimental grate fishery that permitted vessels into two categories: “landed” and “transfer at sea.” There were 52 vessels registered in the transfer at sea category, primarily bait boats, and nine vessels registered in the landed for sale category, primarily vessels selling the fish for human consumption. Because of the nature of this fishery (inshore area, limited season, maximum whiting trip limit of 7,500 pounds), it is anticipated that participation levels will be similar to those observed in the experimental fisheries during the late 1990s. Certainly, the characteristics of participating vessels are expected to be similar (small and medium-sized trawlers from ports adjacent to the GOM).

The catch rate by species and the hours fished per day from the 2001 experimental fishery and the numbers of vessels permitted in each effort category in the 1998 experimental fishery have been used to project what the proposed exempted grate fishery might land in the future (Table 11, p. 30). In 2001, a series of 71 tows over 20 fishing days were conducted under commercial conditions as part of a demonstration project with the grate sweepless trawl. Catch by species and length frequency by species were monitored for each tow. For the purposes of the projections in Table 11, the catch by species was calculated as a rate in pounds per hour towing. The fishing effort per day trip for the 2001 tows, 5.3 hours per day, was also used as it represents the current fishing practices in this fishery. For effort in hours towing per day fished in the transfer at sea fishery, 1998 sea sampling records showed an average of two hours per day.

Four scenarios were generated from these data, and the results are presented in Table 11 (p. 30). In the first scenario, the 1998 participation of 52 bait vessels and nine landed vessels was assumed. The whiting landings for the 1998 experimental fishery, 166,354 pounds, was divided by the catch rate of whiting in pounds per hour for the 2001 tows to obtain the number of hours towing to catch that amount of fish. The total hours was then divided by the sum of 5.3 hours/day fishing, times the nine landed vessels and two hours fishing, times the bait vessels to obtain the number of boat fishing days it would take to catch those whiting. If the season was 183 days, from June 1 to November 30, the fleet fished only 4% of the available days. This assumes that all vessels fished the same number of days. In this scenario, the bycatch of regulated species, at 2.5% of the total catch, would be 5,335 pounds.

The second scenario assumes 20 landed vessels and no bait vessels and assumes a fishing effort of 30% of the 183 available days. It further assumes catch rates and hours per day fishing similar to 2001 levels. Whiting landings would total just under 900,000 pounds and at 2.5%, regulated species discard would total 27,969 pounds.

The third scenario carries the same assumptions as the second scenario, except there are assumed to be 52 bait vessels and 100 landed category vessels. Under these assumptions, whiting landings would total 5,344,000 pounds and regulated species 167,000 pounds, or 2.5%. The fourth scenario assumes 52 bait vessels and no landed category vessels and would have about the same catch and bycatch as scenario 2, with 20 landed category vessels. As there were only 1,465 mt, or 3.2 million pounds of whiting landed in the northern stock area in 2001, there would be a potential for substantially increased landings if many vessels opted into the grate fishery and scenario 3, with 52 bait vessels and 100 landed category vessels bore any credibility. As market conditions have severely limited this fishery in the recent past, it is highly unlikely that there will be a significant increase in participation in this fishery. Thus, the fishing mortality rate for whiting is not expected to rise greatly and little negative effect will be experienced by the stock as it is well over the target biomass level in the northern stock area.

Red hake catch rate in the 2001 demonstration fishery was 25 pounds per hour towing, compared to 153 pounds per hour towing of whiting (Table 11, p. 30). The projected landings of red hake for a fishery similar to the 1998 fishery are 27,666 pounds. Two of the scenarios projected landings of around 150,000 pounds and the highest scenario projected 890,000 pounds. Landings of red hake in 2001 were 568 mt, or 1.25 million pounds. Thus, all but the unrealistically high scenario (scenario 3) projected less than 12% of the total landings in the northern stock area. Given the healthy status of red hake in the northern stock area, there is little chance that the grate fishery will impact this stock.

Based on surplus production analyses presented in SAW 32, the MSY of the northern stock of whiting may be up to 45,000 mt, with an 80% confidence interval of roughly 39,000-52,000 mt (2001 SAFE Report). The 2002 SAFE Report indicates that landings of whiting from the northern stock averaged about 3,300 mt from 1999-2001. The establishment of the exempted grate raised footrope trawl fishery will increase opportunities to catch whiting in the northern stock area and is expected to result in a somewhat increased level of whiting landings from the northern area. Even under the most liberal effort-increase scenario presented in Table 11, however, whiting catch from this fishery is expected to be less than 5.5 million pounds, or 2,500 metric tons. The establishment of this fishery, therefore, is not expected to increase landings to levels anywhere near the MSY estimate for the northern stock, even when factoring in the potential for effort on the northern stock of whiting to increase. Potential increases in effort are further addressed below.

### **6.1.3 Potential for Increased Effort in the Grate Raised Footrope Trawl Fishery**

The whiting fishery over the last decade in Maine has consisted of three main categories of fishing activity. The primary category lands its catch for sale as food, and this category accounts for the majority of whiting caught. The other two categories sell their catch as bait. The larger of these two fisheries consists of vessels conducting one hour tows in the morning on their way out to fish for bluefin tuna. They catch enough fish for bait for themselves and sell boxes of bait to possibly several other tuna fishermen. This fishery represented the greatest participation in terms of numbers of vessels, but caught a minor amount of the total catch of whiting as they only towed for an hour each day.

The remaining fishery is for lobster bait. There were only a few vessels that participated in this fishery in 1996, and they were discontinuous in their effort, but they tended to fish longer hours than the tuna bait fishers when they did fish. The lobster bait fishermen tended to be connected with a wharf that catered to lobstermen and when the wharf owner could not obtain herring for lobster bait, they would try to meet the demand by fishing in the whiting fishery. It is possible that this activity could increase with the increased pressure on lobsters and the loss of opportunity in the groundfish fishery. This increased activity could represent increased catch of whiting during times when the herring supply is interrupted, or depending on price, this increased activity could develop into a competitive supply for bait for the lobster fishery. This is not foreseen as a probability, but should not be discounted as a possible development.

Another reason that effort may increase in this fishery is related to increasing restrictions in the large-mesh groundfish fishery and the possibility that some vessels may redirect their groundfish effort onto whiting. Allocated Multispecies days-at-sea (DAS) were recently reduced in an interim action resulting from the Framework 33 lawsuit and may be reduced again in Amendment 13 to the Northeast Multispecies FMP. DAS allocations for many vessels may become so low that groundfishing is no longer a viable option for these vessels. Because whiting is an open access fishery, it is likely that some of these vessels will direct more effort towards whiting. The nature of the proposed grate raised footrope trawl fishery (area, gear requirements, possession limit) suggests that the majority of vessels who redirect effort at whiting in this particular fishery will be smaller and medium-sized vessels homeported in the communities adjacent to the GOM (and mostly in the state of Maine).

As discussed above, there is likely to be an increase in effort in the exempted grate raised footrope trawl fishery as there is essentially no fishery now. How large an increase is greatly dependent on the establishment of a reliable market for the product. The market that fueled the grate experimental fishery in the mid-90's – the Spanish market – is no longer available to the fishery and targets a fish that is too small. There may be an increase in effort in the bait market seasonally for both bluefin tuna fishing bait and lobster bait. In the 1998 experimental fishery, there were 52 vessels permitted under the transfer at sea category, which was primarily for the bluefin tuna bait vessels. The lobster fishery has a great demand for bait, and when herring is not readily available, the whiting grate fishery is likely to supply some of the demand.

Scenarios for the landings of whiting based on demonstrated landings by permit category levels in 1998 and on species distribution in the 2001 experimental fishery are shown in Table 11. Increasing the number of vessels in the various categories and expanding the catch by species (assuming the same catch rate for each category) shows catch levels for all species to be very low compared to total landings in the commercial fisheries for these species.

**Table 11 Catch and Bycatch Scenarios Based on Catch/Hour in 2001 ME Commercial Trials and Hours Fished/Day for Both Transfer at Sea and Landed Categories in the 1998 Experimental Grate Fishery**

Species	Catch Scenarios 1998 Permits					
	Mean Catch Rate (Lbs/Hr)	Catch % by Wt.	Bait 52 Food 9 Days 4%	Bait 0 Food 20 Days 30%	Bait 52 Food 100 Days 30%	Bait 52 Food 0 Days 30%
Shrimp	0.000	0.00	0	0	0	0
Whiting/Silver Hake	153.489	80.56	170,466	893,632	5,344,520	876,358
EXP Whiting	153.489	80.56	170,466	893,632	5,344,520	876,358
Red Hake (Ling)	24.911	13.07	27,666	145,034	867,398	142,230
White Hake	2.881	1.51	3,200	16,775	100,325	16,451
Redfish	0.117	0.06	130	684	4,088	670
American Plaice (Dab)	1.107	0.58	1,229	6,443	38,531	6,318
Gray Sole (Witch Flounder)	0.682	0.36	757	3,970	23,745	3,893
Windowpane Flounder	0.000	0.00	0	0	0	0
Winter Flounder (Blackback)	0.011	0.01	13	66	394	65
Yellowtail Flounder	0.000	0.00	0	0	0	0
Cod	0.000	0.00	0	0	0	0
Haddock	0.006	0.00	6	32	194	32
Pollock	0.018	0.01	20	105	626	103
Gulf Stream Flounder	0.000	0.00	0	0	0	0
Ocean Pout	0.000	0.00	0	0	0	0
Mackerel	0.035	0.02	38	202	1,205	198
Herring	1.543	0.81	1,714	8,985	53,738	8,812
Alewife	1.473	0.77	1,635	8,574	51,275	8,408
Cusk (Spotted)	0.000	0.00	0	0	0	0
Monkfish/Goosefish	0.115	0.06	127	667	3,987	654
Sculpin	0.266	0.14	296	1,550	9,269	1,520
Spiny Dog/Dogfish	1.428	0.75	1,586	8,312	49,710	8,151
EXP Dogfish	1.428	0.75	1,586	8,312	49,710	8,151
Butterfish	0.028	0.01	31	162	971	159
Loligo Squid	0.000	0.00	0	0	0	0
Illex	0.989	0.52	1,098	5,759	34,440	5,647
Octopus	0.000	0.00	0	0	0	0
Lobster	0.000	0.00	0	0	0	0
Jonah Crab	0.000	0.00	0	0	0	0
Rock Crab	0.000	0.00	0	0	0	0
Total Catch (Kg)	190.52		211,598	1,109,261	6,634,126	1,087,819
Whiting/Silver Hake (Kg)	153.49		170,466	893,632	5,344,520	876,358
Bycatch Reg. Sp. (Kg)	4.82		5,355	28,074	167,902	27,531
Percent Bycatch Reg. Sp.	2.53		2.53	2.53	2.53	2.53
	Whiting 98 VTR		166,354			
Mean Hrs/Day Fished = 5.3025 (2001 Commercial Trials)						
Projected Days Avail 183 (Jun – Nov)						
Projected % Days Fished 50						
Bait Hrs/Day = 2 (1998 Sea Sampling)						

\*EXP Whiting represents an expansion made from the measured sample to the total catch (if necessary).

## **6.1.4 Impacts on Other Species**

### **6.1.4.1 General**

The grate raised footrope net has been shown to catch less than 5% by weight of the regulated species in several trials. While the mean catch rate is low for each species, there have been instances of higher catch rates on several individual tows. Species that have registered higher rates are redfish, American plaice, and white hake. American plaice bycatch was more of an issue prior to the removal of the sweep from the net. With the footrope riding 24-inches or more off the bottom, few flatfish of any species enter the net.

The catches of white hake and redfish depend on their size frequency and relative abundance to whiting at particular locations. Redfish tend to prefer different bottom types than whiting, being more frequently found over rocky, gravelly mounds rather than flat mud bottom. There is a reasonable separation of these two species by bottom type, and when fishermen are targeting whiting, they seldom venture into the rockier substrate and thus avoid most interactions with redfish. On those occasions where the patchiness of bottom type places redfish in the path of a sweepless grate net, some bycatch of redfish will occur if the size frequency is right to pass through the grate and be retained by the cod end mesh. The overall level of bycatch of redfish is expected to be low. The catch scenarios based on 2001 species distributions and 1998 catch rates projected a catch of 670 kg (1,477 pounds) of redfish per million kg (2,204,620 pounds) of fish caught (Table 11, p. 30).

Of the regulated species in the group used to calculate the percent bycatch, the most abundant species in the catch is white hake according to the catch scenarios in Table 11 (p. 30). For every million kg (2,204,620 pounds) of catch, 16,451 kg (36,268 pounds) of white hake would be taken. Given the nature of the fish, probably few would survive when returned to the sea. The whiting fishery has ranged from 12,000 pounds to 3.6 million pounds per year over the last three decades. This would represent a mortality of between 225 kg (496 pounds) and 67,577 kg (148,982 pounds) of white hake if the ratios in Table 11 are used.

American plaice and gray sole are the only other two regulated species that would be affected by the scenarios presented in Table 11 (p. 30). American plaice would sustain a bycatch of 6,318 kg (13,929 pounds), and gray sole a bycatch of 3,893 kg (8,583 pounds) per million kg (2,204,620 pounds) of catch in the fishery. For the range of whiting catches, American plaice would likely sustain a bycatch between 87 kg (192 pounds) and 25,954 kg (57,219 pounds), and gray sole a bycatch between 53 kg (117 pounds) and 15,994 kg (35,261 pounds).

Of the other species for which management plans exist, herring and spiny dogfish exhibit some level of bycatch in the scenarios presented in Table 11 (p. 30). Herring bycatch would be 8,408 kg (18,536 pounds), and dogfish bycatch would be 8,151 kg (17,970 pounds) for every million kg (2,204,620 pounds) caught in the fishery. While herring could be kept, dogfish are among the proposed prohibited species and would have to be discarded. The upper size range of the dogfish caught is curtailed by the 50 mm grate. Thus, the weight of the catch is represented by an average fish length 39 cm; however, the length frequency shows two modes at around 30 cm and

65 cm (see Appendix I for length frequencies). The largest dogfish caught in the 2001 commercial trials was 74 cm (see Appendix I).

#### **6.1.4.2 Groundfish PDT Comments**

The Groundfish PDT reviewed the proposed specifications for this fishery and provided recommendations to the Groundfish Committee and the Council that specifically address the potential for this fishery to impact other (large-mesh) multispecies stocks. Relevant Groundfish PDT comments and recommendations are summarized below.

- Based on the experiment, this fishery is likely to primarily take juvenile plaice, redfish, witch flounder and white hake. The amount of bycatch depends in large measure on the amount of effort in the fishery. In terms of weight, data presented in this framework document estimate the expected bycatch as less than 5% of the total catch. Using data provided by ME DMR from the 2002 experimental fishery, the numbers of juvenile fish that may be caught based on effort scenario 2 (5,822 hours to assumed tows, see Table 11, p. 30), could increase the catch of juvenile plaice by 1.5 – 7%, and catch of juvenile witch flounder could increase less than 0.5%. While catch at age estimates are not available to make these comparisons for redfish and white hake, the Groundfish PDT expects bycatch of these species to be minimal.
- 1996 and 1999 sea sampling data (experimental grate fishery) show that regulated ground fish bycatch percentages (percent of total catch, in weight) declined from July to August and then increased in the fall. The total bycatch (weight) remained fairly constant. This suggests the bycatch percentages observed in the October/November experiments are not likely to be exceeded during the months of July through September. These same data, however, show that May 1996 bycatch percentages were high, and bycatch percentages are not available for June.
- Whiting grate experiments show that bycatch should not be a problem in Area 2B in October/November (the same period as the experiment was conducted). There are similarities (species composition, hydrography, habitat, current flow, bottom topography) between Area 2A and 2B that suggest bycatch in area 2A may be similar to that observed in the experiments conducted in Area 2B. As long as monitoring of the fishery is conducted, allowing the fishery in Area 2A does not concern the PDT even though experimental results are not available for this area.
- Based on the 1996 and 1999 sea sampling observations of the whiting fishery, extending the season to July should not be a concern. The PDT is concerned that extending the season into June may result in excessive groundfish bycatch. While there is no sampling in this month, high bycatch rates were observed in May in the past. In addition, the timing of whiting migration inshore (that is, a lack of availability of whiting in the proposed areas) may lead to high bycatch rates.
- The Groundfish PDT suggests monitoring and periodic review of market conditions, actual effort and bycatch experienced. As groundfish stocks increase, effort adjusts in the whiting fishery, demand for whiting bait in the lobster fishery, distribution and resulting bycatch levels may change. In addition, as previously suggested, experiments should be conducted in Area 1 before expanding the fishery into this area.



## **6.1.5 Impacts on Endangered and Threatened Species and Other Marine Mammals**

### **6.1.5.1 Description and Status of Threatened and Endangered and Other Species**

Volume I, Section E.7.2.4 of Amendment 12 to the Northeast Multispecies Fishery Management Plan (whiting, red hake, and offshore hake) described the threatened and endangered species and other marine mammals that inhabit the whiting management unit and discussed their potential interaction with the fishery, as well as the impacts of the whiting management measures in that action. Species of particular concern at this time are discussed separately below. Their status and that of other threatened and endangered species, including species descriptions and summary information on their biology, was provided in June 2001 in the Biological Opinion for the Northeast Multispecies Plan. That information is incorporated herein by reference. The impacts of the most recent changes to the management measures for small mesh multispecies were discussed in Framework Adjustments 32, 35 and 37.

The status of the relevant marine mammal stocks also was updated in the sixth of the series, *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2001* (Waring *et al.* 2001). The report contains updated assessments for Atlantic strategic stocks and also includes those Atlantic stocks for which significant new information was available. A strategic stock is one listed as threatened or endangered under the Endangered Species Act, designated as depleted under the Marine Mammal Protection Act, or for which human-caused mortality and serious injury exceed the potential biological removal (PBR) level calculated for the stock. The report lists PBR levels and constitutes the most recent information on marine mammal fishery-related serious injury and mortality for fisheries managed by the NEFMC.

Information on sea turtle status can be found in a number of published documents, including several sea turtle status reviews: NMFS and the U. S. Fish and Wildlife Service (1995); Turtle Expert Working Group (1998 and 2000); and biological reports from the U. S. Fish and Wildlife Service (1997). Additional information is also found in the recovery plans for Kemp's ridley (USFWS and NMFS 1992a), leatherback (NMFS and USFWS 1992b), Atlantic green (NMFS and USFWS 1998), and loggerhead sea turtles (NMFS and USFWS 1998).

#### **6.1.5.1.1 Threatened and Endangered Species of Concern**

*North Atlantic Right Whales* – The North Atlantic right whale population, which numbers less than 300 animals ranges from wintering and calving grounds in the southeastern U.S. to summer feeding grounds in New England, the northern Bay of Fundy and the Scotian Shelf. New England waters are a primary feeding ground. Principal prey items include copepods in the genera *Calanus* and *Pseudocalanus*, although they may feed on similar-sized zooplankton and other organisms. Feeding efficiency may depend on the ability of whales to find and exploit dense zooplankton patches. Sources of mortality include ship strikes and entanglement in fixed fishing gear. Considered to be the most endangered whale in the world, the current death rate far exceeds the birth rate in the western North Atlantic population. An increasing calving interval, the relatively large number of female right whales killed and human-related mortality make the probability of right whale extinction in the next 100 years very high (NMFS 2000).

Protection for the right whale is provided principally through the Atlantic Large Whale Take Reduction Plan (ALWTRP) first implemented in 1997. A final rule was published in the *Federal Register* on February 16, 1999 which closes critical habitats during right whale season to lobster and gillnet gear, prohibits certain fishing practices, identifies gear modifications, establishes a network to respond to entangled whales, funds gear research to develop technological solutions to reduce entanglements, and improves outreach efforts to inform fishermen about the problems of right whale entanglements and seeks their input on technical solutions.

The conclusions in the June, 2001 Biological Opinion referred to above stated that the Northeast multispecies fishery is likely to jeopardize the continued existence of the North Atlantic right whale. The Opinion required NMFS to implement a set of Reasonable and Prudent Alternatives (RPAs) to remedy the jeopardy finding. The RPAs called for significant further action under the ALWTRP. Specifically, there were three key regulatory changes: 1) new gear modifications; 2) implementation of a Dynamic Area Management system (DAM) of short-term closures to protect unexpected concentrations of right whales; and 3) establishment of a Seasonal Area Management system (SAM) of additional gear modifications to protect known seasonal concentrations of right whales. All of the above changes have now been implemented. The new gear modifications (67 FR 1300-1314) became effective February 11, 2002. NMFS established the criteria for implementing the DAM restrictions (67 FR 1133-1142) that became effective February 8, 2002. NMFS also published the interim final regulations for the SAM program (67 FR 1142-1160) that became effective on March 1, 2002.

Several Dynamic Area Management actions have been triggered in the last two years and have affected the multispecies fishery. Because small mesh mobile gear, such as that used in the whiting fishery, has not been implicated in large whale entanglements it has not been subject to any Take Reduction Plan measures. Furthermore, while right, humpback and other endangered whales, as well as a number of marine mammal species inhabit the areas considered in this action, takes have not been documented in this fishery (North Atlantic bottom trawl), according to the most recent *List of Fisheries* published by NMFS on January 17, 2002.

Although bottom trawl fisheries in other regions may take large whales and recognizing that observer coverage in the whiting fishery overall has been low, the available information at this writing indicates that encounters or serious injury to these species are rare and generally not associated with small mesh multispecies gear in the Northeast. The significant number of observed sea trials conducted to test the use of a whiting grate raised footrope trawl and reviewed in this framework document further supports the conclusion that large whale interactions with this gear type are highly unlikely.

*Harbor Porpoise* – The Gulf of Maine/Bay of Fundy stock of harbor porpoise range from North Carolina to Canadian Atlantic waters, but generally move northward and concentrate in the Bay of Fundy in the summer. During the October-December and April-June periods, they are widely disbursed from New Jersey to Maine with lower densities at the extremes. The most common cetacean species caught in commercial fishing gear in the Northeast, this species is the subject of a Take Reduction Plan (TRP) implemented by NMFS in December 2, 1998. To reduce takes, the plan targets multispecies gillnet, as well as other Atlantic coastal fixed gear fisheries. TRP requirements include the use of acoustic deterrents (“pingers”) on nets according to specified

protocols, time/area closures and gear modifications. Takes in small mesh multispecies gear appear to be very rare and have not been documented.

*Sea Turtles* – The possibility of encounters with small mesh otter trawls (the predominant gear type in this fishery) exists because of the overlap of the prosecution of the fishery with the period when turtles are most likely to be present in the action area, from July through September. Observer coverage during the gear trials, however, documented no takes of threatened, endangered or other protected species, including sea turtles.

Overall concerns that turtles become entangled in mesh greater than or equal to 4-inches, such as used in the summer flounder and other fisheries, are addressed by the fact that the framework proposes a minimum mesh size of 2.5-inches, and vessels generally do not target whiting with mesh greater than 3-inches. In addition, the trawl will have a Nordmore-style grate mounted in the extension of the net with spacing between the bars of no more than 50 mm, an element that will also serve to reduce the risk of entanglement in this gear type.

The June 2001 Biological Opinion for the Northeast Multispecies FMP determined that there were no observed takes of sea turtles in the multispecies fishery, but also noted the potential for interactions exists, again, based on the overlap of the fishery and takes in bottom and mid-water trawl gear. The configuration of the grate raised footrope trawl, and the 50 mm bar spacing in particular, are designed to reduce the bycatch of groundfish. Given the size of adult turtles in the action area, the assumption can be made that the gear configuration will also serve to reduce any potential for takes of sea turtles in this fishery.

*Shortnose Sturgeon* – The shortnose sturgeon is a benthic fish that mainly occupies the deep channel sections of several Atlantic coast rivers. They can be found in most major river systems from St. John's River, Florida to the Saint John River in New Brunswick, Canada. The species is considered truly anadromous in the southern portion of its range (*i.e.*, south of Chesapeake Bay). However, they spend the majority of their life history within the fresh water sections of the northern rivers with only occasional forays into salt water, and are thus considered to be “freshwater amphidromous”. While they may be found in the rivers adjacent to the action area, takes are likely infrequent or rare based on the habits and distribution described above.

#### **6.1.5.1.2 Other Protected Species**

*Atlantic Salmon* – The capture of Atlantic salmon has occurred in U.S. commercial fisheries and by research/survey vessels. However, none have been documented after 1992. Whiting landings have not been recorded for the areas adjacent to the Atlantic salmon rivers, nor have NMFS fishery research surveys documented whiting in the nearshore regions adjacent to the Atlantic salmon rivers. Therefore, there appears to be adequate separation between the two species making it highly unlikely that the proposed action will affect Atlantic salmon.

*Barndoor Skate* – Barndoor skate occurs from Newfoundland, the Gulf of St. Lawrence, off Nova Scotia, the Gulf of Maine, and the northern sections of the Mid-Atlantic Bight down to North Carolina. It is one of the largest skates in the Northwest Atlantic and is presumed to be a long-lived, slow growing species. Barndoor skates inhabit mud and sand/gravel bottoms along

the continental shelf, generally at depths greater than 150 meters. They are believed to feed on benthic invertebrates and fishes (Bigelow and Schroeder 1953).

The abundance of barndoor skate declined continuously through the 1960's. Since 1990, their abundance has increased slightly on Georges Bank, the western Scotian shelf, and in Southern New England, although the current NEFSC autumn survey biomass index is less than 5% of the peak observed in 1963. The species was identified as an overfished species at the 30<sup>th</sup> Stock Assessment Workshop (NEFSC 2000). Skates are sensitive to overutilization generally because of their limited reproductive capacity, and are relatively slow-growing, long-lived, and late maturing.

Barndoor skate is caught as a bycatch species in the offshore otter trawl and sink gillnet fisheries that target multispecies, monkfish, and spiny dogfish. When landed, they are used in the wing fishery. Takes could occur in the whiting fishery. Rebuilding of this species is major goal of the Council's Draft Skate FMP currently under development.

Barndoor skate is a candidate species under the ESA as a result of two petitions to list the species as endangered or threatened that were received in March and April 1999. In September 2002, the agency declared the petitioned action to be not warranted at this time because of the recent increases in abundance and biomass observed during NMFS surveys, the expansion of known areas where barndoor skate have been encountered, increases in size range, and the increase in the number of small size barndoor skate collected. The species, however will remain on the NMFS list of candidate species. Interactions with the proposed fishery appear to be unlikely given the gear restrictions under consideration.

#### **6.1.5.2 Impacts of the Framework 38 Management Measures to Protected Species**

The overall impacts of the whiting management measures were fully analyzed in Amendment 12 to the Northeast Multispecies FMP and were considered to have negligible impacts on protected species, including those that are threatened and endangered. The proposed action should not change that determination given the lack of evidence of interactions with mobile fishing gear in the multispecies fishery in the Northeast. The whiting fishery in general and the grate fishery (with the proposed season, gear modifications and incidental catch restrictions) in particular appear to represent a low level of risk to endangered, threatened, and other protected species.

Since increased fishing opportunities are proposed, it is possible that the measures in this action could result in effort shifts from fisheries that are more likely to have interactions with protected species than the whiting fishery, resulting in potentially fewer risks to cetaceans, pinnipeds, and sea turtles. Again, however, and as discussed in Amendment 12, effort shifts depend largely on market conditions, restrictions in other fisheries and other factors that affect vessels owners and operators and cannot be predicted with any degree of certainty. Other benefits to protected species could indirectly accrue as a result of increased observer coverage in the inshore Gulf of Maine and from a forage base perspective, given the significant level of stock rebuilding is now occurring under this FMP.

### **6.1.5.3 Conclusions**

As discussed previously, the operation of the whiting grate fishery may affect endangered and threatened species and other marine mammals, given the overlap of the range of these species and the prosecution of the fishery in the Gulf of Maine.

Right whales, harbor porpoise and sea turtles are species of concern because of low stock status in the case of right whales, for porpoise because of high levels of bycatch in the multispecies fishery and in the case of turtles, because of the cumulative impacts of interactions in a number of fisheries as well as other human impacts. Both cetacean species are managed under established Take Reduction Plans that were discussed here, in Amendment 12 and subsequent frameworks. Additional measures implemented in 2002 to reduce the overall risk of entanglement represented by the multispecies fishery apply to the sink gillnet fishery and other fixed gears that have been linked to interactions. However, to date, few if any interactions have occurred in the small mesh whiting fishery. Also, given the location of this fishery, it is unlikely that the measures proposed in Framework 38 will affect right whale critical habitat or right whale utilization of those areas.

NMFS has previously concluded that measures approved for the whiting fishery fall within the scope of consultations on prior Northeast Multispecies FMP actions for small mesh multispecies. The Council proposes that none of the measures discussed in this document is expected to result in the addition of adverse impacts which would change the determinations in those consultations. The Council further concludes that actions contained in Framework 38 are not likely to jeopardize the continued existence of any endangered and threatened species, or affect critical habitat.

## **6.2 IMPACTS ON HABITAT, INCLUDING EFH ASSESSMENT**

A comprehensive description of the physical environment and assessment of the impacts to habitat resulting from fishing practices is presented in Amendment 11 to the Northeast Multispecies FMP. The alternatives and actions proposed in this framework adjustment will not increase any adverse impacts on essential fish habitat (EFH) resulting from fishing activity.

Modifications of fishing gear, reducing the weight of gear or the amount of contact between the gear and substrate, is one mechanism known to reduce the adverse impacts of fishing on EFH (NEFMC 1999). Section 4.5 of Amendment 11 describes the potential habitat impacts associated with a raised footrope trawl, concluding that the impacts from this gear configuration may be less than traditional otter trawl configurations due to the reduced direct contact with the sea floor. Measures that do not directly reduce fishing effort, but rather manage how the effort is distributed among the fishing industry or the size class of fish targeted by the industry, such as mesh size restrictions, minimum fish size restrictions, bycatch reduction methods, or monitoring programs would not be expected to have a direct effect on the habitat of the region.

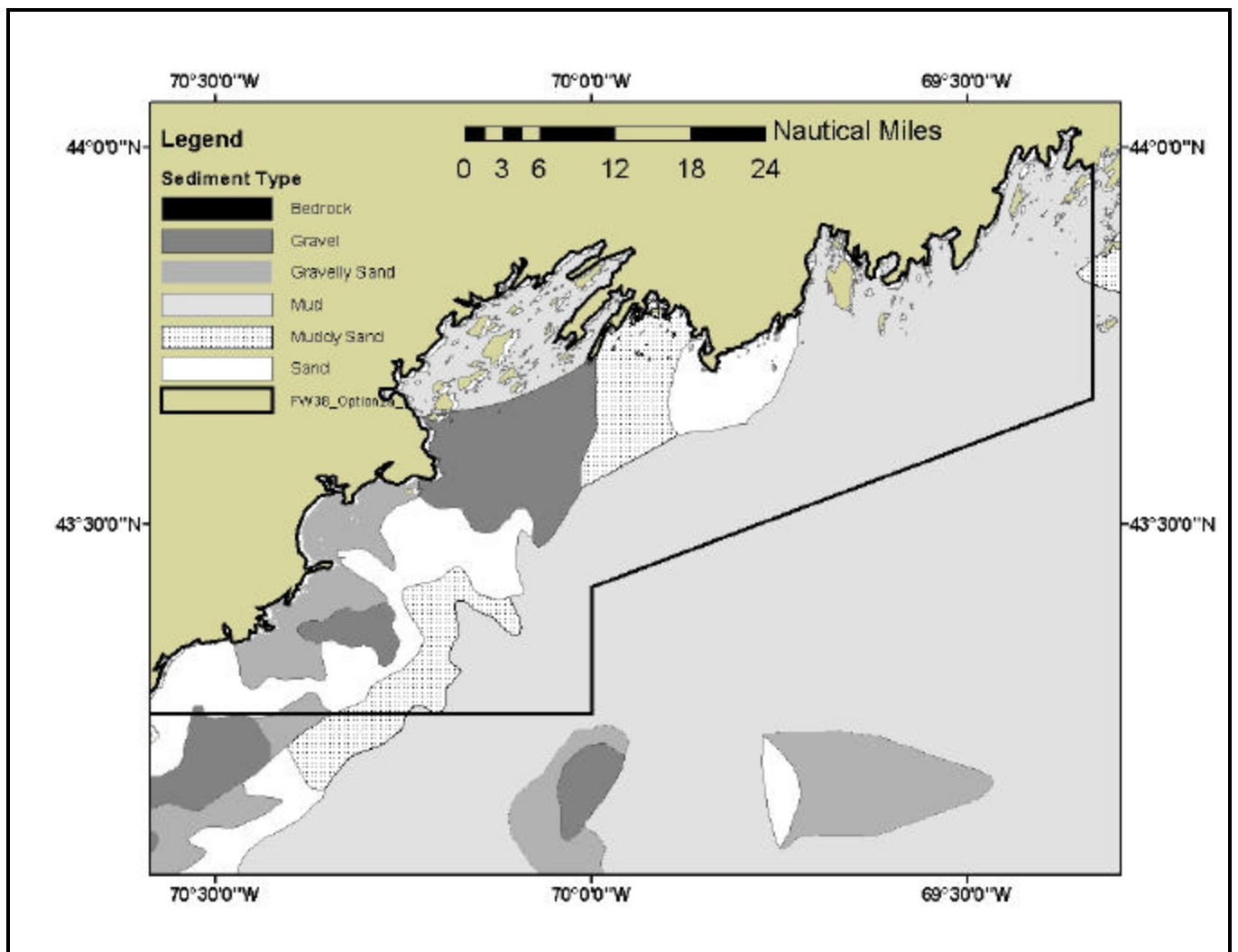
### **6.2.1 Grate Raised Footrope Trawl Fishery Season**

The grate fishery season is proposed to begin on July 1 and end on November 30 of each year. This measure would not affect the overall amount of fishing effort in the region, especially that of bottom-tending mobile fishing gear, and would not be expected to have any effect on essential fish habitat.

### **6.2.2 Grate Raised Footrope Trawl Fishery Area**

This measure proposes to allow the raised footrope trawl fishery only within the constraints of the area described in Section 3.2 of this document. This area is currently open to all types of bottom-tending mobile fishing gear, except during the groundfish “rolling closures.” Bottom sedimentation for the effected area is included in Figure 3. The area is predominately made up of mud, with a more complex substrate of sand, muddy sand, gravel and gravelly sand closer to shore, particularly on the western side of the proposed area.

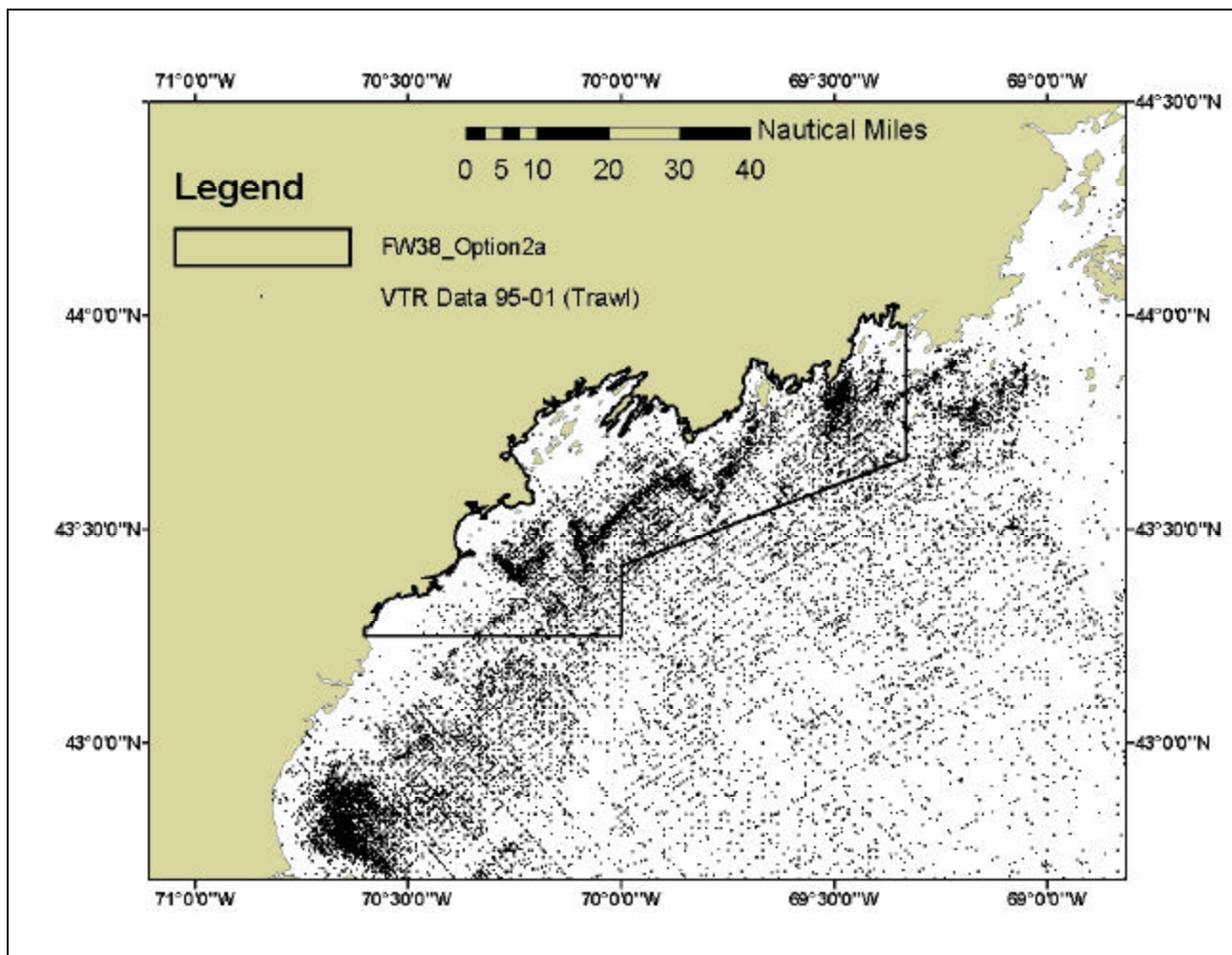
**Figure 3 Bottom Sedimentation for Areas Potentially Impacted by Proposed Grate Fishery Area (data from Poppe *et al.* 1989)**



This measure would not affect the overall amount of fishing effort in the region, especially that of bottom-tending mobile fishing gear. Ambient levels of otter trawl fishing in the affected area are included in Figure 4.

Table 12 shows that the proposed area for the grate fishery has a higher density of otter trawl activity than that found over the entire northwest Atlantic fishing grounds and throughout the Gulf of Maine Regulated Mesh Area.

**Figure 4 Otter Trawl Activity in Proposed Grate Fishery Area (data from VTR 1995 – 2001)**



*Option 2A represents the proposed action.*

**Table 12 Otter Trawl Gear Activity Levels (data from VTR 1995 – 2001)**

	Number Trips per year	Avg Days Absent per year	Area (sq nm)	Annual Days Absent per sq nm
<b>FW38 Option 2A (Proposed Action)</b>	3,053.7	1,638.6	1,045.4	<b>1.567</b>
<b>Gulf of Maine Regulated Mesh Area</b>	13,087.0	13,818.6	15,825.3	<b>0.873</b>
<b>Northwest Atlantic</b>	32,289.9	51,669.1	69,486.0	<b>0.744</b>

Due to the relatively high levels of activity inside these areas, especially when combined with the nature of the fishing gear used in this raised footrope trawl fishery, this option is not expected to have any effect on essential fish habitat in this region.



### **6.2.3 Grate Raised Footrope Trawl Gear Specifications**

This measure proposes a set of specifications for the fishing gear allowed to be used in the raised footrope trawl fishery. Due to the nature of the fishing gear used in the raised footrope trawl fishery, this measure would not be expected to have any effect on essential fish habitat.

### **6.2.4 Allowable Landings and Incidental Catch Restrictions**

Implementation of this measure would not be expected to have any effect on the habitat of the region.

### **6.2.5 Fishery Review and Monitoring**

Implementation of this measure would not be expected to have any effect on the habitat of the region.

### **6.2.6 Alternatives to the Proposed Action**

Alternatives under consideration for the grate raised footrope trawl fishery area, season, and other aspects were analyzed in the Draft Framework 38 document that the Council reviewed at its January 28-30, 2003 meeting. The Draft Framework 38 document should be referenced for the analysis of these alternatives.

The other alternative to the proposed action is the no action alternative. Under the no action alternative, no exempted grate fishery is created. Implementation of this measure would not be expected to have any effect on the habitat of the region.

### **6.2.7 EFH Assessment**

This essential fish habitat (EFH) assessment is provided pursuant to 50 CFR 600.920 of the EFH Interim Final Rule to initiate EFH consultation with the National Marine Fisheries Service.

#### **6.2.7.1 Description of the Proposed Action**

See Section 3.0 of this document for a description of the action proposed in this framework adjustment.

The activity described by this action, fishing for whiting and red hake in the proposed exempted grate raised footrope trawl fishery in the Gulf of Maine, occurs across designated EFH for most New England and Mid-Atlantic managed species. Offshore hake is the only species managed in New England that does not have EFH that overlaps with the affected area of this action (see Amendments 11 and 12 to the Multispecies FMP). All other species in New England managed under the Multispecies, Sea Scallop, Monkfish, Herring, Red Crab, Salmon, and proposed Skate FMP have EFH designations within the affected area of this action. Ocean Quahog and Tilefish are the only two Mid-Atlantic managed species that do not have EFH designations that overlap with the affected area of this action. All other species in the Mid-Atlantic managed under the Summer Flounder, Scup, Black Sea Bass FMP; Dogfish FMP (jointly managed with the NE

Council); Surfclam and Ocean Quahog FMP; Squid, Mackerel, Butterfish FMP; and the Bluefish FMP have EFH designations within the affected area of this action. EFH designations for the species managed under the NMFS Highly Pelagic Species FMP also overlap with the affected area of this action.

#### **6.2.7.2 Analysis of the Effects of the Proposed Action**

This action proposes to create an exempted whiting fishery in the Gulf of Maine using a grate raised footrope trawl.

This framework does not propose to increase current levels of fishing activity in the U.S. EEZ. None of the proposed actions will cause additional adverse impacts on the EFH of any managed species relative to the baseline conditions established under Amendments 11 and 12, and Framework Adjustment 35.

#### **6.2.7.3 Conclusions**

The result of this action has effects on EFH because it involves fishing activity, however the impacts have been determined to be less than substantial. Furthermore, this framework action does not increase any of the potentially adverse effects as established in the baseline condition under Amendment 12 and Framework 35. Because there are less than substantial adverse impacts associated with this action, an abbreviated consultation is all that is required.

#### **6.2.7.4 Proposed Mitigation**

No further mitigation is practicable or necessary.

### **6.3 CUMULATIVE EFFECTS**

Cumulative effects result from the proposed action's incremental impacts when these impacts are added to the impacts of other past, present, and reasonably foreseeable future actions. These impacts can result from individually minor but collectively significant actions taking place over a period of time.

In 1997, the Council on Environmental Quality (CEQ) published a handbook entitled, *Considering Cumulative Effects Under the National Environmental Policy Act*. The CEQ identified the following eight principles of cumulative effects analysis, which will be considered in the discussion of the cumulative effects of this proposed action:

1. Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions.
2. Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, non-federal, or private) has taken the actions.
3. Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.

4. It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.
5. Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.
6. Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.
7. Cumulative effects may last for many years beyond the life of the action that caused the effects.
8. Each affected resource, ecosystem, and human community must be analyzed in terms of its capacity to accumulate additional effects, based on its own time and space parameters.

This framework adjustment builds on actions taken in Amendment 12, Framework 32, Framework 35, and Framework 37 to the Northeast Multispecies FMP. Based on the information and analyses presented in these documents, this framework document, and the 2002 SAFE Report for Small Mesh Multispecies, there are no significant cumulative effects associated with the proposed action.

Cumulative effects, as they relate to small mesh multispecies, are generally reflected in the present status of the small mesh multispecies resources, the biological impacts of the proposed action, and the rebuilding program for small mesh multispecies implemented in Amendment 12. The action in Amendment 12 was intended to end overfishing and rebuild small mesh multispecies stocks to their target levels. Recent information indicates that the measures in Amendment 12 were effective in rebuilding small mesh multispecies stocks so that the action proposed in this framework adjustment is possible. The effects of Framework 38 are not expected to jeopardize the success of the Amendment 12 measures. Framework 38, in fact, allows for greater opportunities to prosecute small mesh multispecies resources in the northern area, where the stock can support significant increases. Future actions for small mesh multispecies will build on the action in this framework adjustment as well as past actions for small mesh multispecies. Foreseeable future actions include those that provide access to the small mesh multispecies resources to continue to achieve the objectives of the whiting management program in Amendment 12.

Since it is not practical to analyze the cumulative effects of this action on the universe, the most meaningful and relevant considerations for this framework adjustment include:

- the direct effects of the proposed action on the small mesh multispecies resources;
- the indirect effects of the proposed action on other fishery resources; and
- the indirect effects of management measures in other fisheries on the small mesh multispecies resources.

The direct effects of the proposed action on the small mesh multispecies resources is discussed in Section 6.1.2 of this document (p. 27). The 2002 SAFE report for silver hake shows that the northern stock is fully recovered, with estimated biomass at 175% of the proxy  $B_{MSY}$ . Fishing mortality (F) in the northern area is very low, and the increase in F that would be created by the grate fishery is projected to be very low as well. Even under the most liberal effort-increase scenario presented in Table 11 of this document (p. 30), whiting catch from this fishery is

expected to be less than 5.5 million pounds, or 2,500 metric tons. The establishment of this fishery, therefore, is not expected to increase landings to levels anywhere near the MSY estimate for the northern stock, even when factoring in the potential for effort on the northern stock of whiting to increase.

In terms of effects on small mesh multispecies resources, this framework adjustment complements recent management actions proposed in Framework 37 to the Northeast Multispecies FMP (pending approval). Actions in both Framework 37 and Framework 38 are consistent with the Whiting Monitoring Committee's technical evaluation of the small mesh multispecies resources in 2002 and the consequent recommendation by the WMC to allow effort to increase in the northern stock area.

The indirect effects of the proposed action on other fishery resources is addressed in Section 6.1.4 of this document (p.31). The non-target species of most concern are the large-mesh regulated groundfish species. The Groundfish PDT reviewed the proposed action with respect to potential impacts on regulated groundfish species and concluded the following:

- Based on the experiment, this fishery is likely to primarily take juvenile plaice, redfish, witch flounder and white hake. The amount of bycatch depends in large measure on the amount of effort in the fishery. In terms of weight, data presented in this framework document estimate the expected bycatch as less than 5% of the total catch. Using data provided by ME DMR from the 2002 experimental fishery, the numbers of juvenile fish that may be caught based on effort scenario 2 (5,822 hours to assumed tows, see Table 11, p. 30), could increase the catch of juvenile plaice by 1.5 – 7%, and catch of juvenile witch flounder could increase less than 0.5%. While catch at age estimates are not available to make these comparisons for redfish and white hake, the Groundfish PDT expects bycatch of these species to be minimal. As a result, the proposed action is not expected to jeopardize the sustainability of any non-target species.

The indirect effects of management measures in other fisheries on the small mesh multispecies resources are addressed in this document in the analysis of the potential for effort in this fishery to increase (Section 6.1.3, p. 28). The most likely indirect effect of future management measures in other fisheries will be increased participation levels in the proposed grate raised footrope trawl fishery. Allocated multispecies days-at-sea (DAS) were recently reduced in an interim action resulting from the Framework 33 lawsuit and may be reduced again in Amendment 13 to the Northeast Multispecies FMP. DAS allocations for many vessels may become so low that groundfishing is no longer a viable option for these vessels. Because whiting is an open access fishery, it is likely that some of these vessels will direct more effort towards whiting. The nature of the proposed grate raised footrope trawl fishery (area, gear requirements, possession limit) suggests that the majority of vessels who redirect effort at whiting in this particular fishery will be smaller and medium-sized vessels homeported in the communities adjacent to the Gulf of Maine (and mostly in the state of Maine). According to the effort scenarios presented in Table 11 (p. 30), significant increases in effort, probably due in part to the indirect effects of management measures in other fisheries, are not expected to result in significant cumulative impacts for the small mesh multispecies stocks directly affected by the proposed action.

## 6.4 ECONOMIC IMPACTS

The economic effects of the proposed exempted grate raised footrope trawl fishery are not expected to be profound, but will be important to the participating vessels, especially those along the coast of Maine. There will be vessels that will participate in this fishery as a source of bait for both bluefin tuna and for lobsters. As a rule, these vessels do not harvest large amounts of product, but fresh whiting is the preferred hook bait for tuna fishing and commands a reasonable price for the transfer-at-sea fishermen. Tuna fishing in season involves many recreational and commercial vessels. A constant supply of fresh bait for chum and hook bait is highly desirable, and these fishermen are willing to pay more than food market price for the produce. In 1998, the vessels that participated in the experimental fishery were distributed among several small fishing communities, providing local bait to the tuna fleet.

Future participation in the exempted grate raised footrope trawl fishery is difficult to predict. The market for whiting will be a major factor as it has been in the recent past. In 1998, there was an experimental grate fishery that permitted vessels into two categories: “landed” and “transfer at sea.” There were 52 vessels registered in the transfer at sea category, primarily bait boats, and nine vessels registered in the landed for sale category, primarily vessels selling the fish for human consumption. Because of the nature of this fishery (inshore area, limited season, maximum whiting trip limit of 7,500 pounds), it is anticipated that participation levels will be similar to those observed in the experimental fisheries during the mid- and late 1990s. Certainly, the characteristics of participating vessels are expected to be similar (small and medium-sized trawlers from ports adjacent to the GOM).

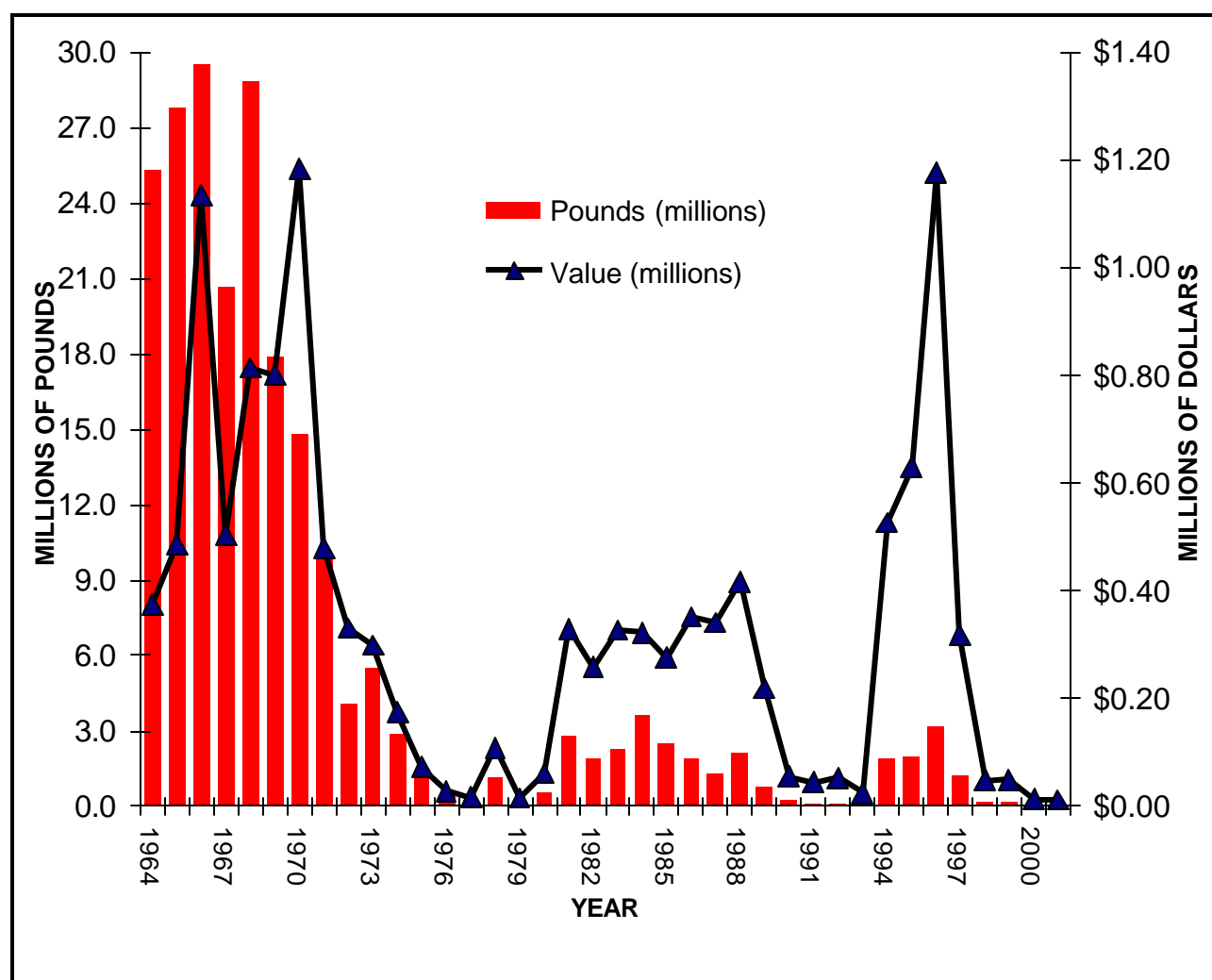
Lobster bait in Maine is primarily herring, and a large percentage of the herring caught in the state goes into this fishery. A whiting grate fishery could not and would not compete with the herring fishery for the volume of demand for lobster bait at this time. However, the supply of herring is not always guaranteed. There is widespread interest in having the capability of fishing for bait at times when the herring catch is down. This is not expected to amount to a huge catch of whiting and red hake, but at a local level, it is very important for the lobster fishing community to maintain some flow of bait into their traps.

The whiting food fishery may expand as markets are developed. Some fish will move south through the Fulton Fish Market in New York City to supply a steady demand for a limited amount of whiting in the Mid-Atlantic area, but that market is controlled almost completely by the much larger whiting fishery in the southern stock area and the Cultivator fishery, and can easily be flooded with fish, producing a highly volatile price structure. When smaller whiting were being sold to the Spanish market in 1995 – 1997, price varied between \$1.00 per pound and \$0.05 per pound but fishermen rarely knew what the price would be until they landed their catch. The average price/lb for whiting from 1992 through 2001 was \$0.37 and in 1995 – 1997 it was \$0.31, so the Spanish market did not appreciably change the overall value of the catch (Figure 5). Thus, while some trips were financially worthwhile to supply the Spanish market, the market demand for the Maine fish was fickle, and fishermen did not remain in the fishery for long. With a minimum size limit on the mesh allowed in the grate raised footrope trawl fishery, the volume of small fish that might move to a Spanish market will be very small, and price has been a

problem in recent years due to competition with Canadian product.

While the average price for whiting in 1996 was around \$0.37 per pound producing a value of \$1.17 million in the state of Maine, individual fishermen never knew from day-to-day what their catch would be worth at the dock. Also, the length of time the fish are kept on ice in transport to distant markets diminishes their value. Increases in some local markets are possible, but currently, these markets must be pre-arranged almost on a per-trip basis and do not represent any appreciable volume. For the above reasons, the initial fishery using the proposed grate raised footrope trawl would not be expected to expand quickly, but will probably allow the bait fishing activities to occur and will probably produce a food fishery that will be worth about \$1 million if levels of activity similar to those in 1996 occur.

**Figure 5 Landings and Revenues from Silver Hake (Whiting) in the State of Maine**



## **6.5 SOCIAL IMPACTS**

### **6.5.1 Background**

National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act states that:

*Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.*

A complete description of the affected human environment (small mesh fisheries) is contained in Amendment 12 to the Northeast Multispecies FMP. The social impacts of the whiting management program are described in Section E.7.4 of the Amendment 12 document. Section E.6.5.3.5 of Amendment 12 in particular provides information about the participants in the experimental grate fisheries from 1995-1997. Much of the information from Amendment 12 is summarized in Section 5.0 of this document (p. 14).

Specific information about the communities likely to be most affected by the proposed action (see list of communities in the following subsection) is also provided in the 2001 and 2002 SAFE Reports for Small Mesh Multispecies. The information in the SAFE Reports and Amendment 12 is not reproduced in this framework document and should be referenced for additional social and community information. Framework 35 to the Multispecies FMP includes more detailed information about Gloucester and Provincetown, MA, the two communities that benefited most from the establishment of the Cape Cod Bay raised footrope trawl fishery in Framework 35.

This social impact assessment focuses more generally on the additional impacts (positive) that the action proposed in this framework will provide to the participating vessels and their respective communities. This assessment is therefore intended to supplement the social impact assessments provided in Amendment 12, Framework 32, Framework 35, and Framework 37.

### **6.5.2 Social Impacts of Exempted Grate Raised Footrope Trawl Fishery**

The communities likely to experience positive social impacts from the action proposed in this framework adjustment are those with vessels that will participate in the exempted grate raised footrope trawl fishery. Based on historical participation in the experimental fishery when it was “open” in the mid-1990s (see Section 5.0), these communities include:

- Portland, ME
- Five Islands, ME
- Phippsburg, ME
- Sebasco Estates, ME
- West Point, ME
- Gloucester, MA

- Provincetown, MA

Although very few vessels from ports in NH and other ports in MA participated in the experimental fisheries, it is likely that some will participate in the exempted fishery, especially if their opportunities in other fisheries like groundfish continue to decrease.

Overall, and certainly in comparison to the no action alternative, the social impacts of the proposed action will be positive and will result from increased fishing opportunities, economic returns from the fishery, flexibility for the affected fishing fleet, and increased ability to adapt to regulations in other fisheries. Analysis of the economic impacts of the proposed action predicts about \$1,000,000 in additional revenues for participants in this fishery. If effort increases to levels above those observed in the experimental fisheries in the mid-1990s, revenues from this fishery may be larger.

Many of the vessels that fish for whiting in the northern stock area actively participate in the large-mesh groundfish fishery, especially because opportunities to fish for whiting in the northern area are only seasonal. Increasing restrictions in the large-mesh groundfish fishery are compromising flexibility for these boats; many vessels are finding it difficult to maintain a year-round revenue stream from fishing because opportunities have become so limited (see Report from Social Impact Informational Meetings, NEFMC 2001). The action proposed in this framework adjustment mitigates some of these problems by providing another seasonal fishing opportunity for at least some of these vessels.

The relationship between the proposed action and some specific social impact assessment factors that were assessed in Framework 37 are briefly discussed below (see Framework 37 for a more detailed description of these factors and their associated social impacts):

1. **Regulatory Discarding:** The proposed action is not expected to affect regulatory discarding and should not result in any related social impacts. Regulatory discards in this fishery should be insignificant because the gear has been designed to minimize the catch of non-target species, especially regulated groundfish species.
2. **Safety:** The proposed action is not expected to compromise or endanger the safety of fishing operations at sea. The area proposed for this fishery is close to shore and should be easily accessible for small vessels. Vessels participating in this fishery are expected to make day trips (less than 24 hours) and can return home relatively quickly, which is important if safety becomes a concern (i.e., if weather conditions change abruptly).
3. **Disruption in Daily Living:** Consideration of this factor includes vessel flexibility and the ability of fishermen to switch between fisheries, areas, and gears seasonally and/or in response to market conditions. Year-round and seasonal fishing opportunities are important to consider. The proposed action, therefore, should have positive effects on this social impact factor.
4. **Changes in Occupational Opportunities:** Changes in occupational opportunities can lead to changes in household/family income, classes, and lifestyles. In assessing this variable, both the short- and long-term shifts in job opportunities should be considered. This includes changes to year-round and seasonal fishing opportunities, short-term and long-term dislocation from the fishery, employment opportunities, and the ability to find and keep crew.



Flexibility for the fishing fleet and the ability to plan business ventures over the short-term and long-term also are related factors. For the reasons previously discussed, the proposed action should have positive effects on this social impact factor.

Another important social impact assessment factor to consider is the *formation of attitudes*. The formation of attitudes includes positive or negative feelings, beliefs, or positions expressed by impacted members of the fishing communities regarding the proposed action. This factor provides information about the community climate that may prevail after the proposed action is implemented and can help to assess the need for mitigation. Consideration of the effects of the proposed action on this factor will provide for a better understanding of how changes induced by this framework adjustment could influence the affected communities.

The evolution of this fishery since 1994 suggests that the proposed action will positively affect the formation of attitudes. The proposed grate raised footrope trawl fishery is the product of eight years of experimental work conducted by ME DMR in cooperation with the fishing industry. The gear itself evolved throughout the course of the experimental fisheries, as different mesh configurations and grate bar spacing were tested. The gear proposed for the exempted fishery in this framework adjustment represents the configuration that encountered the most success minimizing regulated species bycatch when vessels used it to target whiting in the area proposed for exemption. The industry should feel a sense of accomplishment and pride with the implementation of this framework adjustment. Many years of hard work by some dedicated small mesh multispecies fishermen will “pay off” with the implementation of this action.

Additional social impacts of the exempted grate fishery may result from a better local supply of tuna and lobster bait within participating coastal fishing communities. Local bait suppliers may be able to react to local demand that may be temporally variable, depending on the availability of both bluefin tuna in the area and herring for lobster bait. The ability to supply bait on short notice could provide economic opportunity within the local coastal communities that may help stabilize those communities, especially during these times of uncertainty and instability in many fisheries throughout the region.

As a whiting food fishery continues to develop, the ability to have a constant source of product to supply the market will aid in that development and may help local fishing communities with another source of income. Generating income from a wider variety of species could provide for a more stable economic and social atmosphere in the affected coastal communities. For example, most fishing communities in Maine were originally built on fish stocks as a source of income, and lobstering was a secondary source of income. Today, most communities in Maine are heavily, if not solely, dependent on lobstering to generate income. Providing another fishing opportunity to these communities based on a healthy whiting stock should improve this situation.

## **7.0 RELATIONSHIP TO APPLICABLE LAW**

### **7.1 MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT (MSFCMA)**

#### **7.1.1 Consistency with the National Standards**

Section 301 of the Magnuson-Stevens Fishery Conservation and Management Act requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The following section summarizes, in the context of the National Standards, the analyses and discussion of the proposed action that appear in various sections of this framework adjustment document.

*(1) Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.*

Whiting/offshore hake possession limits have been important components of the Council's strategy, implemented in Amendment 12, to end overfishing and rebuild the northern and southern stocks of whiting. According to the WMC's third year review, this strategy appears to be working, as the northern stock is considered rebuilt, and the southern stock has recovered to a level that is no longer considered overfished. The WMC also concluded that overfishing does not appear to be occurring on either stock. In the 2002 SAFE Report for Small Mesh Multispecies, the WMC recommended modest increases in fishing effort on whiting in the northern stock area, the area proposed for an exempted grate raised footrope trawl fishery in this framework adjustment.

The establishment of an exempted grate raised footrope trawl fishery in the inshore Gulf of Maine clearly will contribute toward achievement of optimum yield from the fishery while not adversely impacting the rebuilding programs of large mesh regulated species. Based on surplus production analyses presented in SAW 32, the MSY of the northern stock of whiting may be up to 45,000 mt, with an 80% confidence interval of roughly 39,000-52,000 mt (2001 SAFE Report). The 2002 SAFE Report indicates that landings of whiting from the northern stock averaged about 3,300 mt from 1999-2001. Increases are warranted, therefore, to better achieve OY in the northern stock area, especially since the stock can support more effort. The biological impacts of the proposed action are discussed in Section 6.1 of this document.

*(2) Conservation and management measures shall be based upon the best scientific information available.*

The technical basis for this framework adjustment as well as the analyses of the proposed action are based on the best scientific information available. The analyses of the action proposed in this framework adjustment are based on the scientific information gleaned from development and sea sampling of the grate raised footrope trawl experimental fishery from 1995-2002 (more emphasis was placed on the 2001 and 2002 data because they reflect activity using the gear proposed in this framework adjustment). Much of these data were collected by biologists from ME DMR who worked in cooperation with the fishing industry to develop this gear to allow for a seasonal whiting fishery with minimal bycatch of regulated species.

The scientific basis to allow fishing effort on whiting to increase in the northern area is provided in the 2002 SAFE Report for Small Mesh Multispecies, prepared by the Council's Whiting Monitoring Committee. The WMC includes technical experts from the New England and Mid-Atlantic Council staffs, NMFS NERO, the Northeast Fisheries Science Center, the State of Massachusetts, and the State of Maine, as well as industry representatives from northern New England, southern New England, and the Mid-Atlantic regions.

*(3) To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.*

The action proposed in this framework does not alter the management units for whiting, red hake, or any of the large-mesh regulated groundfish species. Although the proposed action is area and season-specific in order to minimize regulated species bycatch, it is consistent with small mesh multispecies regulations implemented through Amendment 12 and large mesh species regulations implemented through Amendments 5, 7, and 9.

*(4) Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.*

The proposed action does not discriminate between residents of different states, nor does it allocate fishing privileges among various sectors of the fishery. Unless the Council adopts a limited access program for small mesh multispecies in the future, this fishery will remain open to any small mesh multispecies-permitted vessels that wish to participate.

*(5) Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.*

The objectives of this framework adjustment are to minimize regulatory discards resulting from the grate raised footrope trawl fishery and encourage proper gear design and use. With these objectives, the proposed action will likely enhance efficiency in the utilization of fishery resources by minimizing waste and improving yield from the whiting fishery.

*(6) Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

Changes in fisheries occur continuously, both as the result of human activity (for example, new technologies or shifting market demand) and natural variation (for example, oceanographic perturbations). In Amendment 12, the Council established a process to annual review and adjust the whiting management measures according to such variations.

The third year review by the WMC serves as part of the technical basis for the action proposed in this framework adjustment. In this review, and in developing the proposed action, the Council considered variations among and contingencies in fisheries, resources, and catches. The proposed action represents the Council's attempt to ensure continued whiting stock recovery

while allowing for increased opportunities in the northern area, as the WMC recommended.

*(7) Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.*

As always, the Council considered the costs and benefits associated with the proposed action when developing this framework adjustment. The proposed action allows for greater fishing opportunity and planning flexibility at minimal administration and enforcement costs.

*(8) Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.*

This framework adjustment provides for the sustained participation of Gulf of Maine fishing communities in small mesh multispecies fisheries by affording these communities an additional opportunity to seasonally access the small mesh multispecies resources. Since the implementation of Amendment 5 to the Northeast Multispecies FMP, small mesh multispecies fishing opportunities in the northern area have been extremely limited due to gear restrictions to address the potential bycatch of large-mesh multispecies in the small mesh fisheries. The grate raised footrope trawl fishery has demonstrated minimal bycatch of regulated groundfish species through sea sampling in a series of experimental fisheries since 1995. As a result, the Council is able to provide coastal communities with this additional fishing opportunity. The impacts of the proposed action are likely to be positive for the affected communities by increasing fishing flexibility and opportunities as well as generating the associated economic benefits.

This action is consistent with the conservation requirements of the M-S Act; the Council's WMC recommended increasing opportunities to catch small mesh multispecies in the northern area due to the extremely healthy condition of the whiting resource in this area (see 2002 SAFE Report). For more information about the potential impacts of this action on fishing communities, see Section 6.4 (Economic Impacts) and 6.5 (Social Impacts).

*(9) Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.*

The objective of this framework adjustment is to minimize regulatory discards of large mesh regulated species while simultaneously allowing a small mesh whiting fishery in the inshore Gulf of Maine to re-emerge. The fishery itself evolved from the need to minimize the bycatch of non-targeted species, particularly large-mesh regulated multispecies. This objective will be achieved by:

- Mandating use of the sweepless raised footrope trawl with a Nordmore-style grate – This gear minimizes bycatch of large mesh regulated species in this fishery by keeping the trawl off the ocean bottom (thereby avoiding flatfish) and eliminating the catch of larger roundfish (through the use of the grate). The action proposed in this framework adjustment specifically addresses National Standard 9.

- Seasonal and area restrictions – The proposed restrictions on the fishery season and area are designed to minimize bycatch within the context of maximizing whiting catch. The proposed area should minimize interactions with species like redfish, while the proposed season encompasses the time during which sea sampling has demonstrated the lowest levels of groundfish bycatch.
- Banning possession of large mesh regulated species and other species often caught when nets are fishing directly on the ocean bottom – The prohibition on the possession of these species encourages proper usage of gear design to reduce bycatch.

(10) *Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.*

The Council is aware of the safety implications of its management decisions, both through extensive public comment and the practical experience of many of its members. The management measures implemented through Framework 38 promote the safety of human life at sea by providing an opportunity to fish for small mesh multispecies in areas close to shore. There are no such opportunities for whiting fishing directly off the coast of Maine at this time. The proposed action should therefore have no adverse impacts on safety at sea and may have favorable impacts on safety to the extent that the action provides an alternative that allows an opportunity to fish near homeports with smaller vessels (smaller ports in Maine, for example).

### **7.1.2 Other Required Provisions of the MSFCMA**

Section 303 of the MSFCMA contains fourteen additional required provisions for FMPs, which are discussed below. Any FMP prepared by any Council, or by the Secretary, with respect to any fishery, shall:

(1) *contain the conservation and management measures, applicable to foreign fishing and fishing by vessels of the United States, which are—(A) necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery; (B) described in this subsection or subsection (b), or both; and (C) consistent with the National Standards, the other provisions of this Act, regulations implementing recommendations by international organizations in which the United States participates (including but not limited to closed areas, quotas, and size limits), and any other applicable law;*

None of the measures proposed in this framework adjustment apply to foreign fishing vessels. Relative to domestic vessels, Section 3.0 of this document contains a description of the action proposed in this framework adjustment. Section 7.1.1 discusses the framework adjustment's consistency with the National Standards of the MSFCMA.

(2) *contain a description of the fishery, including, but not limited to, the number of vessels involved, the type and quantity of fishing gear used, the species of fish involved and their location, the cost likely to be incurred in management, actual and potential revenues from the fishery, any recreational interest in the fishery, and the nature and extent of foreign fishing and Indian treaty fishing rights, if any;*

A summary of the human environment affected by the action proposed in this framework adjustment is provided in Section 5.0 (p. 14) of this document. This information was provided in Amendment 12 to the Northeast Multispecies FMP, which includes much more detailed information about the small mesh multispecies fisheries, such as the number of vessels involved, the type and quantity of gear used, biological and ecological information about small mesh multispecies resources and their physical environment, economic trends in the fisheries, recreational activity, and other important aspects of the fisheries. Section E.6.5.3.5 of Amendment 12 in particular provides detailed information about the participants in the experimental grate fisheries from 1995-1997.

In addition to the information provided in this document and Amendment 12, the Whiting Monitoring Committee has completed two Stock Assessment and Fishery Evaluation (SAFE) Reports since the implementation of Amendment 12. These documents update information regarding the biological and human environments affected by the management of small mesh multispecies. The 2002 SAFE Report for Small Mesh Multispecies was recently completed by the WMC and submitted as an appendix to Framework 37 to provide the most recent information regarding the affected environment.

- (3) assess and specify the present and probable future condition of, and the maximum sustainable yield and optimum yield from, the fishery, and include a summary of the information utilized in making such specification;*

Sections 4.2 and 4.3 of the Amendment 12 document contain definitions of overfishing and a description of optimum yield for small mesh multispecies. Current overfishing definitions are based on maximum fishing mortality and minimum biomass thresholds. This framework adjustment builds on the Amendment 12 management measures to rebuild whiting stocks to levels that will produce maximum sustainable yield over the long-term based on the most recent and best scientific information available.

- (4) assess and specify—(A) the capacity and the extent to which fishing vessels of the United States, on an annual basis, will harvest the optimum yield specified under paragraph (3); (B) the portion of such optimum yield which, on an annual basis, will not be harvested by fishing vessels of the United States and can be made available for foreign fishing; and (C) the capacity and extent to which United States fish processors, on an annual basis, will process that portion of such optimum yield that will be harvested by fishing vessels of the United States;*

Optimum yield is specified in Section 4.3 of the Amendment 12 document. No portion of the allowable catch is available for foreign fishing. The measures proposed in this framework adjustment do not change the Council's specification for optimum yield in this fishery and better promote the harvest of optimum yield from the northern stock of whiting by providing a seasonal small mesh fishing opportunity for vessels fishing in the inshore GOM.

- (5) specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, and charter fishing in the fishery, including, but not limited to, information regarding the type and quantity of fishing gear used, catch by species in numbers of fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, and the estimated processing capacity of, and the actual processing*

*capacity utilized by, United States fish processors;*

Section E.6.2 of the Amendment 12 document describes the amendment's data considerations and the Council's participation in stock assessments and the Atlantic Coastal Cooperative Statistics Program (ACCSP). These data considerations are still applicable to the measures proposed in this framework adjustment. The Council has initiated efforts to organize and compile all of the data requirements for managing the stocks in a manner consistent with the Sustainable Fisheries Act. These efforts include the preparation of SAFE Reports and activation of the Council's Scientific and Statistical Committee, Experimental Fisheries and Research Program Steering Committee, and Social Sciences Advisory Committee.

- (6) consider and provide for temporary adjustments, after consultation with the Coast Guard and persons utilizing the fishery, regarding access to the fishery for vessels otherwise prevented from harvesting because of weather or other ocean conditions affecting the safe conduct of the fishery; except that the adjustment shall not adversely affect conservation efforts in other fisheries or discriminate among participants in the affected fishery;*

The framework adjustment process allows for temporary and/or real-time adjustments to management measures to address these issues as they arise. The Council is taking advantage of the framework adjustment process to modify whiting management measures to ensure that these issues are addressed while not affecting conservation efforts in other fisheries or discriminating among participants in small mesh multispecies fisheries.

- (7) describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 305(b)(1)(A), minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat;*

Amendment 11 to the Northeast Multispecies FMP addresses the essential fish habitat requirements for silver hake and red hake. The Amendment 12 document and supplement describe and identify EFH for offshore hake. The Council conducted an EFH consultation for the measures proposed in this framework adjustment pursuant to 50 CFR 600.920 of the EFH Interim Final Rule. The results of that assessment are presented in Section 6.2 of this document (p. 37).

- (8) in the case of a fishery management plan that, after January 1, 1991, is submitted to the Secretary for review under section 304(a) (including any plan for which an amendment is submitted to the Secretary for such review) or is prepared by the Secretary, assess and specify the nature and extent of scientific data which is needed for effective implementation of the plan;*

The data considerations specific to Amendment 12 are applicable to this framework adjustment and are identified in Section E.6.2.5 of the Amendment 12 document. Obtaining updated stock assessment information for all three small mesh multispecies is critical to achieving the objectives of the whiting management plan. A stock assessment for whiting was conducted in 2000 and provides more information since Amendment 12. A stock assessment for red hake is scheduled for 2003.

The Council is working closely with the National Marine Fisheries Service to coordinate the reporting of scientific information in a timely manner so that it coincides with the annual plan review and adjustment process. Since small mesh multispecies are part of the multispecies complex, annual plan review and adjustments (as necessary) generally occur along the same timeline as other multispecies stocks.

- (9) *include a fishery impact statement for the plan or amendment (in the case of a plan or amendment thereto submitted to or prepared by the Secretary after October 1, 1990) which shall assess, specify, and describe the likely effects, if any, of the conservation and management measures on—(A) participants in the fisheries and fishing communities affected by the plan or amendment; and (B) participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants;*

This framework document includes an Environmental Assessment and contains analyses and discussion of the impacts of the proposed action on the affected human environment, including fishery participants and fishing communities. The impacts on the human environment of this proposed action are likely to be positive. The Council developed the measures proposed in this framework adjustment in consultation with the Mid-Atlantic Fishery Management Council through the participation of its members on the Whiting and Groundfish PDTs and Committees as well as attendance at Council meetings.

- (10) *specify objective and measurable criteria for identifying when the fishery to which the plan applies is overfished (with an analysis of how the criteria were determined and the relationship of the criteria to the reproductive potential of stocks of fish in that fishery) and, in the case of a fishery which the Council or the Secretary has determined is approaching an overfished condition or is overfished, contain conservation and management measures to prevent overfishing or end overfishing and rebuild the fishery;*

The Amendment 12 overfishing definitions for each of the small mesh multispecies specify objective and measurable criteria for identifying when these stocks are overfished or when overfishing is occurring on these stocks. Where possible, the reference points in the overfishing definitions are based on maximum fishing mortality and minimum biomass criteria. If these reference points could not be estimated, the Council developed risk-averse overfishing definitions based on rates of change in survey levels that may be indicative of overfishing. For more information, see Section 4.2 and Appendix I of the Amendment 12 document. Nothing proposed in this framework adjustment changes these criteria.

According to the criteria specified in the overfishing definitions in Amendment 12, none of the five small mesh multispecies stocks are considered to be overfished at this time. Overfishing is not occurring on northern red hake and remains unknown for the other stocks, although the WMC concluded that overfishing does not appear to be occurring on either stock of whiting.

- (11) *establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority—(A) minimize bycatch; and (B) minimize the mortality of bycatch which cannot be avoided;*



Vessels fishing for small mesh multispecies with an open access multispecies permit are required to submit Vessel Trip Reports (VTRs, logbooks). NMFS uses VTR information in conducting stock assessments. In addition, the Council and the National Marine Fisheries Service are both participating in the ACCSP (Section E.6.2.4 of the Amendment 12 document), which is a long-term effort to improve the collection and utility of fisheries data, including bycatch information. The measures proposed in this framework adjustment are intended to minimize regulatory discards resulting from the grate raised footrope trawl fishery.

- (12) *assess the type and amount of fish caught and released alive during recreational fishing under catch and release fishery management programs and the mortality of such fish, and include conservation and management measures that, to the extent practicable, minimize mortality and ensure the extended survival of such fish;*

Similar to Amendment 12, this framework adjustment proposes no recreational fishery management measures for small mesh multispecies. Information suggests that participation in recreational whiting and red hake fisheries has decreased to minimal levels. The Council intends to promote the re-emergence of recreational whiting and ling fisheries, particularly in the southern New England and Mid-Atlantic areas, by rebuilding small mesh multispecies stocks to their target levels. If it becomes necessary in the future, the Council may implement management measures for the recreational fishery and a catch-and-release program to assess the type and amount of fish caught and released alive during recreational fishing.

- (13) *include a description of the commercial, recreational, and charter fishing sectors which participate in the fishery and, to the extent practicable, quantify trends in landings of the managed fishery resource by the commercial, recreational, and charter fishing sectors;*

The Amendment 12 document contains an extensive description of the commercial and recreational fishing sectors and quantifies the trends in landings by these sectors of the fishery. The history of small mesh multispecies fisheries is described in Section E.6.5.1 of the Amendment 12 document. Commercial landings information by state and by port is provided in Section E.6.5.2. Information specific to small mesh multispecies fisheries throughout New England and the Mid-Atlantic is provided in Section E.6.5.3. The sociocultural characteristics of the fishery as well as port-specific fishery information is provided in Section E.6.5.5. The recreational whiting and red hake fisheries are described in Section E.6.5.6.

As previously noted, the Council's WMC has completed two SAFE Reports since the implementation of Amendment 12. These documents update information regarding the biological and human environments affected by the management of small mesh multispecies and should be referenced as necessary.

- (14) *to the extent that rebuilding plans or other conservation and management measures which reduce the overall harvest in a fishery are necessary, allocate any harvest restrictions or recovery benefits fairly and equitably among the commercial, recreational, and charter fishing sectors in the fishery.*

The Council adopted small mesh multispecies management measures that apply equally to all sectors of the commercial fishery in Amendment 12. The measures proposed in this framework adjustment do not relate to a need to reduce the overall harvest from the fishery, but rather to

allow for the harvest in the northern stock area to increase. The recovery benefits in the northern stock area are allocated fairly and equitably and apply to all vessels that participate in small mesh multispecies fisheries in the northern area. If it becomes necessary in the future, the Council may develop management measures to address sectors of the commercial fishery differently or to address the recreational sector of the fishery.

## **7.2 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)**

### **7.2.1 Environmental Assessment**

- Section 2.0 of this document contains a discussion of the purpose and need for the proposed action (p. 1).
- Section 3.0 of this document contains a description of the proposed action (p. 2).
- Section 4.0 includes a description of the alternatives to the proposed action (p. 12).
- Section 5.0 includes a summary of the environment affected by the proposed action (p. 14).
- Section 6.1 contains an assessment of the biological impacts of the proposed action (p. 16).
- Section 6.1.5 presents an assessment of the impacts of the proposed action on endangered and threatened species and other protected species (p. 33).
- Section 6.2 presents an assessment of the impacts of the proposed action on habitat and includes the EFH assessment required by the MSFCMA (p. 37).
- Section 6.3 includes a discussion of cumulative effects as they relate to the proposed action (p. 42).
- Section 6.4 includes an assessment of the economic impacts of the proposed action (p. 45).
- Section 6.5 includes an assessment of the social impacts of the proposed action (p. 47).

In developing the proposed action and in reviewing the analyses of impacts contained in this document, the Council consulted with NMFS, the Mid-Atlantic Fishery Management Council, the Atlantic States Marine Fisheries Commission, and the state marine fisheries agencies (New England and the Mid-Atlantic) through their participation at PDT, Committee, and Council meetings. The Council also informed the interested public of the proposed action and review of environmental documents through notice in the *Federal Register* and by mailings of meeting notices and agendas for Committee and Council meetings two to three weeks in advance. Approximately 1,650 persons receive mail notification of Council meetings.

### 7.2.2 Finding of No Significant Impact (FONSI)

NOAA Administrative Order 216-6 provides guidance for the determination of significance of the impacts resulting from the management measures contained in fishery management plans, their amendments, and framework adjustments. The nine criteria to be considered are addressed below:

1. *Can the proposed action be reasonably expected to jeopardize the sustainability of any target species that may be affected by the action?*

The biological impacts of the proposed action are discussed in Section 6.1 of this document. The proposed action is not expected to jeopardize the sustainability of the target species (whiting) that may be affected by the action. The conclusions of the 2002 Whiting SAFE Report include that the northern stock of whiting is considered to be rebuilt and above its target biomass level according to the overfishing definitions in Amendment 12 to the Northeast Multispecies FMP. The 2002 Whiting SAFE Report concludes that this stock can absorb increased fishing effort, and that new exempted fisheries for whiting should be considered.

2. *Can the proposed action be reasonably expected to jeopardize the sustainability of any non-target species?*

A thorough discussion of the potential impacts of the proposed action on non-target species is provided in Section 6.1.4 of this document (p. 31). The non-target species of most concern are the large-mesh regulated groundfish species. The Groundfish PDT reviewed the proposed action with respect to potential impacts on regulated groundfish species and concluded the following:

Based on the experiment, this fishery is likely to primarily take juvenile plaice, redfish, witch flounder and white hake. The amount of bycatch depends in large measure on the amount of effort in the fishery. In terms of weight, data presented in this framework document estimate the expected bycatch as less than 5% of the total catch. Using data provided by ME DMR from the 2002 experimental fishery, the numbers of juvenile fish that may be caught based on effort scenario 2 (5,822 hours to assumed tows, see Table 11, p. 30), could increase the catch of juvenile plaice by 1.5 – 7%, and catch of juvenile witch flounder could increase less than 0.5%. While catch at age estimates are not available to make these comparisons for redfish and white hake, the Groundfish PDT expects bycatch of these species to be minimal.

As a result, the proposed action is not expected to jeopardize the sustainability of any non-target species.

3. *Can the proposed action be reasonably expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in FMPs?*

Impacts of the proposed action on habitat, including the EFH assessment, are discussed in Section 6.2 of this document. The proposed action is not expected to allow damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in approved FMPs. In general, bottom-tending mobile fishing gear, primarily otter trawls, have the potential to affect bottom habitats, including EFH, in ways which may be considered adverse. However, the specific type of otter trawl required to be used in this proposed action, the

sweepless raised footrope trawl, is associated with significantly less impact than other forms of otter trawls due to the nature and design of the gear.

4. *Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

When developing management measures, the Council usually receives extensive comments from affected members of the public regarding the safety implications of various alternatives under consideration. The action proposed in this framework adjustment is not likely to have an adverse impact on either public health or safety. The action has been found to be consistent with National Standard 10 of the MSFCMA, which requires management measures to promote the safety of human life at sea.

5. *Can the proposed action be reasonably expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

The proposed action is not expected to adversely affect endangered or threatened species, marine mammals, or critical habitats of these species. NOAA Fisheries has previously concluded that measures approved for the whiting fishery fall within the scope of consultations on prior Northeast Multispecies FMP actions. Impacts on endangered and threatened species as well as marine mammals are discussed in Section 6.1.5 of this document.

6. *Can the proposed action be reasonably expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?*

Cumulative effects are discussed in Section 6.3 of this document. None of the actions contained in this framework adjustment are likely to have a significant impact on the recovery and long-term viability of the whiting stocks. Furthermore, none of the actions proposed in this framework adjustment are likely to affect fishing mortality rates on whiting or other small mesh multispecies. Overall, the cumulative effects of the proposed action are not expected to be significant.

7. *Can the proposed action be expected to have a substantial impact on biodiversity and ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships)?*

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.). The impacts to bottom habitats, including EFH, associated with this proposed action are not expected to be substantial due to the nature of the fishing gear, which remains several feet above the seafloor during normal fishing operations. Accordingly, impacts to benthic productivity (which are generally considered to be a result of significant disruption of benthic communities and are generally associated with significant direct impacts from fishing gear that digs into or has substantial contact with the seafloor) would not be expected to result from the use of the sweepless raised footrope trawl, which would be required under this proposed action.

Although the target species of this proposed action, whiting, are a prey species of a variety of managed species, they are not the sole or primary prey of any species. Most species known to prey on whiting feed on a wide variety of species, including crustaceans and other fish. Because

the northern stock of whiting is rebuilt, and is, in fact, above its biomass target, additional fishing effort on whiting would not be expected to have any significant effect on the availability of prey items for any species known to prey on whiting.

8. *Are significant social or economic impacts interrelated with significant natural or physical environmental effects?*

There are no significant social or economic impacts, nor are there any significant natural or physical environmental effects expected to result from the action proposed in this framework adjustment.

9. *To what degree are the effects on the quality of human environment expected to be highly controversial?*

The effects on the quality of the human environment expected to be associated with this proposed action are not likely to be controversial. This area has been the subject of an experimental exempted fishery for several years. At several Whiting Committee, Groundfish Committee, and Council meetings at which this fishery was discussed and during the development of this framework adjustment, there was general support for the proposed action.

Based on the preceding criteria and analyses, the Council proposes *a finding of no significant impact* for the management adjustments contained in this framework adjustment to the Northeast Multispecies FMP.

**FONSI STATEMENT:** In view of the analyses presented in this framework adjustment document and in the FSEIS for Amendment #12 to the Northeast Multispecies FMP, the proposed action will not significantly affect the quality of the human environment with specific reference to the criteria contained in NOAA Administrative Order 216-6 implementing the National Environmental Policy Act. Accordingly, the preparation of a Supplemental Environmental Impact Statement for this proposed action is not necessary.

\_\_\_\_\_  
**Assistant Administrator for Fisheries, NOAA**

\_\_\_\_\_  
**Date**

### **7.2.3 List of Agencies and Persons Consulted**

During the development of this framework adjustment, the Council worked with the National Marine Fisheries Service, the Northeast Fisheries Science Center, and Maine Department of Marine Resources to complete the required analyses. Members of the Whiting Plan Development Team analyzed the alternatives under consideration and prepared the framework document. The Groundfish Plan Development Team also reviewed the information presented in this document and provided important feedback regarding groundfish bycatch issues. Members of the groups identified above are listed below.

#### ***Whiting Plan Development Team***

Lori Steele, Chairman, Fishery Analyst, NEFMC Staff  
Eric Thunberg, Economist, NEFSC Social Sciences  
Larry Jacobson, Biologist, NEFSC Population Dynamics  
Dan Schick, Marine Scientist, Maine Department of Marine Resources  
Dan McKiernan, Deputy Director, Massachusetts Division of Marine Fisheries  
Marty Jaffe, Policy Analyst, NMFS NERO  
Tom Nies, Fishery Analyst, NEFMC Staff

#### ***Groundfish Plan Development Team***

Tom Nies, Chairman, Fishery Analyst, NEFMC Staff  
Lori Steele, Fishery Analyst, NEFMC Staff  
Anne Beaudreau, Fishery Technician, NEFMC Staff  
Eric Thunberg, Economist, NEFSC Social Sciences  
John Walden, Economist, NEFSC Social Sciences  
Jon Brodziak, Biologist, NEFSC Population Dynamics  
Tom Warren, Policy Analyst, NMFS NERO  
Steve Correia, Biologist, Massachusetts Division of Marine Fisheries  
Kevin Kelly, Marine Scientist, Maine Department of Marine Resources

### **7.2.4 Opportunity for Public Comment**

This framework adjustment serves as the mechanism to not only add the grate raised footrope trawl fishery to the list of *Multispecies Exempted Fisheries*, but also to specify, by regulation, provisions for the fishery including season, area, gear specifications, and bycatch restrictions. Initially, the action proposed in this framework adjustment was included in (Draft) Framework 37 to the Multispecies FMP; therefore, much of the discussion regarding this action occurred in the context of Framework 37. At the final meeting for Framework 37, however, the Council separated issues related to the grate raised footrope trawl fishery from Framework 37 and included them in Framework 38. The decision to consider the grate raised footrope trawl fishery separately in Framework 38 was made in order to streamline the Framework 37 process and allow adequate time for relevant data and analyses to be developed for consideration in this document.

The initial meeting for Framework 37 occurred at the September 10-12, 2002 Council meeting where the WMC presented the 2002 SAFE Report for Small Mesh Multispecies. Because this action was split from Framework 37, opportunity for public comment occurred during Whiting Committee and Council meetings that addressed both Framework 37 and Framework 38 to the Multispecies FMP. Table 13 lists meetings for which public notice included discussion of Frameworks 37 and 38.

**Table 13 Opportunity for Public Comment on Frameworks 37 and 38**

<b>Date</b>	<b>Meeting</b>	<b>Location</b>
March 19-20, 2002	Council	Mystic, CT
June 17, 2002	Whiting Monitoring Committee	Mansfield, MA
July 26, 2002	Whiting Monitoring Committee	Mansfield, MA
August 23, 2002	Whiting Monitoring Committee	Mansfield, MA
September 10-12, 2002	Council	Providence, RI
September 19, 2002	Whiting PDT	Mansfield, MA
October 9, 2002	Whiting Committee	Mansfield, MA
October 25, 2002	Whiting PDT	Mansfield, MA
November 4, 2002	Joint Whiting Committee and Advisory Panel	Danvers, MA
November 5-7, 2002	Council	Gloucester, MA
January 17, 2003	Groundfish PDT	Newburyport, MA
January 22, 2003	Groundfish Committee	Mansfield, MA
January 28-30, 2003	Council	Portsmouth, NH

The mailing lists for meeting notices contain approximately 190, 900, and 1,600 interested parties for Whiting Committee, Groundfish Committee, and Council meetings respectively. Notices are mailed at least two weeks in advance of Committee meetings and three weeks in advance of Council meetings. Council and Committee meeting notices are also published in the *Federal Register* three weeks prior to the meeting. Agendas, meeting summaries, and minutes for the above meetings are available from the Council office or from the Council's website at [www.nefmc.org](http://www.nefmc.org).

## 7.3 REGULATORY FLEXIBILITY ACT (RFA)

### 7.3.1 Executive Order 12866

The Regulatory Impact Review (RIR) provides an assessment of the costs and benefits of proposed action and other alternatives in accordance with the guidelines established by Executive Order (E.O.) 12866. The regulatory philosophy of E.O. 12866 stresses that, in deciding whether and how to regulate, agencies should assess all costs and benefits of all regulatory alternatives and choose those approaches that maximize net benefits to the society. The RIR also serves as a basis for determining whether any proposed regulations are a “significant regulatory action” under the criteria provided in E.O. 12866 and whether the proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act of 1980 (RFA), as amended in 1996.

NOAA’s “Guidelines for Economic Analysis of Fishery Management Actions” (August 2000) states that if elements of the RIR are included in another section of the document, the appropriate section must be referenced within the RIR. The following RIR elements are referenced accordingly:

- Statement of the problem: Section 2.1, p.1
- Description of the proposed action: Section 3.0, p. 2
- Economic effects of the proposed action: Section 6.3, p. 42

In addition, the alternatives to the proposed action are discussed in Section 4.0, p. 12 of this document.

E.O. 12866 defines a “significant regulatory action” as one that is likely to result in:

- (1) an annual effect on the economy of \$100 million or more or one which adversely affects in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities;
- (2) a serious inconsistency or interference with an action taken or planned by another agency;
- (3) alteration of the budgetary impact of entitlement, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or
- (4) novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order.

The potential economic impacts of establishing an exempted grate raised footrope trawl fishery are discussed in Section 6.4 of this document (p. 45). Overall, the economic impacts of the action proposed in this framework adjustment are expected to be positive and could generate about \$1,000,000 in additional revenues for participating vessels. While the economic impacts are not likely to be large in scope or nature, they will be positive and important for mostly small and medium-sized vessels based primarily in small ports adjacent to the Gulf of Maine. According to information presented in Amendment 12 and summarized in Section 5.0 of this



document, an average of about 50 vessels participated in the experimental grate fisheries from 1995-1997. Whiting market limitations, the characteristics of the grate raised footrope trawl fishery (area, season, etc.), and other factors discussed in Section 6.4 suggest that a similar number of vessels, with similar characteristics (size, tonnage, homeport) as those that participated in the experimental fisheries, will benefit from this exempted fishery.

The economic impacts of the proposed action, however, fall nowhere near an annual effect on the economy greater than \$100 million. According to the 2002 SAFE Report for Small Mesh Multispecies, revenues from small mesh multispecies fishing throughout the Northeast Region were about \$13,300,000. Section 6.4 of this document estimates that this fishery could generate about \$1,000,000 in additional revenues for participating vessels. Even when considering the potential for fishing effort to increase as a result of this new exempted fishery, revenues from the additional opportunities that this fishery create cannot be expected to increase to levels anywhere near \$100 million. Also, because this proposed action provides opportunities for economic benefits to the relevant sector of the fishing industry and would not be associated with any adverse effects to the economy as a whole, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities, the proposed action is not considered to be significant under the second part of the first criterion specified in E.O. 12866.

The second criterion specified in E.O. 12866 is whether the proposed action would create a serious inconsistency or otherwise interfere with actions taken or planned by another agency. The activity proposed under this action involves commercial fishing for small mesh multispecies in the federal waters of the U.S. EEZ. NOAA Fisheries, in consultation with the Council, is the sole agency responsible for regulating this activity; therefore, there is no interference with actions taken by another agency. This proposed action would create no inconsistencies in the management and regulation of commercial fisheries in the Northeast region. The activities proposed to be allowed under this action have been ongoing for several years under an experimental exempted fishing program, and this proposed action codifies these activities on a regular basis. Thus, this proposed action would not be considered to be significant under the second criterion specified in E.O. 12866.

The third criterion for significance is whether the action would materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients. The proposed action is to change the regulations governing the Northeast multispecies fishery to exempt certain fishing activities from otherwise enforceable regulations. This action is unrelated to any entitlements, grants, user fees, or loan programs, and therefore cannot be considered to be significant under the third criterion specified in E.O. 12866.

The fourth criterion specified in E.O. 12866 is whether the proposed action would raise any novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the E.O. The proposed action is a relatively minor and routine regulatory change to provide for a small, seasonal fishery for an abundant resource (whiting) that the relevant science indicates is able to absorb increased fishing pressure. The context for this regulatory change is firmly established in the Northeast multispecies regulations, which grant the Council the ability to propose such a change upon review of the appropriate information. There

is significant precedence for this action, both in the fact that the activity has been performed on an experimental basis for several years, and in the fact that similar exempted fisheries have previously been approved and implemented. The proposed action, therefore, would not be considered to be significant under the fourth and final criterion specified in E.O. 12866.

Because the proposed action represents a relatively minor and routine regulatory change to the small mesh multispecies management program, it is not significant under any criteria specified in E.O. 12866. The most recent and best available scientific information indicates that the resource in the north can absorb increased fishing pressure. The context for this regulatory change is established in the Northeast Multispecies FMP through the framework adjustment process.

### **7.3.2 Initial Regulatory Flexibility Act Analysis (IRFAA)**

The purpose of the Regulatory Flexibility Act (RFA) is to reduce the impacts of burdensome regulations and record-keeping requirements on small businesses. To achieve this goal, the RFA requires government agencies to describe and analyze the effects of regulations and possible alternatives on small business entities. On the basis of this information, the Regulatory Flexibility Analysis determines whether the proposed action would have a “significant economic impact on a substantial number of small entities.” Note that the term “substantial number” has no specific statutory definition and the criterion does not lend itself to objective standards. A determination of substantial depends on the context of the proposed action, the problem to be addressed, and the structure of the regulated industry. Standards for determining significance are discussed below.

The RFA applies to any rule or regulation that must undergo “notice and comment” under the Administrative Procedures Act (APA), specifically those rules published as *proposed rules*. When the RFA applies, the Council must assess the impacts of the regulations to determine if they will have a significant economic impact on a substantial number of small entities. During the development of this framework adjustment, the Council carefully considered the potential impacts of the proposed action on small entities, alternatives to the proposed action (and their potential impacts), as well as how to minimize negative impacts on affected small entities.

- The statement of the problem/need for management action is presented in Section 2.0 of this framework document (p. 1).
- The objectives of this framework adjustment are specified in Section 2.2 (p. 2).
- The proposed action is described in Section 3.0 of this document (p. 2).
- The economic analysis of the proposed action is contained in Section 6.3 of this document (p. 42).

A brief summary of the Affected Human Environment (the small entities to which this rule applies) is provided in Section 5.0 of this document (p. 14). Much of this information is incorporated by reference from Amendment 12, Framework 32, and Framework 35 to the Northeast Multispecies FMP, as well as the 2001 and 2002 SAFE Reports for Small Mesh Multispecies. The 2002 SAFE Report includes the most recent information about the small entities to which this rule applies, and it is provided as Appendix I to the Framework 37

document (December 2002). To the extent possible, the analyses in this framework document characterize the entities to which the proposed action applies.

To the extent practicable, the proposed action does not duplicate, overlap, or conflict with any relevant Federal rules. NMFS' guidelines for RFA analysis suggest two criteria to consider in determining the significance of regulatory impacts, namely disproportionality and profitability.

- Disproportionality – Do the regulations place a substantial number of small entities at a significant competitive disadvantage to large entities?
- Profitability – Do the regulations significantly reduce profit for a substantial number of small entities?

According to SBA standards, any fish harvesting or hatchery business is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has annual receipts of not in excess of \$3.5 million. All entities affected by the proposed action meet the criteria for “small entities,” so issues related to disproportionality do not apply.

Profitability is discussed in the context of the economic impacts of establishing an exempted grate raised footrope trawl fishery (Section 6.4, p.45). The economic impacts of the proposed action are expected to be positive for affected small entities, generating additional revenues approximated at \$1,000,000. While the economic impacts are not likely to be large in scope or nature, they will be positive and important for mostly small and medium-sized vessels based primarily in ports adjacent to the Gulf of Maine.

According to information presented in Amendment 12, an average of about 50 vessels participated in the experimental grate fisheries from 1995-1997. Whiting market limitations, the characteristics of the grate raised footrope trawl fishery (area, season, etc.), and other factors discussed in Section 6.3 suggest that a similar number of vessels, with similar characteristics (size, tonnage, homeport) as those that participated in the experimental fisheries, will participate in and benefit from this exempted fishery. RFA issues related to profitability are adequately addressed through the proposed action in that all economic impacts are expected to be positive.

One important alternative to the proposed action that the Council considered is the no action alternative – not establishing an exempted grate raised footrope trawl fishery. While there would have been no adverse economic impacts on the fishing industry as a result of the no action alternative, the economic opportunities resulting from the proposed action would have been foregone. Slight variations to the proposed action (season, area, gear restrictions) that were also considered by the Council during the development of this framework adjustment may have increased the economic benefits of the proposed action, but the potential risk to associated bycatch species (particularly regulated groundfish species, see Sections 4.0 and 6.1.4) due to the uncertainty about bycatch rates in the exempted fishery were considered too great to warrant further consideration.

#### **7.4 ENDANGERED SPECIES ACT (ESA)**

Section 7 of the Endangered Species Act requires federal agencies conducting, authorizing or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species. The NEFMC has concluded, at this writing, that Framework 38 as proposed, and the prosecution of the whiting fishery is not likely to jeopardize any ESA-listed species or alter or modify any critical habitat, based on the discussion of impacts in this document. The NEFMC is seeking the concurrence of the National Marine Fisheries Service in this matter. For further information on the potential impacts of the fishery and the proposed management action on listed species, see Section 6.1.5 of this document.

#### **7.5 MARINE MAMMAL PROTECTION ACT (MMPA)**

The NEFMC has reviewed the impacts of the framework adjustment on marine mammals and has concluded that the management actions proposed are consistent with the provisions of the MMPA, and will not alter existing measures to protect the species likely to inhabit the management unit. For further information on the potential impacts of the fishery and the proposed management action on marine mammals, see Section 6.1.5 of this document.

#### **7.6 COASTAL ZONE MANAGEMENT ACT (CZMA)**

The Council has reviewed the coastal zone management (CZM) programs for states whose coastal waters are within the range of areas affected by the proposed action, including: Maine, New Hampshire, and Massachusetts. The Council has determined that the proposed action is consistent with the CZM programs of those states and has sent notification of this determination, along with a copy of the framework document, for their concurrence. Copies of the correspondence are on file at the Council office.

#### **7.7 PAPERWORK REDUCTION ACT (PRA)**

There are no analyses required by the Paperwork Reduction Act relative to this framework adjustment.

### **8.0 LIST OF ACRONYMS**

**ACCSP** Atlantic Coastal Cooperative Statistics Program

**ALWTRP** Atlantic Large Whale Take Reduction Plan

**APA** Administrative Procedures Act

**ASMFC** Atlantic States Marine Fisheries Commission

**B** Biomass

**B<sub>MSY</sub>** Biomass at MSY-levels

**DAM** Dynamic Area Management

**DAS** Days at Sea

**DEIS** Draft Environmental Impact Statement

**EA** Environmental Assessment

**EEZ** Exclusive Economic Zone

**EFH** Essential Fish Habitat

**EIS** Environmental Impact Statement

**ESA** Endangered Species Act

**F** Fishing Mortality Rate

**FEIS** Final Environmental Impact Statement

**FMP** Fishery Management Plan

**F<sub>MSY</sub>** Fishing mortality rate at MSY-levels

**FONSI** Finding of No Significant Impact

**FR** Federal Register

**GB** Georges Bank

**GOM** Gulf of Maine

**HPTRP** Harbor Porpoise Take Reduction Plan

**IRFAA** Initial Regulatory Flexibility Act Analysis

**IWC** International Whaling Commission

**LOA** Letter Of Authorization

**M** Natural Mortality Rate

**MA** Mid-Atlantic

**MAFMC** Mid-Atlantic Fishery Management Council

**ME DMR** Maine Department of Marine Resources

**MMPA** Marine Mammal Protection Act

**MSFCMA (M-S Act)** Magnuson-Stevens Fishery Conservation and Management Act

**MSY** Maximum Sustainable Yield

**NEFMC** New England Fishery Management Council

**NEFSC** Northeast Fisheries Science Center

**NEPA** National Environmental Policy Act

**NMFS** National Marine Fisheries Service

**NOAA** National Oceanic and Atmospheric Administration

**OY** Optimum Yield

**PBR** Potential Biological Removal

**PDT** Plan Development Team

**RFA** Regulatory Flexibility Act

**RIR** Regulatory Impact Review

**RPA** Reasonable and Prudent Alternative

**SAFE** Stock Assessment and Fishery Evaluation

**SARC** Stock Assessment Review Committee

**SAW** Stock Assessment Workshop

**SFA** Sustainable Fisheries Act

**SIA** Social Impact Assessment

**SNE** Southern New England

**TAC** Total Allowable Catch

**USFWS** U.S. Fish & Wildlife Service

**VTR** Vessel Trip Report

**WMC** Whiting Monitoring Committee

## 9.0 GLOSSARY

**Amendment.** A formal change to a fishery management plan (FMP). The Council prepares amendments and submits them to the Secretary of Commerce for review and approval. The Council may also change FMPs through a “framework adjustment “ (see below).

**B.** Biomass, measured in terms of total weight, spawning capacity, or other appropriate units of production.

**$B_{MSY}$ .** Long term average exploitable biomass that would be achieved if fishing at a constant fishing mortality rate equal to  $F_{MSY}$ . For most stocks,  $B_{MSY}$  is about  $\frac{1}{2}$  of the carrying capacity. Overfishing definition control rules usually call for action when biomass is below  $\frac{1}{4}$  or  $\frac{1}{2}$   $B_{MSY}$ , depending on the species.

**$B_{target}$ .** A desirable biomass to maintain fishery stocks. This is usually synonymous with  $B_{MSY}$  or its proxy.

**$B_{threshold}$ .** 1) A limit reference point for biomass that defines an unacceptably low biomass i.e., puts a stock at high risk (recruitment failure, collapse, reduced long term yields, etc). 2) A biomass threshold that the SFA requires for defining when a stock is overfished. A stock is overfished if its biomass is below  $B_{threshold}$ . A determination of overfished triggers the SFA requirement for a rebuilding plan to achieve  $B_{target}$  as soon as possible, usually not to exceed 10 years except certain requirements are met.  $B_{threshold}$  is also known as  $B_{minimum}$ .

**Bycatch.** Fish that are harvested in a fishery, but which are not sold or kept for personal use. This includes economic discards and regulatory discards. The fish that are being targeted may be bycatch if they are not retained.

**Environmental Impact Statement (EIS).** An analysis of the expected impacts of a fishery management plan (or some other proposed federal action) on the environment and on people, initially prepared as a “Draft” (DEIS) for public comment. After an initial EIS is prepared for a plan, subsequent analyses are called “Supplemental.” The Final EIS is referred to as the Final Supplemental Environmental Impact Statement (FSEIS).

**Exempted Fisheries.** Currently, any fishery determined by the Regional Director to have less than a 5% regulated species bycatch, by weight, of total catch according to 50 CFR §648.80 (a)(7).

**Fishing effort.** The amount of time and fishing power used to harvest fish. Fishing power is a function of gear size, boat size and horsepower.

**$F_{MSY}$ .** A fishing mortality rate that would produce MSY when the stock biomass is sufficient for producing MSY on a continuing basis.

**Framework adjustments.** Adjustments within a range of measures previously specified in a fishery management plan (FMP). A change usually can be made more quickly and

easily by a framework adjustment than through an amendment. For plans developed by the New England Council, the procedure requires at least two Council meetings including at least one public hearing and an evaluation of environmental impacts not already analyzed as part of the FMP.

**F<sub>threshold</sub>.** 1) The maximum fishing mortality rate allowed on a stock and used to define overfishing for status determination. 2) The maximum fishing mortality rate allowed for a given biomass as defined by a control rule.

**Landings.** The portion of the catch that is harvested for personal use or sold.

**Metric ton.** A unit of weight equal to a thousand kilograms (1 kg = 2.2 lbs.). A metric ton is equivalent to 2,205 lbs. A thousand metric tons is equivalent to 2.2 million lbs.

**MSY.** Maximum sustainable yield. The largest long-term average yield (catch) that can be taken from a stock under prevailing ecological and environmental conditions.

**Overfished.** An overfished stock is one “whose size is sufficiently small that a change in management practices is required in order to achieve an appropriate level and rate of rebuilding.”

**Overfishing.** Overfishing “occurs whenever a stock or stock complex is subjected to a rate or level of fishing mortality that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis.”

**Reference Points.** Values of parameters (ex., B MSY, F MSY, F 0.1) that are useful benchmarks for guiding management decisions. Biological reference points are typically limits that should not be exceeded with significant probability or targets for management.

**Small Mesh Multispecies.** A subset of the groundfish species that are prosecuted with small mesh (less than 4-inches), including silver hake (whiting), red hake (ling), and offshore hake (blackeye/bigeye whiting). The management program for small mesh multispecies was implemented in Amendment 12 to the Northeast Multispecies FMP.

**Stock.** A grouping of a species usually based on genetic relationship, geographic distribution and movement patterns. A region may have more than one stock of a species (for example, Gulf of Maine cod and Georges Bank cod).



## 10.0 REFERENCES

- Aguirre International, 1996. *An Appraisal of the Social and Cultural Aspects of the Multispecies Groundfish Fishery in New England and the Mid-Atlantic Regions*, a report submitted to the National Oceanographic and Atmospheric Administration.
- Barrow, C.J., 1997. *Environmental and Social Impact Assessment: An Introduction*. Arnold/Hodder Headline, London. x + 297 pp.
- Burdge, R.J., 1998. *A Conceptual Approach to Social Impact Assessment (Revised Edition)*. Social Ecology Press, Madison, WI. vi + 281 pp.
- Hall-Arber, Madeleine, Christopher Dyer, John Poggie, James McNally and Renee Gagne, 2001. *Fishing Communities and Fishing Dependency in the Northeast Region of the United States*. MARFIN Project Final Report to National Marine Fisheries Service.
- National Oceanic and Atmospheric Administration-National Marine Fisheries Service. March 2001. Guidance for Social Impact Assessment. Draft memorandum distributed to technical staff of fishery management councils, 38.
- NEFMC. 1998. Omnibus Essential Fish Habitat Amendment (Amendment 11 to the Northeast Multispecies FMP, Amendment 9 to the Sea Scallop FMP, Amendment 1 to the Monkfish FMP, Amendment 1 to the Atlantic Salmon FMP, and Sections of the Atlantic Herring FMP).
- NEFMC. 1996. Amendment 7 to the Northeast Multispecies Fishery Management Plan.
- NEFMC. 1994. Amendment 5 to the Northeast Multispecies Fishery Management Plan.
- NEFMC. 1999. Amendment 12 to the Northeast Multispecies FMP.
- NEFMC. 1999. Framework 32 to the Northeast Multispecies FMP.
- NEFMC. 2000. Framework 35 to the Northeast Multispecies FMP.
- NEFMC. 2001. 2001 Stock Assessment and Fishery Evaluation (SAFE) Report for Small Mesh Multispecies.
- NEFMC. 2001. Report from the Groundfish Social Impact Informational Meetings.
- NEFMC. 2002. 2002 Stock Assessment and Fishery Evaluation (SAFE) Report for Small Mesh Multispecies.
- NMFS and USFWS. 1992b. Recovery plan for leatherback turtles (*Demochelys coriacea*) in the U.S. Caribbean, Atlantic and Gulf of Mexico. National Marine Fisheries Service,

- Washington, D.C. 68 pp.
- NMFS and USFWS. 1993. Recovery plan for the U.S. population of loggerhead turtle (*Caretta caretta*). National Marine Fisheries Service, Washington, D.C. 71 pp.
- NMFS and USFWS. 1995. Status reviews for sea turtles listed under the Endangered Species Act of 1973. National Marine Fisheries Service, Silver Spring, Maryland. 139 pp.
- NMFS and USFWS. 1998. Recovery plan for U.S. population of Atlantic green turtle (*Chelonia mydas*). National Marine Fisheries Service, Washington, D.C. 52 pp.
- Turtle Expert Working Group (TEWG). 1998. An assessment of the Kemp's ridley (*Lepidochelys kempii*) and loggerhead (*Caretta caretta*) sea turtle populations in the Western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-409. 96 pp.
- Turtle Expert Working Group (TEWG). 2000. Assessment update for the Kemp's ridley and loggerhead sea turtle populations in the western North Atlantic. U.S. Dept. Comm. NOAA Tech. Mem. NMFS-SEFSC-444, 115 pp.
- USFWS. 1997. Synopsis of the biological data on the green turtle, *Chelonia mydas* (Linnaeus 1758). Biological Report 97(1). U.S. Fish and Wildlife Service, Washington, D.C. 120 pp.
- USFWS and NMFS. 1992a. Recovery plan for the Kemp's ridley sea turtle (*Lepidochelys kempii*). National Marine Fisheries Service, St. Petersburg, FL. 48 pp.
- Waring, G.T., J.M. Quintal, S.L. Swartz (eds). 2001. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments - 2001. NOAA Technical Memorandum NMFS-NE-168. 310 pp.