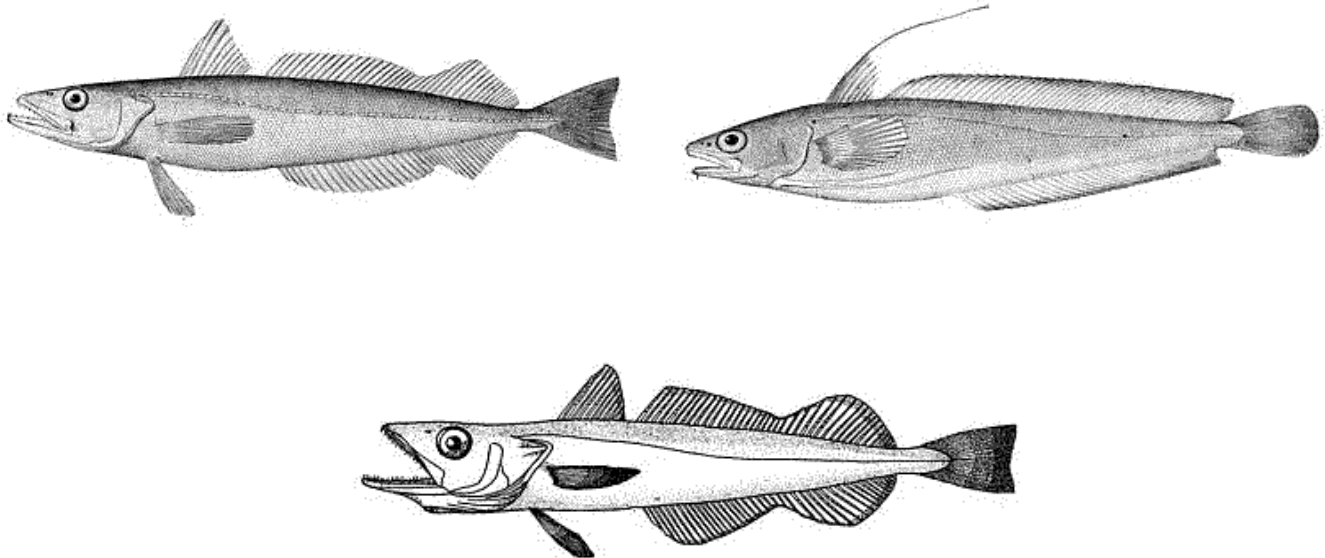


FRAMEWORK ADJUSTMENT 35
to the
NORTHEAST MULTISPECIES FISHERY MANAGEMENT PLAN
(for Whiting, Red Hake, & Offshore Hake)

To Establish a Seasonal Whiting Raised Footrope Trawl Fishery in Upper Cape Cod Bay



Prepared by the New England Fishery Management Council

in consultation with

National Marine Fisheries Service
Mid-Atlantic Fishery Management Council

Initial Framework Meeting:	January 18-20, 2000
Final Framework Meeting:	May 3-4, 2000
Submitted by NEFMC:	May 31, 2000

Executive Summary

The New England Fishery Management Council is seeking to modify existing multispecies regulations specified in §648.80(a) to allow for a seasonal whiting raised footrope trawl fishery in upper Cape Cod Bay and the southern Gulf of Maine. This action will allow for a transition from a successful experimental fishery for whiting and red hake focused on minimizing regulated species bycatch to a more permanent fishery that provides a seasonal small mesh fishing opportunity for vessels fishing in and around the Gulf of Maine.

The proposed season for the raised footrope trawl fishery is September 1 – November 20. The proposed area is a subset of Areas 2B and 4 from the experimental fishery and encompasses the area that was most heavily fished and most heavily sampled by observers during the annual experimental fisheries from 1996-1999. Bycatch restrictions for the fishery are proposed to be the same as they were in the experimental fishery, which are more restrictive than those for *Multispecies Exempted Fisheries* and are intended to discourage vessels from rigging their gear improperly. Net specifications include a requirement for participating vessels to use a minimum 2.5-inch mesh and a prohibition on the use of net strengtheners when participating in this fishery. This framework document also proposes some specifications for properly “rigging” the raised footrope trawl gear; these specifications are intended to apply to Small Mesh Areas 1 and 2 in addition to the raised footrope trawl fishery established by this framework adjustment.

Participants in the raised footrope trawl fishery will be allowed to fish within the area specified for this raised footrope trawl fishery during the months of October and November when Blocks 124 and 125 are scheduled to be “closed” to gear capable of catching groundfish. Vessels will be required to obtain a letter of authorization to fish in the raised footrope trawl for the entire season (similar to the Cultivator Shoal Whiting Fishery) and will be limited to fishing only for small mesh multispecies in the raised footrope trawl area during the October/November closure.

Analyses presented in this framework document indicate that establishing a seasonal whiting raised footrope trawl fishery in upper Cape Cod Bay will not significantly impact fishing mortality reduction or rebuilding schedules for any small mesh multispecies or large mesh regulated groundfish stocks. The low absolute catches of large mesh regulated species projected for the fishery and the fact that the exempted fishery is more restricted in area and season than the experimental fishery in 1999 suggests that the raised footrope trawl fishery is unlikely to exert any additional mortality on large mesh regulated species.

The data presented in this framework document indicate that 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 Massachusetts DMF. The Council believes that the development of the raised footrope trawl demonstrates the creativity and innovation that will keep the small mesh fishing fleet in the Gulf of Maine viable now and in the future. In turn, the Council wants to provide these vessels with an opportunity to catch whiting in the Gulf of Maine during the fall and winter. The Provincetown dayboats in particular are critically dependent on nearshore access to whiting fishing grounds.

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1.0 INTRODUCTION AND BACKGROUND

1.1 BACKGROUND

Beginning in 1994, with the implementation of Amendment 5 to the Northeast Multispecies Fishery Management Plan (FMP), vessels targeting whiting and red hake were increasingly restricted by federal regulations designed to protect large mesh regulated groundfish species in the Gulf of Maine. Small mesh fishing in New England became limited spatially and temporally by the establishment of Regulated Mesh Areas (RMAs) in the Gulf of Maine and on Georges Bank, offering few opportunities for fishermen who traditionally fished for species like whiting and red hake. Vessels in port communities like Provincetown (MA) and Gloucester (MA) faced the possible loss of a fishery that had become an important seasonal component of their operations.

Framework 9 to the Multispecies FMP, implemented in April of 1995, established regulations that prohibited small mesh fishing in the Gulf of Maine and on Georges Bank, initially implemented under emergency action in December of 1994. The prohibition on small mesh fishing was implemented to prevent high bycatch levels of regulated groundfish, particularly cod, haddock and yellowtail flounder, with expected displacement of fishing effort from heavily regulated large mesh groundfish fishing on to small mesh fisheries. However, to allow small mesh fisheries that have no or very low bycatch of regulated groundfish, the emergency and framework actions established a program through which a fishery could be “exempted” from multispecies minimum mesh regulations if it is certified by the Regional Administrator to have a bycatch of the ten regulated groundfish species that is less than five percent of the total catch. In 1996, through the implementation of Amendment 7 to the FMP, the restrictions were expanded, and any fishery not conducted with exempted gear (gear not capable of catching regulated multispecies) or not under a multispecies or scallop day at sea was prohibited unless it met the 5% regulated multispecies bycatch standard for exempted fisheries.

Small mesh whiting and red hake fisheries in the Gulf of Maine were largely eliminated by the restrictions, including the fisheries and areas targeted by vessels originating from Provincetown and Gloucester. Despite the fact that a majority of these waters fell under state authority, almost all small mesh fishermen in the area possess federal multispecies permits, subjecting them to federal restrictions regardless of where they fish. In turn, Massachusetts fishermen began seeking federal exemptions to operate their traditional small mesh fisheries. They turned to the Massachusetts Division of Marine Fisheries (DMF) to help them develop a whiting fishery that minimizes the bycatch of regulated species.

According to the regulations for the Northeast multispecies fishery, a *Multispecies Exempted Fishery* may be added if there are sufficient data to ascertain the amount of regulated species bycatch and if the Regional Administrator, after consultation with the Council, determines that the percentage of regulated species bycatch is, or can be reduced to, less than five percent, by weight, of the total catch and that such an exemption will not jeopardize fishing mortality objectives. Bycatch data necessary to establish a *Multispecies Exempted Fishery* are most often collected through the establishment of an experimental fishery administered through NMFS’ *Exempted Experimental Fishing Program*. At a minimum, *Multispecies Exempted Fisheries* are

required to comply with the following bycatch provisions:

- a prohibition on the possession of regulated species (Atlantic cod, witch flounder, American plaice, yellowtail flounder, haddock, pollock, winter flounder, windowpane flounder, redfish, and white hake)
- 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 current multispecies regulations allow for the Council to recommend to the Regional Administrator, through the framework adjustment process, additions or deletions to *Multispecies Exempted Fisheries*, either existing or proposed. This may occur in fisheries for which there are insufficient data or information for the Regional Administrator to determine, without providing an opportunity for public comment, the percentage bycatch of regulated species. In addition, the Council may recommend an addition or deletion to *Multispecies Exempted Fisheries* if the addition or deletion is consistent with the goals and objectives of the FMP. In light of extensive cooperative research completed by the Massachusetts Division of Marine Fisheries and the fishing industry, as well as the importance of fishery as an economic alternative for the industry, the Council considers the raised footrope trawl fishery to be a reasonable addition to the list of *Multispecies Exempted Fisheries*.

1.2 GEAR DESCRIPTION

The “raised footrope trawl” was developed by scientists at Massachusetts DMF’s Conservation Engineering Department in cooperation with the fishing industry in Provincetown and Gloucester. The raised footrope trawl is designed to fish 1-2 feet above the ocean bottom and was developed primarily to catch whiting, red hake, and dogfish. The design capitalizes on fishes’ variable habitat preferences as well as swimming behaviors among target and non-target species; the net retains those fish that swim above the substrate while passing over those that reside closer to it. The net’s most innovative feature is a chain sweep that is longer than the footrope. This allows the chain sweep to contact the bottom after the footrope has already passed by. Slow-swimming demersal fish and most invertebrates are not able to enter the mouth of the net if they are disturbed by the sweep because the mouth of the net has already passed over them.

Separator trawls and raised footrope trawls have been used in certain fisheries in the Gulf Coast as well in the North Sea. The net design for this whiting fishery started with research on a Provincetown trawler in 1991. The original “experiments” were accomplished when DMF, with New England Fishery Management Council funding, performed a set of gear trials with a trouser-trawl (a specially designed horizontal separator net with two codends) fitted with a moveable panel in the net mouth, and determined that at a height of 1-2 feet “off-bottom,” optimal trawl catches would result with most whiting retained and flatfish reduced by up to 95% (Carr and Caruso, 1993). This net separated catch into upper and lower codends so as to determine the vertical availability to the trawl net. From this work, the net was modified into a raised footrope trawl. The trawl was further used in experimental fall whiting fisheries during the mid-1990s to ascertain its effectiveness as a commercial trawl. The intent of the trawl is to

fish for whiting but eliminate, or sharply reduce, the catch of flatfish and other bottom tending species. The raised footrope trawl, version one, has allowed a fall fishery in Massachusetts and Cape Cod Bay because of its success. Massachusetts DMF intends to continue research to refine the net's design for use in New England's small mesh fisheries.

1.3 HISTORY OF THE EXPERIMENTAL FISHERY

DMF has promoted the raised footrope trawl as a bycatch solution for the Massachusetts whiting and red hake fishery in Cape Cod Bay and lower Massachusetts Bay with its predominate bycatch of juvenile flatfish: American plaice, yellowtail flounder, and winter flounder. DMF's sea sampling during 1992-1994 showed that standard whiting trawls with heavy groundgear nearly always caught substantial amounts of juvenile flatfish, and nearly all tows exceeded the 5% regulated species bycatch standard. Discard mortality of juvenile flounder and new-shelled lobsters (common during fall) was presumed to be substantial. In 1994, DMF furnished the National Marine Fisheries Service (NMFS) with whiting fishery sea sampling data for Cape Cod Bay that confirmed bycatch in this area was above 5% and was not exemptible under the 5% standard.

Since 1995, DMF has applied to NMFS for exempted experimental permits to allow a limited number of trawlers to target small mesh species from September through December in upper Cape Cod Bay and adjacent waters with a raised footrope trawl. DMF solicited fishermen's opinions about the proposed conduct of the fishery, such as appropriate areas, trawl design specifications, bycatch restrictions, and other issues. DMF has routinely met with fishermen from Chatham, Gloucester, and Provincetown to discuss developments in the experimental fishery. These fishermen were optimistic that the raised footrope trawl could solve bycatch problems, and they hoped to re-open certain areas during times when whiting and red hake catches historically have been productive.

From the outset, the experimental program's goals were to:

- 1) Continue research on optimal gear configurations to reduce bycatch and allow "clean" fisheries where bycatch of regulated species totals less than 5% of the overall weight of the catch on a consistent basis; and
- 2) Identify and verify – through sea sampling and catch reports – areas and times where viable fisheries for target species (whiting, red hake, dogfish) can be conducted.

DMF identified two key elements needed for success of the fishery: (1) educating fishermen about the gear's design and its proper use; and (2) promoting compliance through conservative bycatch restrictions and strong penalties for non-compliance. Also, fishermen and dealers noted a market incentive for fishing the net as designed – soft-bodied whiting and red hake are less likely to be damaged and will fetch a higher price when the catch is free of crabs, sculpins, lobster, and other hard-bodied or spiny organisms.

In late 1995 and during the summer of 1996, DMF conducted a single-vessel federally-permitted experimental fishery with a "raised footrope trawl" and enlisted the F/V Charlotte G., a Provincetown trawler (McKiernan et al. 1996). DMF supplied 100% observer coverage to document *all* trips. After considerable refinement, catches of non-target species were

consistently below 5%.

Each year after approving DMF's list of applicants, NMFS sent vessels' federal experimental fishery authorizations to DMF. The number of permitted vessels in the fishery increased each year from 1995-1998 with a low of one vessel in 1995 to a high of 43 in 1998. The number of participants was lowered in the 1999 season to 28 as part of DMF's plan to closely monitor and manage, if necessary, regulated groundfish bycatch. DMF tried to meet with captains or vessel owners to discuss permit conditions and to inspect the vessel's trawl for compliance with state specifications. After net inspections, those vessels and captains that participated in past DMF raised footrope trawl experimental fisheries were given their state and federal experimental permits. Vessels without prior experience using the experimental net were required to "earn" the permits by demonstrating proficiency with the design by taking a DMF observer and showing bycatch levels less than 5% of the overall catch.

In October 1996, NMFS granted DMF's request to open the experimental fishery to 14 other local trawlers that had historically participated in Cape Cod Bay's whiting fisheries. Sea sampling over 20 trips showed whiting, red hake, and dogfish at about 90% of the retained catch. About 28% of the overall catch was discarded; this contrasted with past years' sampling (when "normal" whiting nets were deployed) that showed about 60-70% of the catch discarded. Catches of juvenile flounders dropped in 1996 to minimal levels, and 19 of 20 sampled trips were below 5% in terms of regulated species bycatch. The early November departure of whiting and red hake from the small, approved fishing area prevented DMF from collecting further results, since the vessels were not permitted outside of the requested area in northern Cape Cod Bay/Massachusetts Bay.

During May and June 1997, DMF continued this work with a small-scale experiment including six vessels. Vessels made paired tows where catches from a traditional whiting trawl and a raised footrope trawl were compared. With observers aboard each trip, three Gloucester vessels targeted whiting off Cape Ann, and three Provincetown vessels targeted dogfish in waters adjacent to Cape Cod. Off Cape Ann, the results were dramatic – traditional whiting nets' regulated flatfish species catch averaged 171 lbs./hr, but was lowered to 29 lbs./hr with the raised footrope trawl, a reduction of 83%. However, even with the low bycatch, low whiting catch rates caused most tows to exceed the 5% allowance standard. Off Provincetown, the bycatch reduction results were similar, with an 89% reduction in regulated flatfish (66.2 lbs./hr. to 7.1 lbs./hr) attributable to use of the raised footrope trawl.

During the fall of 1997 and 1998, DMF tried to broaden the areas that the fishery might be approved to include other areas in federal waters adjacent to Massachusetts. DMF sought to re-open northern Cape Cod Bay, portions of Massachusetts Bay (west of Stellwagen Bank), and areas east of Cape Cod (the "Nauset" area) to traditional small mesh fisheries for whiting and red hake. Some of these areas had been requested for opening by industry in the past, but those requests were denied by NMFS after analyses showed that bycatch of regulated species had, or was likely to, exceed 5% with an unmodified otter trawl (NMFS, 1995).

Results in 1997 and 1998 showed bycatch of regulated species averaging above 5% in the area along the western edge of Stellwagen Bank. Consequently, DMF did not request the

experimental fishery be conducted in this area during 1999. Also, there was minimal fishing effort expended in two other areas approved for experimental fishing north and west of Stellwagen, so DMF did not request an experimental fishery there either.

In 1999, the raised footrope trawl fishery was approved on a limited basis by NMFS. For September – December 1999, DMF requested that NMFS re-authorize the experimental fishery for only three of the six previously studied areas: upper Cape Cod Bay (Area 2B), lower Stellwagen (Area 4) and east of Cape Cod (Area 3). Area 2B is primarily northern Cape Cod Bay and southern Massachusetts Bay, the site of DMF's 1995-1996 federal experimental fishery programs and has been the site of DMF's past gear and sea sampling studies dating back to 1989. Area 4 is the adjacent area to the east that encompasses southern Stellwagen Bank. In 1997, Provincetown fishermen requested Area 4 to be opened after October 20 when whiting were expected to migrate out of the southern portions of Area 2B. This area is fished routinely by Provincetown-based vessels because of their proximity to the homeport (Figure 1). DMF did not request that the other three areas north and west of Stellwagen (Areas 1, 2A, and 2C) be re-opened for experimental fishing in 1999 because in two areas (1 and 2A), fishing effort was minimal during the past two year's experimental fisheries, and in the third area (2C), bycatch of cod and redfish was high enough to preclude the 5% standard from being achieved.

The 1999 fishery was most notable because during the two most productive months (October and November), much of the requested area in upper Cape Cod Bay was scheduled to be closed by federal "rolling closures" to all gears capable of catching groundfish (Blocks 124 and 125). These closures were implemented through Framework 27 to the Northeast Multispecies FMP. In a letter dated August 19, 1999, NMFS' Regional Administrator announced that the fishery would be approved, but not in the areas encompassed by the October-November Rolling Closure.

The impacts of the 1999 "rolling closures" would have prevented DMF from conducting gear trials during the two most productive months of the experimental fishery. Moreover, impacts on fishermen, the whiting fleet, and dependent ports would have been substantial. After considerable discussion and negotiation among DMF, industry, NMFS, the Council, and others, the experimental fishery was allowed to proceed in the "rolling closure" for approved vessels. Federal official's concerns about the fishery occurring within the October-November "rolling closure" warranted enhanced data collection by DMF during the 1999 program. Consequently, the 1999 program was the largest and most intense data gathering exercise ever conducted by DMF. Data collection was intense through sea sampling (more than 60 trips) and the submission of fishermen's reports regarding the content and location of each tow on state-issued logs.

Figure 1 Map of 1999 Raised Footrope Trawl Experimental Fishery Areas (1999)

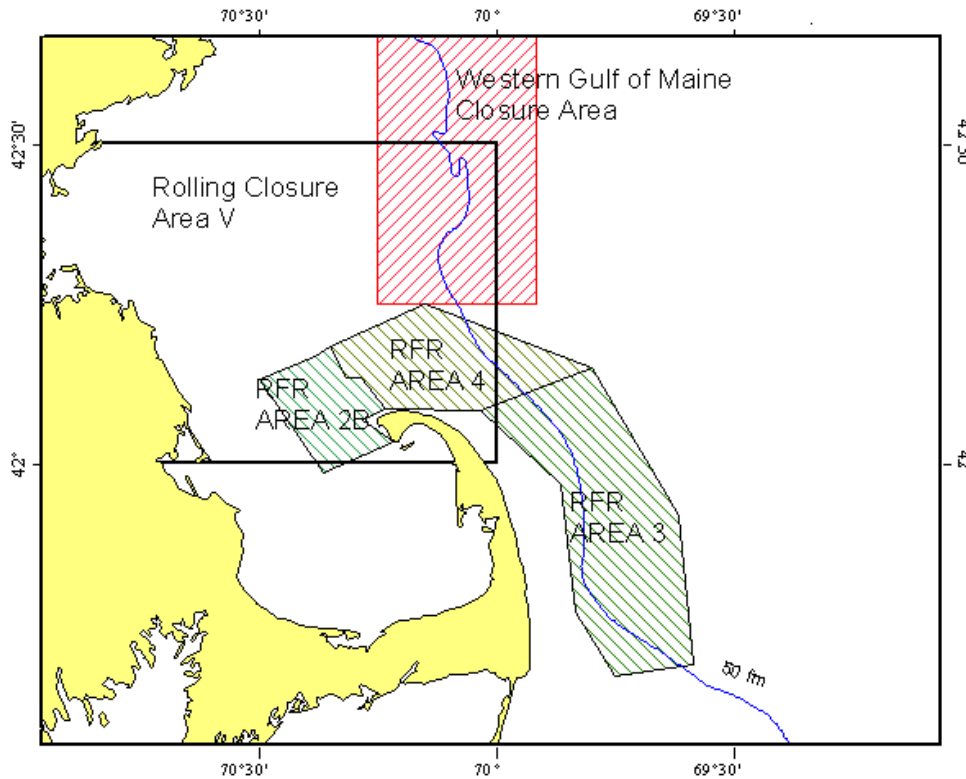


Figure 2 – Figure 5 illustrate (by month) all observed and unobserved tows reported in Areas 2B and 4 during the 1999 experimental raised footrope trawl fishery. The tows have been plotted by drawing a straight line between reported (by either fishermen or observers) start and end coordinates. Note that some of the tow locations extend beyond the boundaries of the experimental area and/or across land. This is because the tow data have been plotted exactly as they were reported. DMF attributes some of this to either transcription error or GPS error. Also, some tow coordinates were reported to DMF in LORAN and were subsequently converted to latitude/longitude, which could account for start or end points slightly outside the experimental area. These figures demonstrate that effort in this fishery is very concentrated in areas where whiting are located; when participating in this fishery, vessels “chase” the whiting and often fish in close proximity to one another.

Figure 2 Observed and Unobserved Tows Reported in Areas 2B and 4 During September in the 1999 Experimental Raised Footrope Trawl Fishery

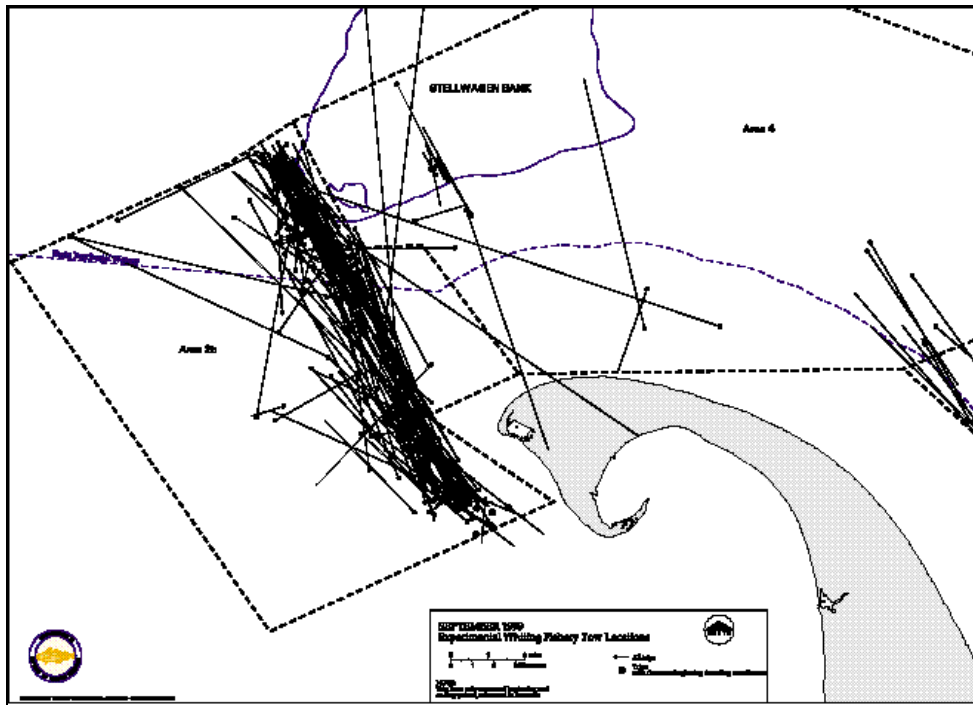


Figure 3 Observed and Unobserved Tows Reported in Areas 2B and 4 During October in the 1999 Experimental Raised Footrope Trawl Fishery

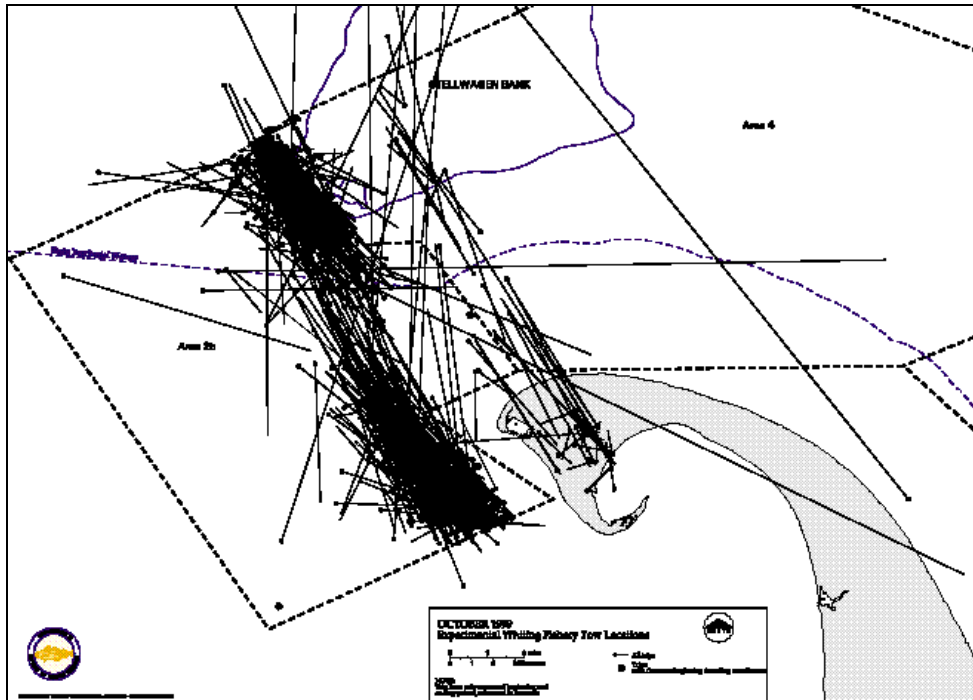


Figure 4 Observed and Unobserved Tows Reported in Areas 2B and 4 During November in the 1999 Experimental Raised Footrope Trawl Fishery

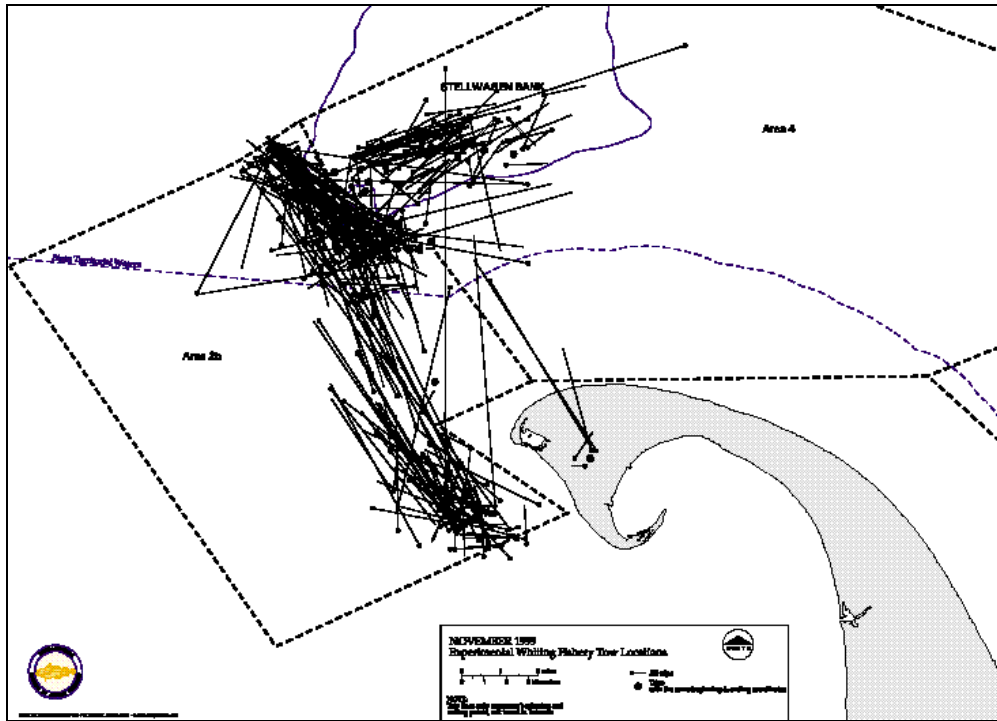
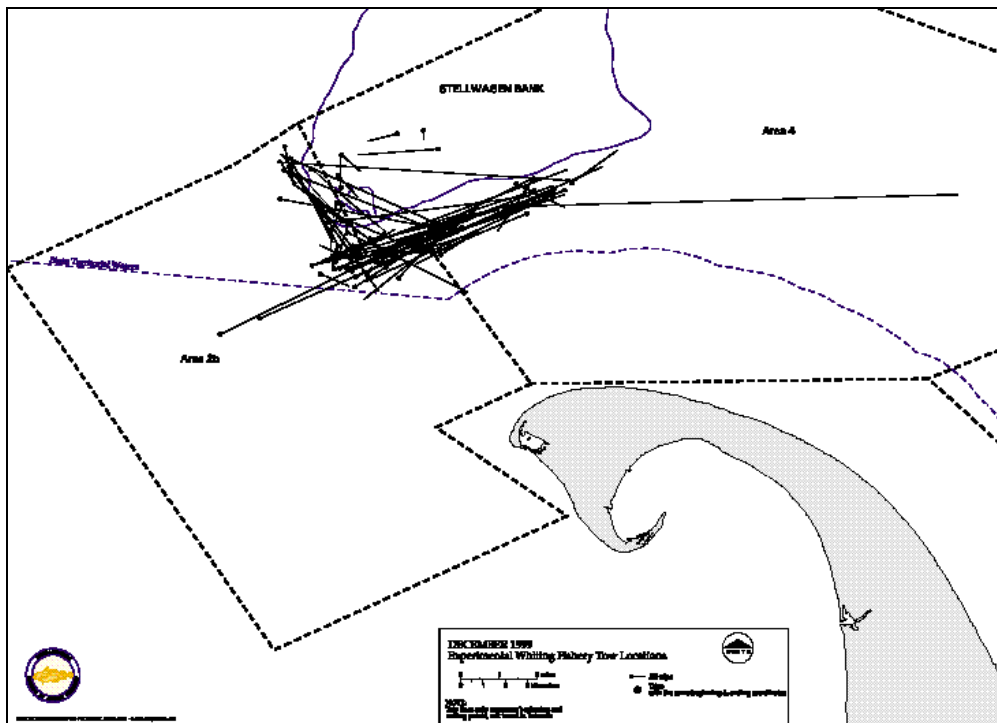


Figure 5 Observed and Unobserved Tows Reported in Areas 2B and 4 During December in the 1999 Experimental Raised Footrope Trawl Fishery



For more detailed information about the experimental raised footrope trawl fisheries, see Appendix II. In addition, annual reports on the experimental fisheries (1997-1999) are available from Massachusetts DMF and are referenced in Section 7.0 of this framework document.

2.0 PURPOSE

The purpose of this framework adjustment is to modify existing multispecies regulations to establish a seasonal whiting raised footrope trawl fishery in northern Cape Cod Bay. This action will allow for a transition from a successful experimental fishery for whiting and red hake focused on minimizing regulated species bycatch to a more permanent fishery that provides a seasonal small mesh fishing opportunity for vessels fishing in the southern Gulf of Maine.

2.1 NEED FOR ADJUSTMENT

In a letter dated January 13, 2000 (Appendix I), the NMFS Northeast Regional Administrator informed the Council of her decision to *not* grant an exemption for the raised footrope trawl fishery based on the 5% groundfish bycatch standard. Although DMF demonstrated that regulated species bycatch levels consistently averaged below 5% in the fishery, NMFS denied the request for the exemption because regulated species bycatch on a *few* individual trips exceeded 5%. The letter from NMFS explained that when the multispecies exempted fisheries program was enacted, the Council directed NMFS to take a conservative approach for granting multispecies exemptions and that based on a consistent application of the 5% standard (on a per-trip basis), NMFS does not have the authority to grant such an exemption. The letter noted, however, that while the Regional Administrator's authority is limited by the 5% criteria, the Council's authority is not. The letter urges the Council to consider developing a framework adjustment to allow this fishery to occur, especially in light of the research completed by DMF and the industry as well as the importance of this fishery as an economic alternative for fishermen in and around the Gulf of Maine. The Council is submitting this framework adjustment in response to the January 13, 2000 letter from the Regional Administrator.

2.2 OBJECTIVES

The primary objective of this framework adjustment is to provide the industry with a viable small mesh fishing opportunity in the Gulf of Maine consistent with the conservation objectives for both regulated multispecies and small mesh multispecies. This objective will be achieved by establishing a seasonal small mesh raised footrope trawl fishery in northern Cape Cod Bay with 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
- prohibiting the catch of bottom-dwelling species that the raised footrope trawl is designed to avoid (monkfish, lobsters, for example).

In addition, this framework adjustment is intended to achieve secondary objectives, most of which relate to the primary objective, including:

- improving flexibility for the fishing fleet
- other objectives consistent with all fishery management plans, such as maximizing the

enforceability of regulations, minimizing administrative burdens, and minimizing impacts on habitat, marine mammals, and endangered and threatened species.

2.3 OPPORTUNITY FOR PUBLIC COMMENT

The initial meeting for this framework adjustment occurred at the January 18-20, 2000 Council meeting. However, the Council had intended to include measures to allow for a raised footrope trawl fishery in Framework 33 to the Multispecies FMP (the groundfish annual adjustment for the 2000-2001 fishing year) and even began discussing this issue during the development of Framework 31. Because the National Marine Fisheries Service did not approve this fishery as a *Multispecies Exempted Fishery* under the 5% regulated species bycatch standard, the Council agreed to delay action regarding the raised footrope trawl fishery until a framework adjustment could be developed to add this fishery to the list of *Multispecies Exempted Fisheries*. This framework adjustment serves as the mechanism to not only add this 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. Opportunity for public comment regarding this action occurred prior to the initial framework meeting, during Groundfish Committee and Council meetings that addressed Framework 33 to the Multispecies FMP. Table 1 lists meetings for which public notice included discussion of the raised footrope trawl fishery.

Table 1 Opportunity for Public Comment on Framework 35 Measures

DATE	MEETING	AGENDA/DISCUSSION
11/16-19/99	Council	<ul style="list-style-type: none"> Initial Meeting for Framework 33
12/13/99	Groundfish Committee and Advisory Panel	<ul style="list-style-type: none"> Develop options, as needed, for recreational fishery, scallop vessel access to closed areas, and exemptions to closed areas (including the raised footrope trawl fishery)
1/13/00	Groundfish Advisory Panel	<ul style="list-style-type: none"> Review draft Framework 33 document, recommend preferred alternatives to the Groundfish Committee
1/14/00	Groundfish Committee	<ul style="list-style-type: none"> Review draft Framework 33 document, recommend preferred alternatives to the Council
1/18-20/00	Council	<ul style="list-style-type: none"> Final meeting for Framework 33 Initial meeting for Framework 35
5/3-4/00	Council	<ul style="list-style-type: none"> Final meeting for Framework 35: finalize framework measures

The mailing lists for meeting notices contain approximately 900 and 1,600 interested parties for 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 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.

3.0 PROPOSED ACTION AND ALTERNATIVES

The Council proposes the management measures/specifications described in Section 3.1 for implementation through this framework adjustment. Section 3.2 contains a description of the alternatives considered and rejected during the framework development process as well as a discussion of the reasons for rejection.

3.1 PROPOSED ACTION

3.1.1 Raised Footrope Trawl Fishery Season

The whiting raised footrope trawl fishery season is proposed to begin on September 1 and end on November 20 of each year.

Discussion and Rationale: This period encompasses the period for which Massachusetts DMF has documented the presence of harvestable quantities of whiting and red hake in the areas of upper Cape Cod Bay and Massachusetts Bay. While these species may also be available in certain months prior to September, DMF experimental fisheries have documented only a few trips during spring and summer months – too few to support an exempted fishery prior to September at this time.

The closing date for the raised footrope trawl fishery (November 20) was chosen based on landings and bycatch trends identified through the series of experimental fisheries (1995 – 1999). During the past four years, DMF has documented a sharp decline in whiting catch rates in *most* years by mid- to late November, except in 1999 when catches remained high on top of southern Stellwagen Bank through the first week of December. However, cod bycatch spiked in late November and early December on top of Stellwagen Bank. *One half* of the estimated cod bycatch in the 1999 fishery occurred after November 20. In turn, DMF proposes to minimize expected cod bycatch (while still maximizing whiting catch) by closing the fishery on November 20 of each year.

DMF also considered trends in whiting ex-vessel value and price when proposing November 20 as the closing date for this fishery. According to both fishermen and dealers, whiting and red hake prices decrease during Thanksgiving week due to a lack of consumer demand. Dealers have reported to DMF that the urban fish distribution centers in New York and other cities are unable to accept fish to during the days prior to and following Thanksgiving Day. Therefore, while the fleet may sacrifice some potential whiting catch after November 20, the lower prices at that time reduce the economic impact this season closure may have. An earlier closing date for the fishery is not proposed because of the expected additional loss in whiting catch if the fishery were to close prior to November 20. A November 20 closing date minimizes cod bycatch while maximizing whiting catch and productivity in the fishery.

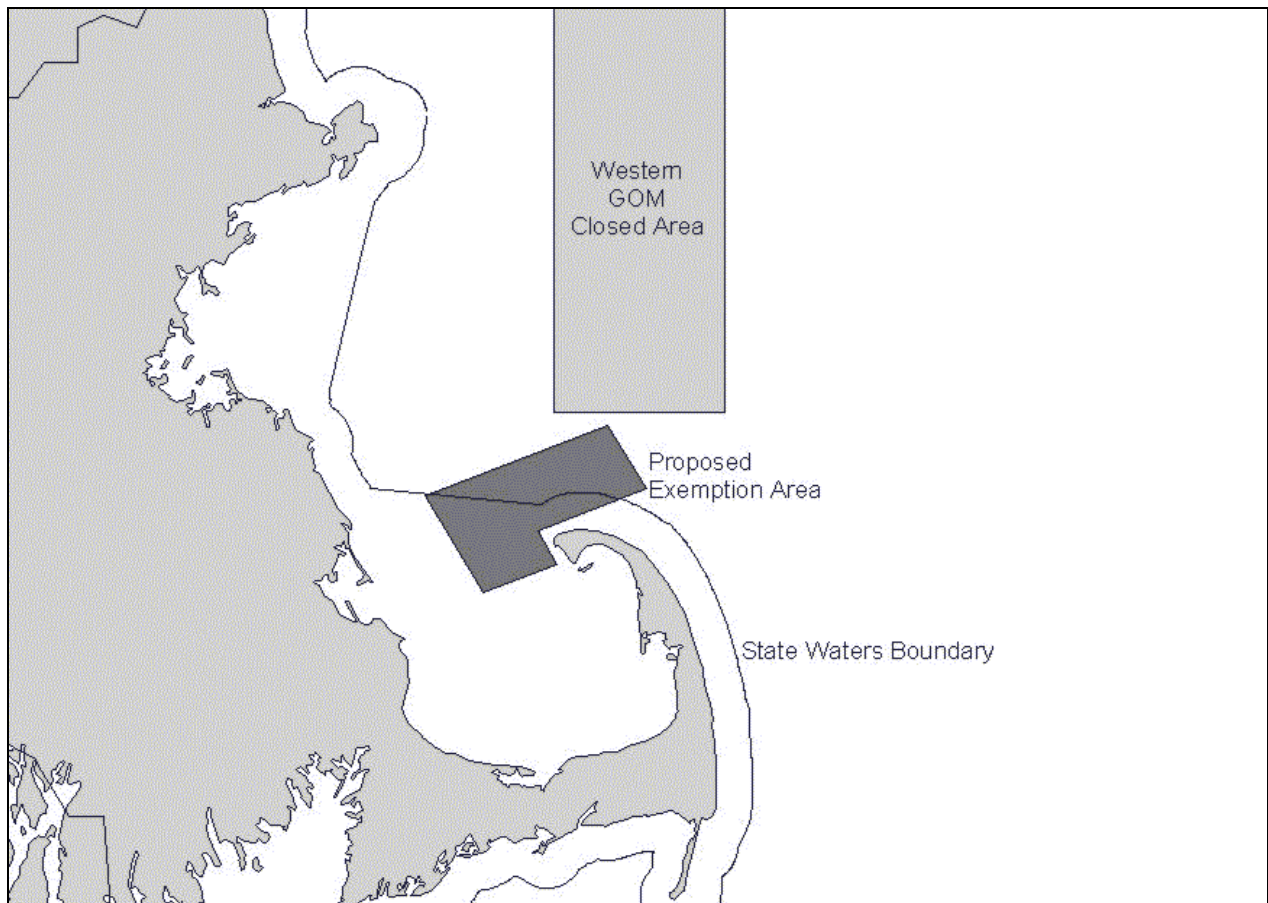
3.1.2 Raised Footrope Trawl Fishery Area

The proposed area for the raised footrope trawl exempted fishery is identified in Table 2 and Figure 6.

Table 2 Coordinates for Area Proposed for Raised Footrope Trawl Exempted Fishery

POINT NUMBER	LATITUDE		LONGITUDE	
	Degrees	Minutes	Degrees	Minutes
1	42	01.900	70	14.750
2	41	59.450	70	23.650
3	42	07.850	70	30.100
4	42	14.050	70	08.800
5	42	08.350	70	04.050
6	42	04.750	70	16.950
1	42	01.900	70	14.750

Figure 6 Map of Area Proposed for Raised Footrope Trawl Exempted Fishery



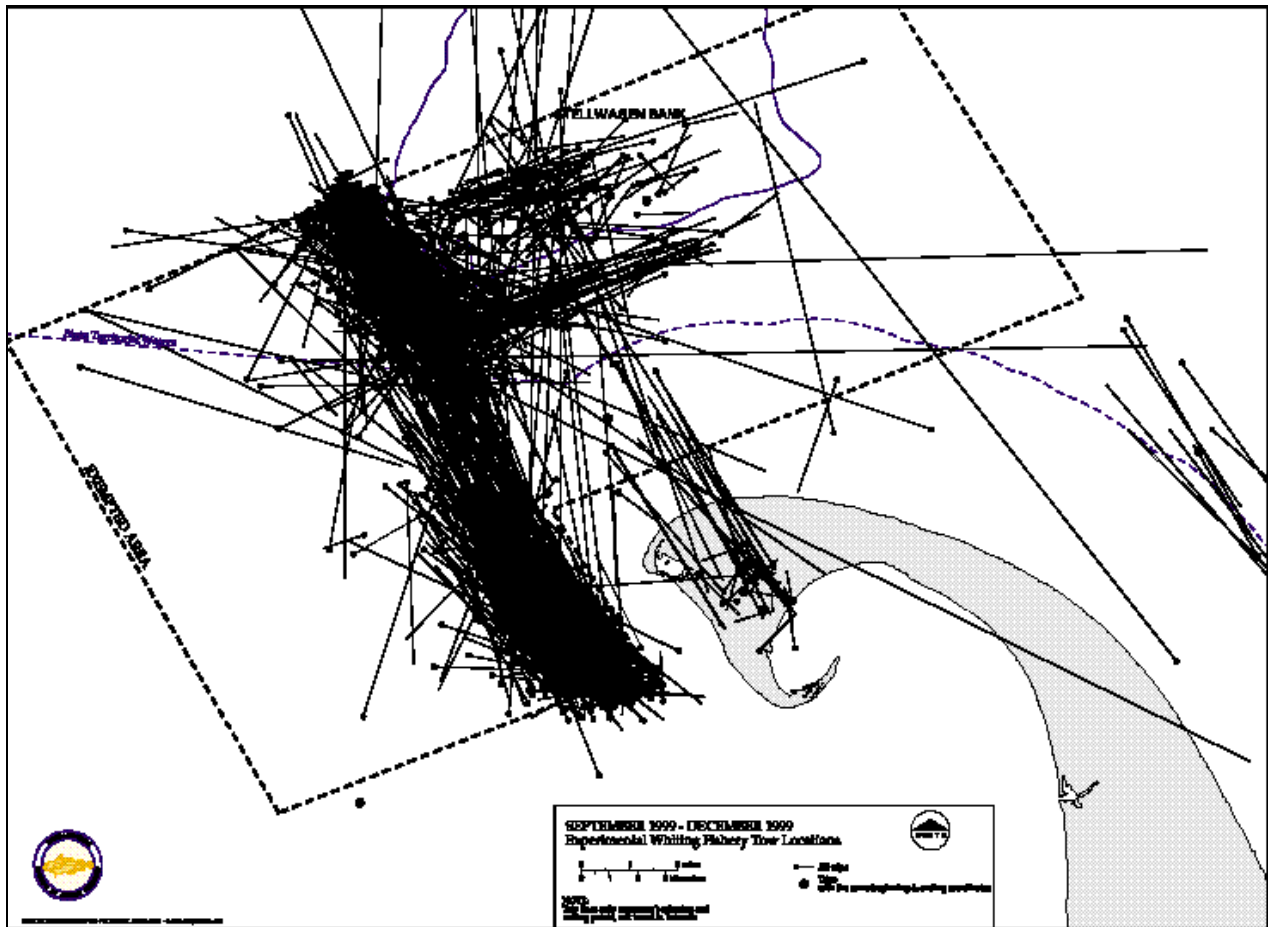
Discussion and Rationale: DMF is proposing a simplified area that encompasses most of the observed fishing activity in upper Cape Cod Bay and southern Stellwagen Bank and is essentially a combination of portions of DMF Experimental Fishery Areas 2B and 4. Area 2B is located in upper Cape Cod Bay (mostly in state waters) and has been fished traditionally by the Provincetown fleet. Trawlers in this area have been sampled intensively by DMF observers since the late 1980s, and this area has been the site of successful experimental whiting fisheries since 1995. Area 4 is located along southern Stellwagen Bank where Provincetown fishermen have historically fished during October and November after whiting catches decline in Cape Cod Bay. Once catches decline on southern Stellwagen, the fleet has historically followed what fishermen perceive to be a whiting migration along the back side (east) of Cape Cod to the “Nauset grounds” during November and December. In terms of overall area, the circumference of experimental Area 2B and Area 4 was 84.1 nautical miles. The circumference of the area proposed for exemption in this framework adjustment is 53.8 nautical miles. This represents a reduction in Areas 2B and 4 of about 36%.

The coordinates of the proposed area are refined slightly from those approved for previous experimental fisheries. They are designed to match those LORAN coordinates originally requested by industry representatives in 1996 and 1997 when experimental fisheries were conducted in these areas. During the past four years, some of the coordinates were altered through transcription error or rounding when transforming LORAN to latitude/longitude.

There are three changes from the experimental fisheries that are notable:

- (a) The northern boundary of the proposed area is further south than the line in the experimental fisheries; cod was reported near this line in 1998, so DMF moved the line south on November 6, 1998. The proposed line better coordinates with the LORAN 44160 line.
- (b) The area northeast of Provincetown (formerly the southern portion of Area 4) has been excluded from the proposed area since this area is primarily hard bottom and not suitable for the raised footrope trawl fishery. As expected, there was no documented fishing for whiting in this portion of Area 4 with the raised footrope trawl during the 1997-1999 experiments.
- (c) The eastern boundary of Area 4 was moved to the west. The eastern portion of Area 4 that is not proposed for exemption will be included as part of a limited experimental raised footrope trawl fishery east of Cape Cod (Area 3) that DMF will be proposing to NMFS for September – December 2000. Despite three years of work in this area, DMF seeks additional data collection on target species catch and regulated species bycatch before formally requesting that NMFS approve the area (or portion of the area) as a *Multispecies Exempted Fishery*.

Figure 7 All Observed and Unobserved Tows Reported in the Proposed Exemption Area During the 1999 Experimental Raised Footrope Trawl Fishery



3.1.3 Raised Footrope Trawl Gear Specifications

To ensure that raised footrope trawl nets are fished properly and to minimize the bycatch of regulated groundfish species, the Council is proposing the following net specifications for any vessel participating in this fishery. These specifications were developed through a series of gear tests completed by Massachusetts DMF (in cooperation with the industry) as part of the raised footrope trawl experimental fisheries from 1995-1999.

The Council is proposing that the raised footrope trawl gear specifications for Small Mesh Areas 1 and 2, as established by Framework 25 to the Multispecies FMP, be modified to reflect the specifications listed in Section 3.1.3.2 of this framework document (headrope, ground gear, footrope, drop chains, sweep). This will ensure consistency with all raised footrope trawl gear required in small mesh fisheries in the Gulf of Maine and will improve both fishermen's understanding and the enforceability of the raised footrope trawl gear specifications.

The net specifications listed in Section 3.1.3.1 of this document (minimum mesh size and prohibition from using strengtheners), however, are *not* intended to apply to Small Mesh Areas 1

and 2. In addition to small mesh multispecies, vessels target herring in Small Mesh Areas 1 and 2 and therefore use mesh smaller than 2.5-inches in the codend. The net specifications listed in Section 3.1.3.1 of this document are intended to apply *only* to the raised footrope trawl fishery established through this framework adjustment.

3.1.3.1 Net Specifications

The Council is proposing a minimum mesh size of 2.5-inches for vessels participating in the raised footrope trawl fishery, as well as a prohibition from using outside net strengtheners, even when fishing with 2.5-inch mesh. These specifications are intended to apply *only* to the raised footrope trawl fishery established in this framework adjustment (and *not* to Small Mesh Areas 1 and 2).

3.1.3.1.1 Minimum Mesh Size

For any vessel participating in this raised footrope trawl fishery, the minimum codend mesh size will be 2.5 inches. Minimum mesh size is measured by the inside stretch of the net. Nets can consist of either square or diamond mesh. In terms of management for small mesh multispecies (whiting, red hake, and offshore hake), 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).

3.1.3.1.2 Prohibition on the Use of Net Strengtheners

Although current regulations for small mesh multispecies allow the use of an outside net strengthener when fishing with 2.5-inch mesh (Framework 32), the use of liners, codend covers, and/or outside net strengtheners will be prohibited when participating in the raised footrope trawl fishery established in this framework adjustment.

3.1.3.2 Other Net Specifications

The following net specifications apply *not only* to the raised footrope trawl fishery established by this framework adjustment, *but also* to Small Mesh Areas 1 and 2, where use of the raised footrope trawl is already required. These net specifications are intended to clarify the current specifications for Small Mesh Areas 1 and 2 to allow both fishermen and enforcement agents to have a better understanding of how to properly “rig” raised footrope trawl gear.

3.1.3.2.1 Headrope

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.

3.1.3.2.2 Ground Gear

- Ground gear must be all bare wire not larger than 1/2-inch in diameter for the top leg, not larger than 5/8-inch in diameter for the bottom leg, and not larger than 3/4-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.

3.1.3.2.3 Footrope

- 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.

3.1.3.2.4 Drop Chains

- Drop chains must be 42-inches in length or greater.
- The maximum size drop chain stock when used with a sweep is 5/16-inch. 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.

3.1.3.2.5 Sweep Specifications and Optional Sweepless Trawl

The raised footrope trawl may be used with a chain sweep or without a chain sweep. The sweep, if used, must be rigged in the following manner:

- The sweep must be bare chain the same length as the footrope. (Note: The required drop chains at the wing ends of the footrope effectively makes the sweep seven feet longer than the footrope.)
- The maximum size of the sweep is 5/16-inch stock chain.
- The sweep must be attached to the ends of the drop chains.
- The center of the sweep must be attached to the drop chain from the center of the footrope.
- The attachment points of each drop chain on the sweep and the footrope must be the same distance from the center drop chain attachments.
- The ends of the sweep must be attached to the drop chains at the end of the footrope.

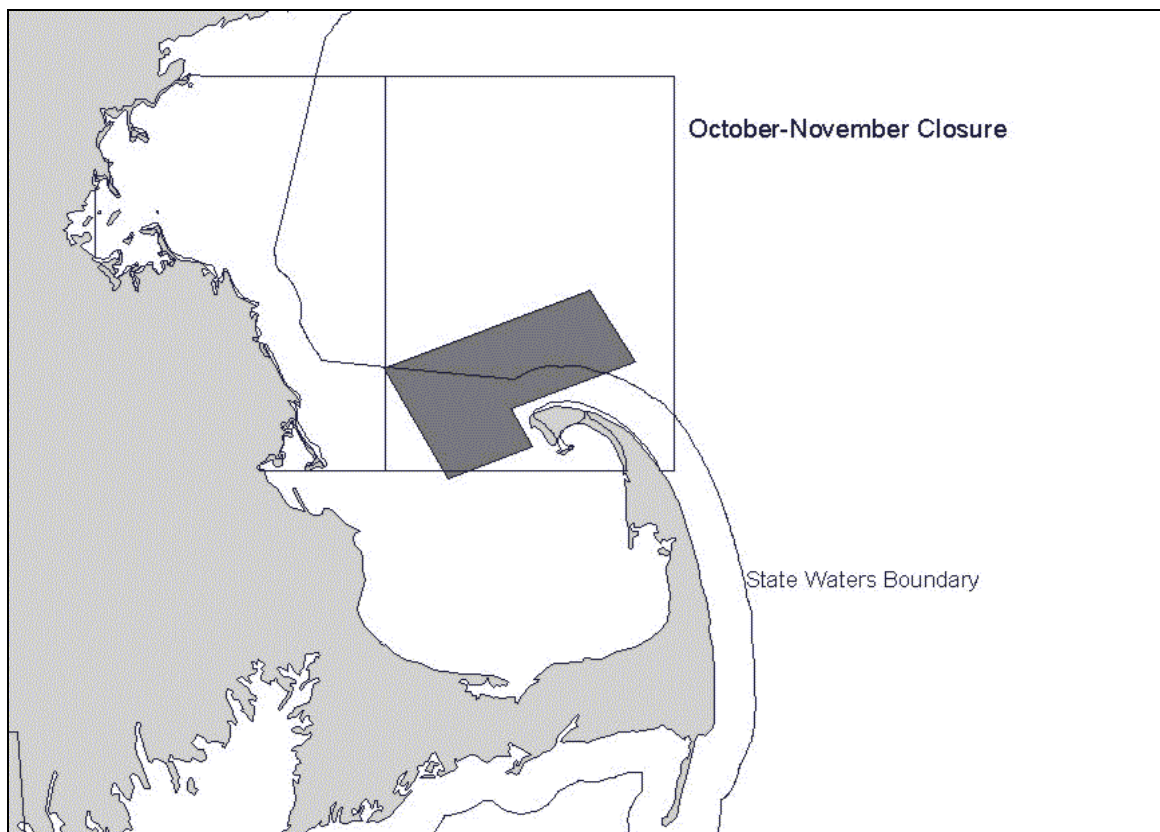
3.1.4 Adjustment to Framework 33 October/November Closure

Participants in the raised footrope trawl fishery will be “exempt” from the closure of Blocks 124 and 125 during October and November *only* in the area proposed for the raised footrope trawl fishery and *only* to fish for small mesh species (Figure 8).

Participants will be required to possess a letter of authorization to fish in the raised footrope trawl fishery throughout the entire season and will be subject to all other restrictions specified in this framework document. The exemption certification program should be structured and administered similarly to the program for the Cultivator Shoal Whiting Fishery, which includes the following specifications:

- Minimum seven-day enrollment
- While enrolled, a vessel can use its Multispecies DAS to target regulated species in large mesh areas (with regulated mesh and no small mesh on board), provided that it complies with all Multispecies DAS restrictions
- While enrolled, a vessel can fish for small mesh multispecies in other designated small mesh areas, provided that it complies with the most restrictive small mesh regulations (3-inch mesh and 30,000-pound possession limit), no matter where it fishes.

Figure 8 Raised Footrope Trawl Fishery Exemption to October/November Rolling Closure



Discussion and Rationale: Analysis of this option is contained in Section 5.1.3.1.4. The Council selected this option because it is predicted to have a lesser impact on some large mesh regulated species than Option 2, the rejected alternative. For further discussion of the rationale for selecting this option, see Section 5.1.3.1 of this document.

3.1.5 Allowable Landings and Bycatch Restrictions

3.1.5.1 Whiting/Offshore Hake Possession Limits

Vessels participating in the raised footrope trawl fishery will be restricted by the combined whiting/offshore hake possession limits specified in Amendment 12. Since vessels will be prohibited from fishing with a codend mesh smaller than 2.5-inches, the following are the applicable mesh size/possession limit categories when fishing in this raised footrope trawl fishery:

- A. Vessels electing to use a minimum 2.5-inch mesh are allowed to possess/land combined whiting and offshore hake up to 7,500 pounds. (Vessels may *not* use an outside net strengthener when fishing in this category in the raised footrope trawl fishery. See Section 3.1.3.1.2.)
- B. Vessels electing to use a minimum 3-inch mesh are allowed to possess/land combined whiting and offshore hake up to 30,000 pounds.

According to regulations implemented through Framework 32, a vessel's whiting/offshore hake possession limit will be determined by the smallest codend mesh the vessel has on board (either stowed or available for fishing) OR the smallest mesh on board not incorporated into the body of a fully-constructed net, whichever is smaller.

3.1.5.2 Additional Bycatch Restrictions

For the raised footrope trawl fishery established through this framework adjustment, the bycatch restrictions reflect those that were incorporated into the annual experimental raised footrope trawl fisheries.

Vessels may retain butterfish, dogfish, herring, mackerel, scup, squid, silver hake, and red hake up to the amounts allowed by the regulations for those species. In addition, the following restrictions apply:

- a prohibition on the possession of regulated species (Atlantic cod, witch flounder, American plaice, yellowtail flounder, haddock, pollock, winter flounder, windowpane flounder, 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.

Discussion and Rationale: During the series of experiments, DMF identified two key elements needed for success of this fishery: (1) educating fishermen about the gear's design and its proper use; and (2) promoting compliance through conservative bycatch restrictions and strong penalties for non-compliance. In addition, fishermen and dealers noted a market incentive for fishing the net as designed – soft-bodied whiting and red hake are less likely to be damaged and will fetch a

higher price when the catch is free of crabs, sculpins, lobster, and other hard-bodied or spiny organisms.

At a minimum, *Multispecies Exempted Fisheries* are required to comply with the following bycatch restrictions:

- a prohibition on the possession of regulated species
- 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 restrictions proposed for the raised footrope trawl fishery in this framework adjustment are more conservative than the 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. In addition, these are the same bycatch restrictions that were imposed on the experimental raised footrope trawl fishery from 1996-1999. These restrictions are widely supported by the participants in the experimental fishery as a mechanism to discourage improper use of the net.

Since a substantial portion of effort in this fishery will take place both in state and federal waters (Figure 6), it is imperative for enforcement purposes to have rules that are consistent for both the state and federal waters portions. State law (MGL sec 37) prohibits the take of lobsters in state waters by dragging. Moreover, DMF has maintained that if fishermen are allowed to retain quantities of certain valuable benthic species (lobster, monkfish, flounders), some may rig their nets to increase the catch of these species thereby nullifying the conservation benefits of this “off-bottom” trawl. DMF’s historical sea sampling data show juvenile American plaice the predominant regulated bycatch species in this area prior to the introduction of the raised footrope trawl. The raised footrope trawl reduces flatfish bycatch up to 95%.

3.1.6 Recommended Level of Monitoring

The Council believes that monitoring this fishery is important to ensure that regulated species bycatch remains at a minimum. Therefore, NMFS should work closely with DMF 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 Massachusetts DMF.

Massachusetts DMF intends to contribute 4-7 sea sampling trips per month during the raised footrope trawl fishery season to monitor the bycatch of regulated species in this fishery.

Discussion: Since the raised footrope trawl was not designed specifically to eliminate the catch of cod (it was designed primarily to eliminate flatfish catch), and since conservation and rebuilding of Gulf of Maine cod is a high priority for the Council, this fishery should be monitored closely to ensure that cod bycatch remains at minimal levels. Groundfish PDT members have expressed this concern and recommend an at-sea monitoring program to collect

bycatch data on an continual basis.

Catch and bycatch in this fishery will be periodically reviewed by the Whiting PDT and the Whiting Monitoring Committee. If adjustments to the specifications for this fishery are necessary to ensure that bycatch remains minimal, the Council may take action through a framework adjustment.

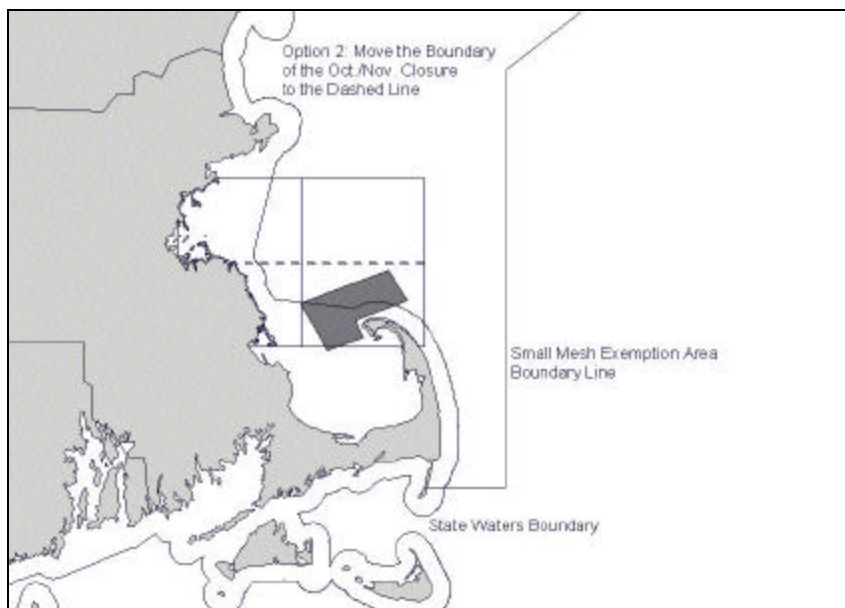
3.2 ALTERNATIVES CONSIDERED AND REJECTED

During the development of this framework adjustment, the Council considered only one alternative to address some issues (season, area, and bycatch restrictions, for example) 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 season, area, gear specifications, etc. were identified and assessed throughout five years of experimental fishing.

The Council did consider two alternatives for adjusting the Framework 33 “rolli provisions to allow for this raised footrope trawl fishery to occur during the months of October and November when Blocks 124 and 125 are scheduled to be closed. Both of these alternatives were proposed by the Groundfish Committee and considered by the Council during the development of Framework 33, but action was delayed until the Council could develop this framework adjustment to address the raised footrope trawl fishery in its entirety. The alternative that was rejected is described below, including the rationale for its rejection.

The Council rejected “Option 2” for adjusting the Framework 33 October/November “rolling closure.” This option would have moved the boundary of the October-November closure (Blocks 124 and 125) so as not to include the raised footrope trawl fishery area. Only the top half of Blocks 124 and 125 would be closed during October and November (Figure 9).

Figure 9 Option 2 (Rejected) – Modify the Boundary of the October/November Closure



If the Council had selected Option 2, it would have considered whether or not to require participants to obtain a letter of authorization for this fishery (for the entire season). The area proposed for the raised footrope trawl fishery is contained within the current small mesh exemption area, so if the Council had decided *not* to require letters of authorization under this option, then the raised footrope trawl fishery could have been administered and enforced in the same manner as Small Mesh Areas 1 and 2. Although it is an additional administrative burden, requiring letters of authorization for this fishery allows for better monitoring (number of participants) and increases the enforceability of the exemption.

Analysis of this option is contained in Section 5.1.3.1.4 of this framework document. The Council rejected Option 2 based on recommendation of the Groundfish PDT and based on subsequent analyses suggesting that this option would have a greater impact on some large mesh regulated species than Option 1. Analyses supporting this conclusion (as well as additional discussion) are provided in Section 5.1.3.1.4.

4.0 AFFECTED ENVIRONMENT

The physical, biological, and human environment affected by the actions proposed in this framework adjustment are described in detail in Amendment 12 (whiting) 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. Where necessary, portions of the descriptive information presented in Amendment 12 have been reproduced in this framework document.

5.0 ANALYSIS OF IMPACTS

5.1 BIOLOGICAL IMPACTS

The following sections present a biologically-based assessment of the potential impacts of exempting the raised footrope trawl fishery on the northern stocks of whiting and red hake as well as on regulated groundfish species and other non-target species. Analysis of both the proposed action and the alternative considered and rejected (for the adjustment to the “rolling

5.1.1 Impacts on the Northern Stocks of Silver Hake and Red Hake

The following characterizes the potential impact of the raised footrope trawl fishery on the northern stocks of silver hake and red hake. This fishery occurred on an experimental basis from 1995-1999, and landings from the fishery during 1995-1997 were incorporated into the Amendment 12 (whiting management program) analysis. The complete analysis of the whiting management and rebuilding program is contained in Section E.7.2 of the Amendment 12 document.

According to the Amendment 12 overfishing definition for whiting:

Silver hake is overfished when the three-year moving average of the autumn survey weight per tow is less than 3.31 kg/tow and 0.78 kg/tow for the northern and southern stocks respectively, one half of the B_{MSY} proxy (the average observed from 1973 – 1982). If an analytical assessment (e.g. VPA) for silver hake is available, the three-year moving average will be replaced with the terminal year biomass estimate and compared with the mean biomass estimated for 1973 – 1982.

Overfishing occurs when fishing mortality, derived from the latest three years of survey data, exceeds $F_{0.1}$ (0.41 and 0.39 for the northern and southern stocks of silver hake respectively). If an analytical assessment is available, then the terminal year fishing mortality rate will be compared to $F_{0.1}$.

If silver hake are overfished, then the Council will take steps necessary to reduce fishing mortality below a level determined by a linear reduction of F between F_{proxy} at the B_{MSY} proxy and zero when biomass is at $\frac{1}{2}$ of the B_{MSY} proxy. If overfishing is occurring, fishing mortality will be reduced to $F_{0.1}$, or lower when biomass is below the B_{MSY} proxy.

According to the Amendment 12 overfishing definition for red hake:

The northern stock of red hake is overfished when the three-year moving average of stock biomass, derived from the autumn survey, is below 1.6 kg/tow. If an analytical assessment is available for northern red hake, then the three-year moving average will be replaced with the terminal year biomass estimate and compared with the biomass reference points.

Overfishing occurs when the ratio between catch and survey biomass exceeds 0.65, the proxy for F_{MSY} . When biomass is less than 3.1 kg/tow (the biomass target), the stock is overfished when fishing mortality is above a rate that declines linearly to zero when biomass equals the minimum biomass threshold (1.6 kg/tow).

The overfishing definition control rule specifies risk averse fishing mortality targets, accounting for the uncertainty in the estimate of F_{MSY} or its proxy. If the three-year moving average of northern red hake stock biomass (derived from the autumn survey) is greater than or equal to 3.1 kg/tow, the fishing mortality target is 60% of the value of F_{MSY} , or 0.39. The fishing mortality target decreases linearly to zero when the three-year moving average of northern red hake stock biomass (derived from the autumn survey) declines to 1.6 kg/tow, the minimum biomass threshold.

Based on the Amendment 12 overfishing definitions, the Council should reduce fishing mortality to $F_{0.1}$ (0.41) for the northern stock of silver hake and 0.39 for the northern stock of red hake when overfishing is occurring. The management program implemented in Amendment 12 is intended to reduce fishing mortality to these target F levels. Analysis indicates that these target fishing mortality rates should be achieved through the Amendment 12 management measures, including the Year 4 default measure. Since the raised footrope trawl fishery occurred on an

experimental basis from 1995-1999, landings from the fishery during 1995-1997 were incorporated into the Amendment 12 analysis. The analysis assumed that landings in the raised footrope trawl fishery would continue to occur under the Amendment 12 management program at levels similar to those observed from 1995-1997. Therefore, continuation of the raised footrope trawl as an exempted fishery rather than an experimental fishery at effort levels similar to those from 1995-1997 should not alter the conclusions drawn in Amendment 12 relative to the potential success of the whiting management program.

Red hake is most often caught in combination with silver hake, and analysis suggests that the Amendment 12 management measures are likely to reduce fishing mortality on red hake to target levels. The projected exploitation rate reductions for red hake from the Amendment 12 analysis are similar to those of combined silver and offshore hake, indicating that the management measures should afford protection to small mesh multispecies as a group, not just to silver hake. The conclusion, therefore, that continuation of the raised footrope trawl as an exempted fishery rather than an experimental fishery is not likely to jeopardize the northern whiting management program also holds true for the conservation and management of the northern stock of red hake.

Whiting resource status is not likely to be adversely impacted by establishing a seasonal, raised footrope trawl fishery in Areas 2B and 4, provided that whiting landings do not increase substantially beyond yields taken in the 1999 experimental fishery (roughly 1,000 mt of whiting). This fishery is expected to harvest whiting from the northern stock of the whiting population. Abundance of the northern whiting stock is currently above average. The northern whiting biomass index from the autumn 1999 NEFSC survey is 11.64 kg per tow. The three-year moving average of the biomass index is 13.08 kg in 1999, which is well above the survey biomass threshold (3.31) and the survey biomass target (6.63) for the northern whiting stock, indicating that the northern stock of whiting is not overfished. Three-year moving averages of survey biomass indices for northern whiting have remained above threshold and target values throughout the 1990s. The apparent healthy status of the northern whiting stock is not likely to be affected by the small scale of landings in the proposed raised footrope trawl fishery.

Red hake resource status is also not likely to be adversely affected by the proposed fishery, provided that red hake landings do not increase substantially beyond yields taken in the 1999 experimental fishery. The proposed raised footrope trawl fishery is expected to harvest red hake from the northern stock of the red hake population. Abundance of the northern red hake stock is currently above average. The northern red hake biomass index from the autumn 1999 NEFSC survey is 3.32 kg per tow. The three-year moving average of the biomass index is 3.80 kg in 1999, which is above the survey biomass threshold (1.55) and the survey biomass target (3.10) for the northern whiting stock. Three-year moving averages of survey biomass indices for northern red hake have remained at or above the target value throughout the 1990s. The apparent healthy status of the northern red hake stock is not likely to be affected by the small scale of landings in the proposed raised footrope trawl fishery.

5.1.2 Potential for an Increase of Effort in the Exempted Fishery

A significant expansion of effort in this exempted fishery well beyond historical levels *could* alter the above conclusions; however, effort in this fishery (characterized by landings) is unlikely to increase enough to compromise whiting fishing mortality objectives for several reasons:

- The proposed season for the raised footrope trawl fishery (September 1 – November 20) is shorter than the experimental seasons (September 1 – December 31). By decreasing the length of the season, the fishery loses approximately 19% of the 1999 estimated whiting catch and 50% of the 1999 estimated cod bycatch. (These estimates are based on sea sampling data that have been expanded to account for unobserved trips.) The 19% loss in whiting catch expected from a shorter season may offset an increase in effort in the fishery, resulting in little to no additional landings of whiting from the fishery.
- Whiting/offshore hake possession limits (7,500-pounds with 2.5-inch mesh and 30,000-pounds with 3-inch mesh) should discourage larger vessels and vessels with long travel times from entering the fishery. Whiting is generally a high-volume fishery, and vessels with larger operating costs are unlikely to be able to make profitable trips in this fishery.*
- The proposed raised footrope trawl area encompasses a small geographical area close for vessels in and near Provincetown, almost all of which participated in the experimental fisheries. The long steam time and rapid perishability of the product is likely to discourage additional vessels from traveling long distances to participate in this fishery.*
- As discussed in Section 5.1.3.1, large increases in effort are not expected because a substantial proportion of the fishery (more than 50%) is likely to occur within state waters (Figure 6), requiring a Massachusetts' Coastal Access Permit (limited access, with moratorium on new permits) and maximum vessel size of 72'.
- Analysis of continuing the whiting fishery as an open access fishery (see Appendix IV, NMFS, July 1, 1999) states the following:
 - "...although a flood of new entrants to the fishery could offset reductions in landings achieved by the trip limits, the imposition of a trip limit does not encourage new entrants to the small mesh multispecies fishery and would mitigate the impacts of any new entrants to the fishery."
 - "...although the possession limits may improve prices, the highly volatile market conditions, resulting in wide daily variations of prices, may control the number of vessels that would enter the fishery for the near term. This current market limitation would counter the expectation that vessels will flood the fishery due to increasing regulations in other fisheries."
 - "This (supplemental) analysis is predicated on the assumption that the implementation of an open access fishery will not result in a net increase in the number of fishery participants compared to current participation levels."
 - "The Year 4 default measure is projected to achieve the goal of ending overfishing in combination with other non-quantifiable measures even without a limited access permit program."
 - "In an open access permit system, it would be unlikely that participation in the fishery would increase more than marginally due to unstable market conditions of the fishery and restrictions on vessels by the (Amendment 12) management measures."

The above conclusions were drawn in the context of the whiting fishery as a whole. While participation in this raised footrope trawl fishery may increase, it is unlikely that this increased effort will compromise whiting fishing mortality objectives. New participation in the raised

* This assumes that vessels are not likely to temporarily relocate to a nearby port to participate in this fishery.

footrope trawl fishery will most likely be from vessels that have fished for whiting in the past (the cost of buying new gear may deter vessels that have *never* fished for whiting). These vessels are more likely to be shifting their effort on whiting from one small mesh fishing area to the raised footrope trawl area. While describing short-term expectations of the fishery as a whole, the above projections/conclusions would be expected to apply to the raised footrope trawl exempted fishery as well.

- If landings in this fishery during 2000 increase enough to potentially compromise the conservation objectives of the whiting management program, the Council can modify the season, area, and/or possession limits for this fishery through a framework adjustment, which could be implemented in time for the 2001 raised footrope trawl season (and still prior to Year 4 of the whiting management program).
- The Council has already expressed concern about continuing the small mesh multispecies fisheries as open access fisheries as well as its intent to develop another limited access program for small mesh multispecies in the near future. It is likely that the raised footrope trawl fishery (and other small mesh fisheries) will be subject to limited access permit restrictions for small mesh multispecies in the future.

5.1.3 Impacts on Other Species

The following sections characterize the potential impact of this fishery on other commercial fish stocks in the northeast region, including regulated multispecies, dogfish, and herring. Analyses of the alternative that the Council rejected (for modifying the Framework 33 October/November closure) are also included.

5.1.3.1 Impacts on Regulated Multispecies

Establishing a seasonal whiting raised footrope trawl fishery in upper Cape Cod Bay will not significantly impact mortality or rebuilding schedules for any large mesh regulated groundfish stocks. The raised footrope trawl fishery has been ongoing as an experimental fishery since 1995 and has occurred during the 1999 October/ November rolling closure of blocks 124 and 125. The low absolute catches of large mesh regulated species projected for 2000 and the fact that the exempted fishery is more restricted in area and season than the experimental fishery in 1999 suggests that the raised footrope trawl fishery is unlikely to exert any additional mortality on large mesh regulated species. Large increases in effort are not expected because a substantial proportion of the fishery occurs within state waters (Figure 6), requiring a Massachusetts' Coastal Access Permit (limited access, with moratorium on new permits) and maximum vessel size of 72'. At minimum, Option 1 for adjusting the October/November closure, the proposed "neutral" relative to 1999 and actually may slightly reduce catches of large mesh regulated species. Information provided in the sections below supports these conclusions.

For enforcement purposes, the Commonwealth of Massachusetts is prepared to adopt complimentary regulations and have its Division of Environmental Law Enforcement (DELE) enforce state rules in state waters and dock-side. Furthermore, DELE and NMFS have an interagency Memorandum of Understanding allowing state officers to enforce federal groundfish regulations routinely. Contingent on available resources, DELE officers could patrol and enforce the restrictions in the federal waters portion of the raised footrope trawl exempted area. In addition, NMFS enforcement officers may be deployed on state patrol vessels in the federal

waters portion.

5.1.3.1.1 Characterization of Regulated Multispecies Bycatch in the Experimental Raised Footrope Trawl Fishery

The raised footrope trawl was designed to reduce catches of flatfish in the small mesh whiting fishery in Cape Cod Bay. By regulation, participants in the experimental fisheries must have discarded all large mesh regulated species. In addition to covering previous years, the Massachusetts Division of Marine Fisheries sea sampling program sampled 66 of 459 trips in the 1999 experimental fishery, the most extensive coverage to date. The bulk of the 1999 fishery (91%) occurred in Areas 2B and 4 (see Figure 1 in Section 1.3). DMF estimated the total bycatch of large mesh regulated multispecies in the 1999 experimental fishery by increasing the sea sampled catch per trip estimates by the ratio of total trips to observed trips. In other words, the observed bycatch was expanded to include estimates for non-observed trips. For some species with low discard rates in the sea sampling data, reported discards in the fleet's vessel trip reports were higher than the sea sampling estimates. For these species, discards were estimated using the vessel trip reports that Mass. DMF required participating fishermen to complete and submit on a weekly basis.

Total discard estimates by species in Areas 2B, 4, and 3 are shown in Table 3 and Table 4 respectively. Total (expanded) discards of all large mesh regulated species in the 1999 raised footrope trawl experimental fishery were estimated at 33.4 mt; only Gulf of Maine cod (11.9 mt), American Plaice (7.2 mt), Gulf of Maine winter flounder (5.7 mt), pollock (3.2 mt), and white hake (1.3 mt) exceeded 1 metric ton. A comparison of discards in the raised footrope trawl fishery with January – November 1999 landings for regulated species suggests that there is minimal impact on regulated species. The percentage of raised footrope trawl discards/ Jan-Nov 1999 landings by species ranged from 2.2% (Gulf of Maine winter flounder) to less than 0.01%.

Comparing discards to annual landings, or discards to the Target TACs of regulated species, is not entirely appropriate because the raised footrope trawl fishery is required to discard large mesh regulated species. Comparing raised footrope trawl fishery discards to total discards by species is more appropriate, but estimates of total large mesh regulated species discards are either imprecise or unknown. However, the percentage of raised footrope trawl fishery discards to total discards is below 1% for all species but Gulf of Maine cod. Gulf of Maine cod discard in the raised footrope trawl fishery was 5% of total discards for Gulf of Maine cod, but the total discard estimate (200 mt) for Gulf of Maine cod (SARC 27) was derived *prior* to implementing very restrictive trip limits (30-200 lbs.) for that stock and is likely to have been substantially higher in recent years.

Table 3 Estimated (Expanded) Total Catch (mt) of Large Mesh Regulated Species in the 1999 Raised Footrope Trawl Fishery in Areas 2B and 4 Compared to Landings (mt) in Calendar Year 1999

Species	American plaice	GOM Winter flounder	Witch flounder	Windowpane	Cape Cod YT	Redfish	White hake	GOM Haddock	Pollock	GOM cod
1999 Catch in RFT fishery (mt)	6.92	5.73	0.08*	0.07	0.91*	0.11	0.26	0.49	2.56	11.89
Jan-Nov 1999 landings ¹ (mt)	2814.00	260.00	1922.00	43.00	845.00	322.00	2447.00	529.00	4152.00	1273.00
1999 catch as % of 1999 landings	0.25%	2.20%	<0.01%	0.16%	0.10%	0.03%	0.36%	0.09%	0.06%	0.93%
Most recent Discards ² (mt)	900.00	N/A	334.00	N/A	75.00	N/A	200.00	N/A	N/A	200.00
1999 catch in RFT fishery as % of most recent discard estimate	0.76%		0.02%		1.21%		0.13%			5.95%

¹ January-April 1999 landings were taken from MSMC 1999 report; May-November landings were taken from preliminary data provided by the NERO as of 3/23/00.

² Discard information was taken from the July 1999 Northern Demersal working group Report or most recent SARC documents.

* Catch estimate taken from state-issued vessel trip reports required by participating vessels for all trips in experimental fishery.

For Cape Cod Yellowtail, the sea sampled catch estimate was 0.53 mt. For witch flounder, the sea sampled catch estimate was 0.00 mt.

Table 4 Estimated Total Catch (mt) of Large Mesh Regulated Species in the 1999 Raised Footrope Trawl Fishery in Area 3 Compared to Landings (mt) in Calendar Year 1999

Species	American plaice	SNE/MA Winter flounder	Witch Flounder	Windowpane	Cape Cod YT	Redfish	White hake	Georges Bank Haddock	Pollock	Georges Bank cod
1999 Catch in RFT fishery (mt)	0.02	0.23*	0.06*	0.03*	0.11*	0.01*	1.02	0.03	0.01	0.31
Jan-Nov 1999 landings ¹ (mt)	2814.00	3048.00	1922.00	43.00	845.00	322.00	2447.00	2232.00	4152.00	7827.00
1999 catch as % of 1999 landings	<0.01%	<0.01%	<0.01	0.07%	0.01%	<0.01	0.04%	<0.01%	<0.01%	<0.01%
Most recent Discards ² (mt)	900.00	300	334.00	N/A	75.00	N/A	200.00	600.00	N/A	N/A
1999 catch in RFT fishery as % of most recent discard estimate	<0.01%	0.08%	0.02%		0.15%		0.51%	<0.01%		

¹ January-April 1999 landings were taken from MSMC 1999 report; May-November landings were taken from preliminary data provided by the NERO as of 3/23/00.

² Discard information was taken from either the July 1999 Northern Demersal working group Report or most recent SARC documents.

* Catch estimate taken from state-issued vessel trip reports required by participating vessels for all trips in experimental fishery.

5.1.3.1.2 Areas 2B and 4

In Areas 2B and 4, the only species with expanded bycatch estimates greater than 1 mt in the 1999 experimental fishery were Gulf of Maine cod (11.89 mt), American Plaice (6.92 mt), and Gulf of Maine winter flounder (5.73). Discards of Gulf of Maine cod in this fishery were less than 0.93% of the total January-November 1999 landings. The length frequency of Gulf of Maine cod discards ranged from 22 cm to 72 cm with a mean length of 38.4 cm (Figure 10). The majority of the discards (by number) were below the 48 cm minimum size. Bycatch of Gulf of Maine cod in the experimental fishery increased after October 31, and one half of the total estimated Gulf of Maine cod bycatch occurred after November 20 (Figure 11, Table 5), which is the proposed closing date for the fishery.

Figure 10 Length Frequencies of Gulf of Maine Cod Discards in 1999 Experimental Raised Footrope Trawl Fishery (Areas 2B and 4)

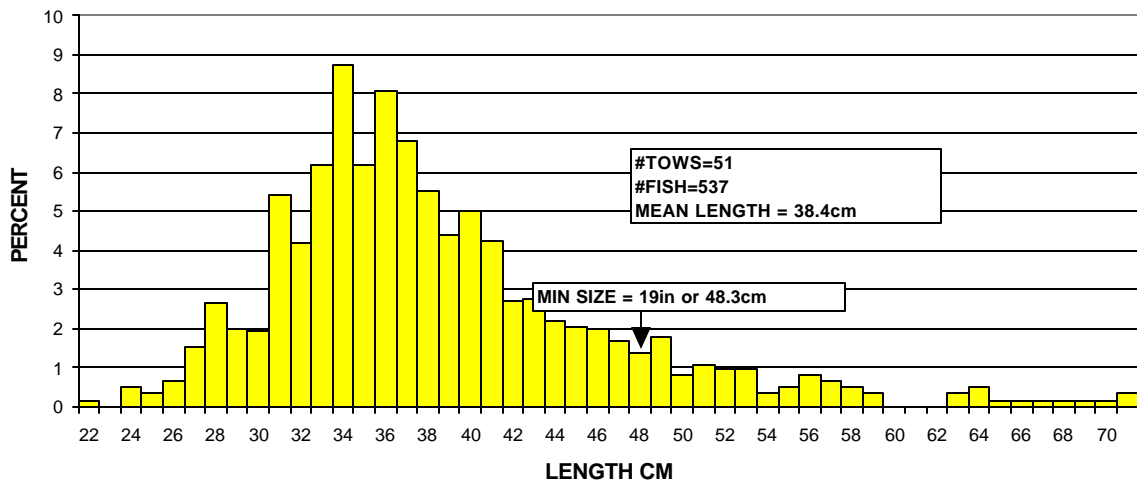
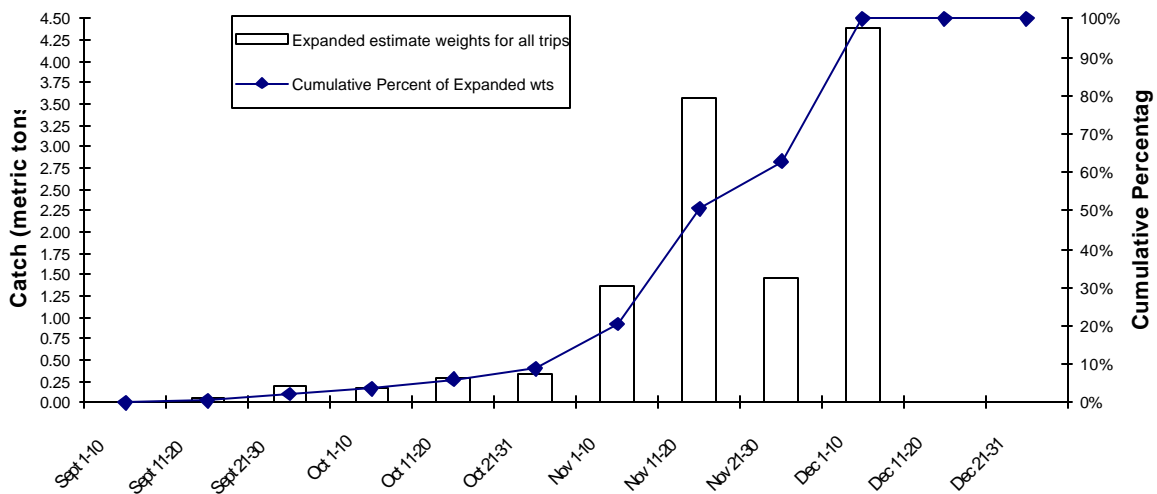


Figure 11 Cumulative (Expanded) Gulf of Maine Cod Catch from 1999 Sea Sampling Data in Areas 2B and 4



Discards of American Plaice in the 1999 experimental raised footrope trawl fishery were less than 0.25% of the total January – November 1999 landings. The length frequency of American Plaice discards ranged from 13 cm to 44 cm with a mean size of 25.8 cm (Figure 12). Most discards were below the 35.6cm minimum size. Unlike cod, discards were higher during mid- to late September with 50% of discards occurring during September when fishing was predominantly in deeper water in Upper Cape Cod Bay, *not* on or near Stellwagen Bank (Figure 13, Table 5).

Figure 12 Length Frequencies of American Plaice Discards in 1999 Experimental Raised Footrope Trawl Fishery (Areas 2B and 4)

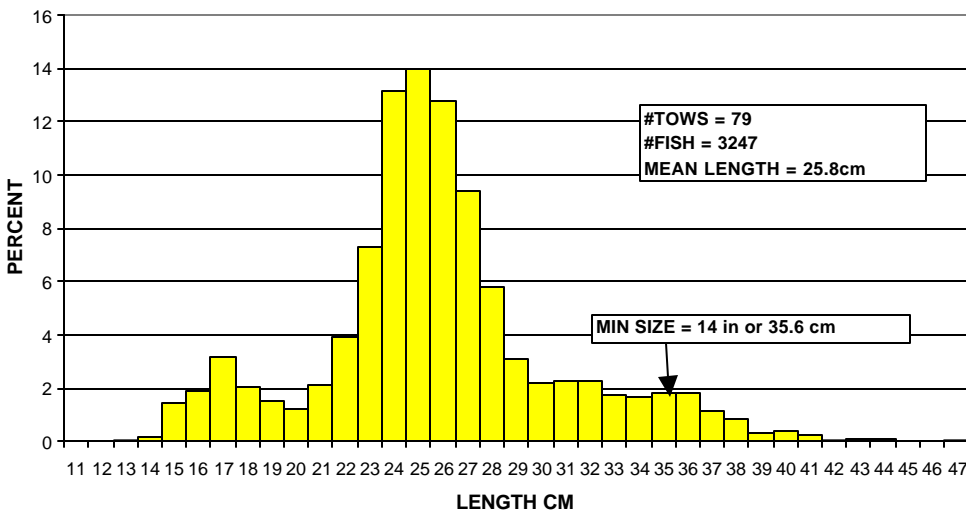
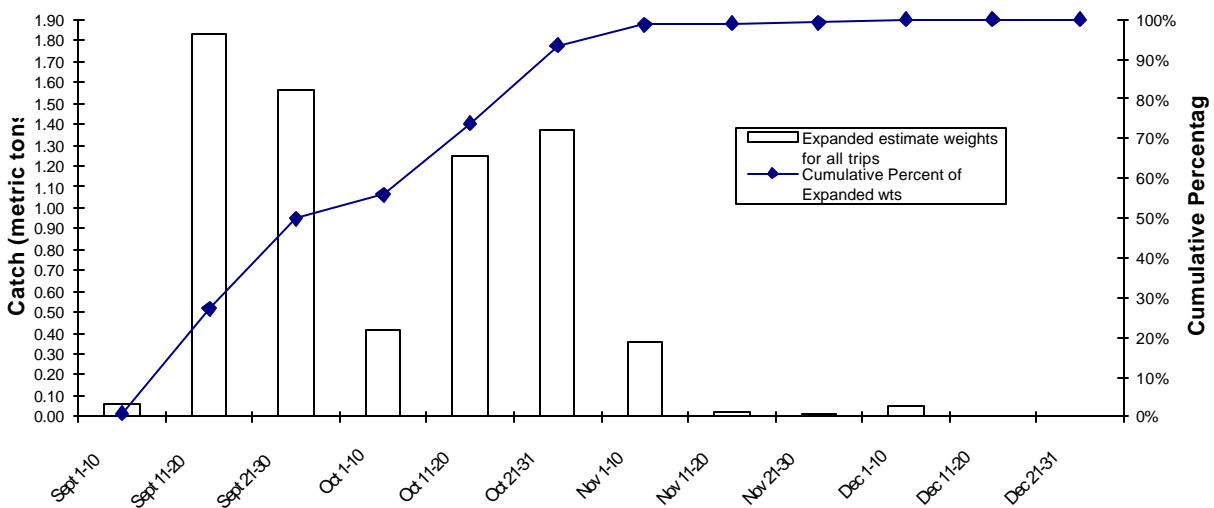


Figure 13 Cumulative (Expanded) American Plaice Catch from 1999 Sea Sampling Data in Areas 2B and 4



Discards of Gulf of Maine winter flounder in the 1999 experimental raised footrope trawl fishery were around 2% of the total January-November 1999 landings. The length frequency of winter flounder discards ranged from 15 cm to 48 cm with a mean length of 29.5 cm (Figure 14). Nearly one half the discards were above minimum size of 30.5 cm. Discards were generally low except for the Oct 21 – November 10 sampling period, which accounted for 67% of the total discards (Figure 15, Table 5).

Figure 14 Length Frequencies of Winter Flounder Discards in 1999 Experimental Raised Footrope Trawl Fishery (Areas 2B and 4)

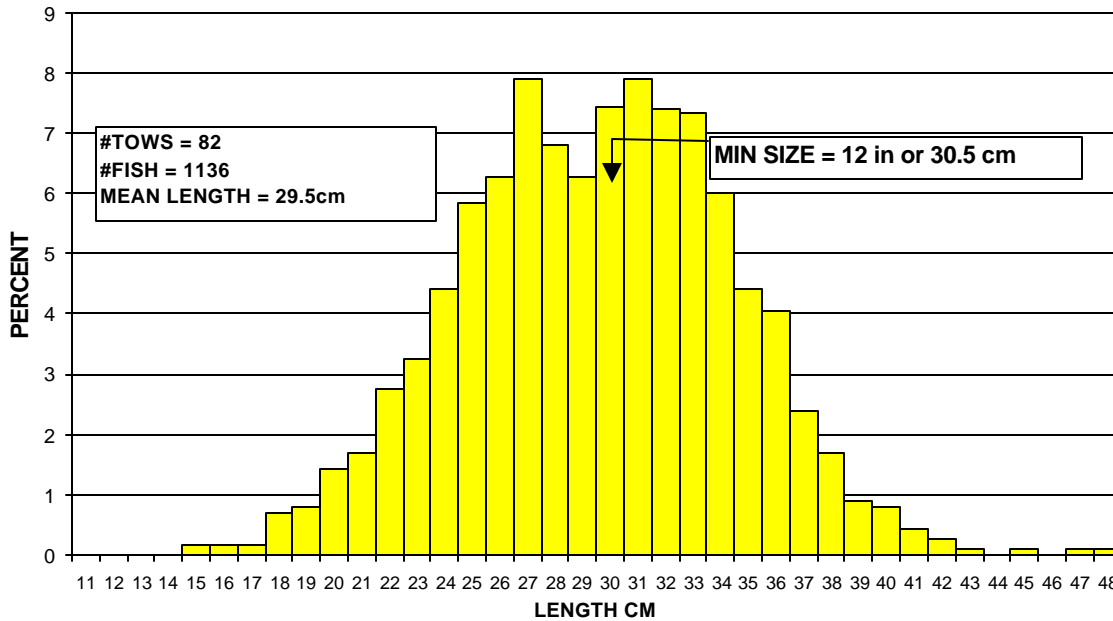


Figure 15 Cumulative (Expanded) Winter Flounder Catch from 1999 Sea Sampling Data in Areas 2B and 4

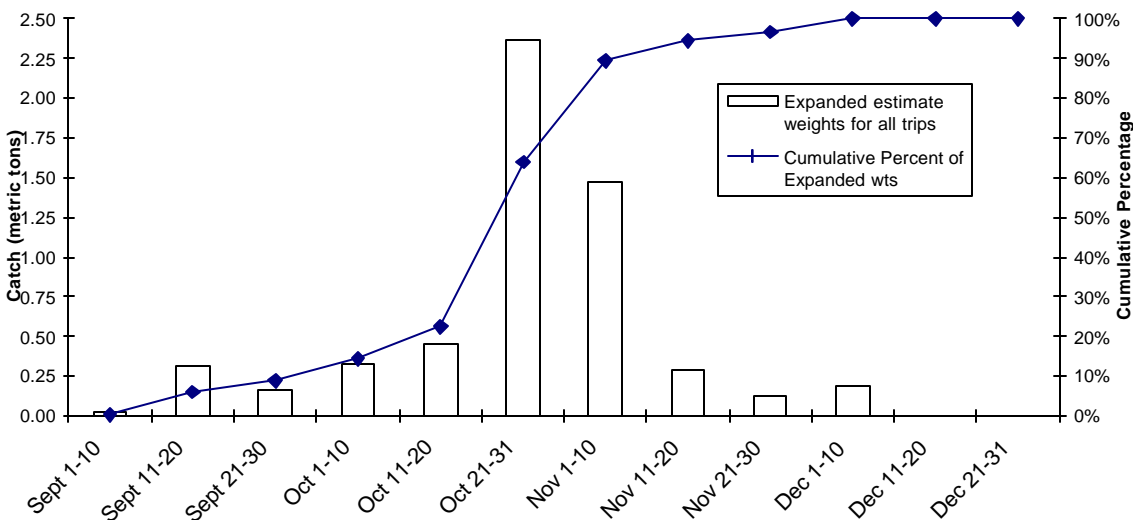


Table 5 Cumulative Percentage of Expanded Estimated Catches of Target Species and Regulated Multispecies for Areas 2B and 4

Time Period	Sept 1-10	Sept 11-20	Sept 21-30	Oct 1-10	Oct 11-20	Oct 21-31	Nov 1-10	Nov 11-20	Nov 21-30	Dec 1-10	Dec 11-20	Dec 21-31	Season Totals
Silver Hake													
Expanded estimate weights for all trips	1.71	30.94	83.09	79.82	105.03	162.57	124.32	90.71	117.31	42.46	0.00	0.00	837.97
Cumulative expanded estimated weights for all trips	1.71	32.65	115.74	195.56	300.59	463.16	587.48	678.19	795.51	837.97	837.97	837.97	
Cumulative Percent of Expanded wt	0.2%	3.9%	13.8%	23.3%	35.9%	55.3%	70.1%	80.9%	94.9%	100.0%	100.0%	100.0%	
Spiny Dogfish													
Expanded estimate weights for all trips	0.07	11.14	1.24	11.75	4.77	55.16	33.96	110.36	8.42	3.04	0.00	0.00	239.91
Cumulative expanded estimated weights for all trips	0.07	11.20	12.44	24.20	28.96	84.12	118.09	228.44	236.86	239.91	239.91	239.91	
Cumulative Percent of Expanded wt	0.0%	4.7%	5.2%	10.1%	12.1%	35.1%	49.2%	95.2%	98.7%	100.0%	100.0%	100.0%	
Red Hake													
Expanded estimate weights for all trips	0.52	4.89	17.05	13.48	32.90	31.16	7.34	1.94	0.26	0.01	0.00	0.00	109.54
Cumulative expanded estimated weights for all trips	0.52	5.41	22.46	35.94	68.84	100.00	107.34	109.28	109.54	109.54	109.54	109.54	
Cumulative Percent of Expanded wt	0.5%	4.9%	20.5%	32.8%	62.8%	91.3%	98.0%	99.8%	100.0%	100.0%	100.0%	100.0%	
Atlantic Cod													
Expanded estimate weights for all trips	0.00	0.07	0.20	0.17	0.28	0.33	1.38	3.56	1.46	4.40	0.00	0.00	11.84
Cumulative expanded estimated weights for all trips	0.00	0.07	0.27	0.44	0.72	1.05	2.42	5.98	7.44	11.84	11.84	11.84	
Cumulative Percent of Expanded wt	0.0%	0.6%	2.2%	3.7%	6.1%	8.8%	20.5%	50.5%	62.9%	100.0%	100.0%	100.0%	
American Plaice													
Expanded estimate weights for all trips	0.06	1.83	1.56	0.41	1.24	1.37	0.36	0.02	0.01	0.05	0.00	0.00	6.92
Cumulative expanded estimated weights for all trips	0.06	1.89	3.45	3.87	5.11	6.48	6.84	6.86	6.87	6.92	6.92	6.92	
Cumulative Percent of Expanded wt	0.9%	27.3%	49.9%	55.9%	73.8%	93.6%	98.7%	99.0%	99.2%	100.0%	100.0%	100.0%	
Winter Flounder													
Expanded estimate weights for all trips	0.02	0.32	0.17	0.32	0.45	2.37	1.47	0.29	0.13	0.19	0.00	0.00	5.73
Cumulative expanded estimated weights for all trips	0.02	0.34	0.51	0.83	1.29	3.66	5.12	5.41	5.54	5.73	5.73	5.73	
Cumulative Percent of Expanded wt	0.4%	5.9%	8.9%	14.5%	22.5%	63.9%	89.5%	94.5%	96.7%	100.0%	100.0%	100.0%	
Pollock													
Expanded estimate weights for all trips	0.01	0.05	0.28	0.63	1.86	0.17	0.02	0.11	0.00	0.02	0.00	0.00	3.15
Cumulative expanded estimated weights for all trips	0.01	0.05	0.33	0.96	2.82	2.99	3.01	3.12	3.12	3.15	3.15	3.15	
Cumulative Percent of Expanded wt	0.2%	1.7%	10.6%	30.5%	89.7%	95.0%	95.8%	99.2%	99.2%	100.0%	100.0%	100.0%	

* All units are expressed in metric tons.

** Expanded estimated weights come from sea-sampling trips.

Table 5 cont. Cumulative Percentage of Expanded Estimated Catches of Target Species and Regulated Multispecies for Areas 2B and 4

Time Period	Sept 1-10	Sept 11-20	Sept 21-30	Oct 1-10	Oct 11-20	Oct 21-31	Nov 1-10	Nov 11-20	Nov 21-30	Dec 1-10	Dec 11-20	Dec 21-31	Season Totals
Haddock													
Expanded estimate weights for all trips	0.02	0.21	0.00	0.14	0.02	0.03	0.06	0.01	0.01	0.00	0.00	0.00	0.49
Cumulative expanded estimated weights for all trips	0.02	0.23	0.23	0.37	0.39	0.41	0.47	0.48	0.49	0.49	0.49	0.49	
Cumulative Percent of Expanded wt	3.8%	45.8%	46.7%	74.8%	78.1%	83.2%	95.9%	98.0%	99.5%	100.0%	100.0%	100.0%	
Yellowtail Flounder													
Expanded estimate weights for all trips	0.00	0.01	0.08	0.08	0.10	0.08	0.08	0.04	0.01	0.06	0.00	0.00	0.53
Cumulative expanded estimated weights for all trips	0.00	0.01	0.10	0.17	0.27	0.35	0.43	0.46	0.47	0.53	0.53	0.53	
Cumulative Percent of Expanded wt	0.1%	2.4%	18.1%	32.8%	50.7%	66.0%	80.7%	87.4%	88.7%	100.0%	100.0%	100.0%	
White Hake													
Expanded estimate weights for all trips	0.00	0.00	0.00	0.00	0.04	0.14	0.05	0.00	0.00	0.01	0.00	0.00	0.26
Cumulative expanded estimated weights for all trips	0.00	0.00	0.00	0.01	0.05	0.19	0.24	0.24	0.24	0.26	0.26	0.26	
Cumulative Percent of Expanded wt	1.2%	1.2%	1.2%	2.6%	18.7%	75.0%	94.7%	94.7%	94.7%	100.0%	100.0%	100.0%	
Redfish													
Expanded estimate weights for all trips	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.03	0.00	0.00	0.11
Cumulative expanded estimated weights for all trips	0.00	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.08	0.11	0.11	0.11	
Cumulative Percent of Expanded wt	0.0%	38.9%	42.8%	46.1%	49.8%	55.5%	55.5%	55.5%	75.3%	100.0%	100.0%	100.0%	
Windowpane Flounder													
Expanded estimate weights for all trips	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.07
Cumulative expanded estimated weights for all trips	0.00	0.00	0.00	0.00	0.00	0.04	0.06	0.07	0.07	0.07	0.07	0.07	
Cumulative Percent of Expanded wt	0.0%	0.0%	0.0%	0.0%	0.0%	59.1%	92.6%	100.0%	100.0%	100.0%	100.0%	100.0%	
Witch Flounder													
Expanded estimate weights for all trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative expanded estimated weights for all trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Cumulative Percent of Expanded wt	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
All Groundfish Species Lumped Together													
Expanded estimate weights for all trips	0.11	2.53	2.30	1.76	4.00	4.53	3.44	4.03	1.64	4.77	0.00	0.00	29.10
Cumulative expanded estimated weights for all trips	0.11	2.64	4.94	6.70	10.70	15.23	18.67	22.70	24.33	29.10	29.10	29.10	
Cumulative Percent of Expanded wt	0.4%	9.1%	17.0%	23.0%	36.8%	52.3%	64.2%	78.0%	83.6%	100.0%	100.0%	100.0%	

* All units are expressed in metric tons.

** Expanded estimated weights come from sea-sampling trips.

5.1.3.1.3 Potential Impact of Exempting the Raised Footrope Trawl Fishery on Regulated Multispecies

The Groundfish Plan Development Team (PDT) addressed the raised footrope trawl fishery in a PDT report dated August 31, 1999. The PDT discussion was based on information from the 1997 and 1998 experimental fisheries. The Groundfish PDT raised three issues that needed to be considered when establishing an exempted raised footrope trawl fishery: (1) increases in cod abundance could lead to increases in total cod bycatch; (2) the amount of potential effort and the potential absolute level (not just the proportion) of regulated species bycatch should be considered; and (3) information was insufficient in Area 4 to draw conclusions. This analysis is designed to address issues 1 and 2. The proposed area for this fishery has been reduced to an area with sufficient sampling to infer discard rates. In addition, recent data from the 1999 experimental fishery was used to estimate impacts on large mesh regulated multispecies.

Analysis of the temporal pattern of Gulf of Maine cod discards shows that nearly 50% of the cod discards occurred after November 20 in 1999. Since rebuilding of Gulf of Maine cod is a high priority for the Council, DMF and the industry have recommended limiting the fishery to September 1 – November 20. This measure alone is expected to reduce the relative discard of cod by 50%.

Discarding of large mesh regulated species will depend on the catch rate and the amount of effort that enters the raised footrope trawl fishery. For this analysis, the catch rate of regulated species is assumed to be proportional to increases in mean biomass. Discard rates (mt per trip) in 1999 for American plaice, witch flounder, Cape Cod yellowtail flounder, white hake, and Gulf of Maine cod were expanded by the ratio of the projected 2000 mean biomass (MSMC, 1999) to 1999 mean biomass (Table 6). Projected mean biomass was not available for Gulf of Maine winter flounder, windowpane flounder, redfish, Gulf of Maine haddock, or pollock. The discard rate observed in the 1999 experimental fishery was assumed to remain the same for these species in 2000. Total potential discards were estimated using static effort in the fishery (1999) and + and - 25% effort in the fishery; all results appear in Table 6.

This analysis projects 25 mt of large mesh regulated species discards under static effort. Total projected discards range from 19 to 31 mt under the $\pm 25\%$ effort scenario. Under the “static” effort scenario, only American Plaice (7.6 mt), Gulf of Maine winter flounder (5.4 mt), pollock (3.1 mt) and Gulf of Maine cod (6.7 mt) discards are projected to exceed 1 mt. The discards for individual regulated species were compared to the 2000 Target TACs for American Plaice, witch flounder, Cape Cod yellowtail, white hake, and Gulf of Maine cod. According to Table 6, projected discards were below 1% of the Target TAC for all of these species under the “static” effort scenario.

Table 6 Projected Total Catch (mt) of Regulated Species in the Raised Footrope Trawl Fishery in Area 2B and 4 in 2000 Compared to Target Total Allowable Catch (TTAC) in FY 2000 (MSMC 1999). Projected catch assumes catch rates are proportional to projected mean biomass changes in 2000. Fishery occurs September 1 through November 20.

Species	American plaice	GOM Winter flounder	Witch flounder	Windowpane	Cape Cod YT	Redfish	White hake	GOM Haddock	Pollock	GOM cod
Ratio of 2000 Mean biomass to 1999 mean biomass	1.1	N/A	1.2	N/A	1.1	N/A	1.2	N/A	N/A	1.1
Catch assuming -25% effort	5.69 (0.45%)	4.06	0.07 (<0.01%)	0.05	0.64 (0.07%)	0.05	0.22 (0.31%)	0.48	2.34	5.01 (0.66%)
Catch assuming static effort	7.58 (0.60%)	5.41	0.10 (0.01%)	0.07	0.86 (0.10%)	0.06	0.29 (0.41%)	0.48	3.12	6.68 (0.88%)
Catch assuming +25% effort	9.48 (0.75%)	6.76	0.12 (0.01%)	0.09	1.07 (0.12%)	0.08	0.37 (0.51%)	0.60	3.90	8.35 (1.10%)
2000 TTAC ¹	1,256.00	Not estimated	1725.00	Not estimated	896.00	Not estimated	72.00	Not Estimated	Not estimated	761.00

¹ 2000 Target TAC reflects Amendment 9 objectives (F_{MSMC}) listed in 1999 MSMC report. The 2000 Target TAC based on Amendment 7 objectives for Gulf of Maine cod is 1118 mt.

5.1.3.1.4 Impact of Options to Adjust Framework 33 “Rolling Closure” Provisions

The Council considered two alternatives for exempting the whiting raised footrope trawl fishery from the October/November closed areas established in Framework 33: (1) allowing the raised footrope trawl fishery to occur within the Gulf of Maine closed areas and (2) closing only the northern half of Blocks 124 and 125 during the times when the closure of these blocks overlaps with the raised footrope trawl fishery. These two options were considered by the Council during the development of Framework 33, but action was delayed until this framework adjustment could be developed to address the raised footrope trawl fishery in its entirety. *Option 1* represents the proposed action.

This section presents an analysis of the two options that the Council considered during the development of this framework adjustment; it includes discussion of bycatch, enforcement, and administration among other issues. The following information characterizes the amount and type of groundfish bycatch that has been observed in the raised footrope trawl fishery between 1996 and 1999. These data confirm that the raised footrope trawl has operated effectively in Areas 2B and 4 with less than 5% overall groundfish bycatch. Additional information provided in this section supports the notion that Atlantic cod is more concentrated in the northern half of Block 124 (where the raised footrope trawl fishery does not occur) and that protection of the northern half of the block is more critical for the recovery of the Gulf of Maine cod stock than protection of the southern half of the block.

Supporting Groundfish Bycatch Information from Experimental Fisheries

DMF has conducted sea sampling trips in the raised footrope trawl fishery for more than four years to obtain data to meet standards for an exempted fishery. In 1996, DMF conducted 20 sea sampling trips in Area 2B. For those 20 trips, cod bycatch was reported to comprise 0.04% of the total catch. In addition, total regulated species bycatch was well below 5% for those 20 observed trips.

Table 7 summarizes catch and bycatch information for about 24 sea sampling trips during the 1997 experimental fishery. For both areas, regulated species catch averaged less than 5% of the total catch. Most groundfish that were caught were flatfish species (winter flounder, American plaice), but overall, the fishery operated in these areas with very little bycatch during 1997.

Table 7 Data from 24 Sea Sampling Trips in 1997 Raised Footrope Trawl Fishery

	AREA 2B	AREA 4
Sampling Period	9/14-11/19	10/24-11/20
Total Catch (pounds)	79,322	6,145
Regulated Species Catch	3,396	19
PERCENT REGULATED SPECIES Catch Rates (Lbs./Hour):	4.3%	0.3%
Whiting	268	219
Red Hake	87	22
Winter Flounder	13	0
American Plaice	9	0
Yellowtail Flounder	<1	<1
Atlantic Cod	2	1
White Hake	2	0
Haddock	0	0
Pollock	0	0
Total Flatfish Catch Rate (lbs./hr)	24	<1
Total Roundfish Catch Rate (lbs./hr)	4	1

Table 8 reports catch and bycatch information for about 43 tows observed on sea sampling trips during the 1998 experimental fishery in Areas 2B and 4. For both areas, total regulated species catch averaged well below 5% of the total catch. While cod comprised the largest percentage of regulated species bycatch, overall, the raised footrope trawl operated successfully in these areas with minimal interaction with regulated multispecies.

Table 8 Data from 43 Sea Sampling Tows in 1998 Raised Footrope Trawl Fishery

	AREA 2B	AREA 4
Sampling Period	10/5-11/12	10/5-11/19
Total Catch (pounds)	39,785	20,932
Regulated Species Catch	1,107	295
PERCENT REGULATED SPECIES Catch Rates (Lbs./Hour):	2.8%	1.4%
Whiting	569	796
Red Hake	19	0
Winter Flounder	4	3
American Plaice	2	0
Yellowtail Flounder	2	2
Atlantic Cod	6	6
White Hake	0	0
Haddock	0	0
Pollock	0	0
Total Flatfish Catch Rate (lbs./hr)	9	5
Total Roundfish Catch Rate (lbs./hr)	6	6

Cod Distribution in Block 124

The Northeast Fisheries Science Center provided the Council with an analysis of Atlantic cod distribution in Block 124 (Appendix III, Wigley and Brown, NEFSC). The Science Center reviewed information from spring and autumn research vessel surveys, domestic sea sampling data, and commercial logbook data (VTR) with an emphasis on 1998.

Tows were made at a total of 30 stations during the autumn survey (1995-1999) and 24 stations during the spring survey (1994-1998) in Block 124. The overall catch rate of cod in the northern half of Block 124 was 10.4 times greater than it was in the southern half (21.9 kg/tow vs. 2.1 kg/tow) during the spring survey. During the autumn survey, the overall catch rate in the northern half was 5.1 times greater than it was in the southern half (12.8 kg/tow vs. 2.5 kg/tow). Distribution plots show that cod are most concentrated in the northwest and west-central portions of Block 124.

Three gear types accounted for all cod catch examined in the sea sampling database: gillnet, otter trawl, and scallop dredge. A total of 24,802 pounds of cod were caught on these observed trips, primarily by gillnet vessels. Of the total observed cod catch, about 3% came from the southern half of Block 124.

In 1998, a total of 11,120 metric tons of Atlantic cod were reported as landings in the dealer weighout database (all stocks and all areas). Of this total, only 6,875.5 mt (62%) can be accurately cross-referenced with VTRs to obtain information on “area fished.” Eleven percent of this VTR data was reported to have been caught in Block 124 during 1998. About 14% of the landings from Block 124 came from the southern half of the block. If these landings are expanded to the dealer database total, then the landings in the southern half of Block 124 would account for about 2% of all cod landings and about 4% of the total landings for the Gulf of Maine cod stock.

Comparative Analysis of Options to Adjust the October/November Closure Provisions

The following two options for the raised footrope trawl fishery were compared and evaluated based on potential biological impacts, potential economic impacts, administration, enforcement, bycatch, and data acquisition:

- (1) ***The Proposed Action (Option 1)***: Exempting participants in the raised footrope trawl fishery from the Gulf of Maine closed areas that overlap with the timing of the fishery (during the fall in Blocks 124 and 125)
- (2) ***The Rejected Alternative (Option 2)***: Closing only the northern half of Blocks 124 and 125 (where applicable) so that the raised footrope trawl fishery area would remain open to all types of fishing.

Table 9 compares the two alternatives that the Council considered and characterizes the differences in their potential impacts. A “+” denotes that the option is likely to produce a *more positive* benefit than the other option for the category under consideration. A “-” denotes that the option is likely to produce a *more negative* benefit than the other option for the category under consideration. Additional comments are provided to help characterize the differences between the likely impacts of the two alternatives.

Table 9 Comparative Analysis of Options to Adjust the October/November Closure Provisions

	Biological Impact	Economic Impact	Administration	Enforcement	Bycatch	Data Acquisition
Option 1 – Proposed Action: Exempt from Closed Area	+ prevents other vessels from fishing in area and targeting reg. spp	+ provides opportunity for small mesh boats to remain viable in the GOM during fall and winter-offers alternative fishery for boats that can catch whiting	- would likely require a call-in program and exemption certificates, similar to the Cultivator Shoal whiting fishery – increases administrative burden	- difficult to identify rft vessels from a distance – would require increased monitoring to distinguish rft vessels from other vessels in the area	+ more positive than Option 2- reg. spp bycatch with rft unlikely to exceed 5% - overall catch of reg. spp will be lower	+ exemption program could allow for better info on vessels in the rft fishery – no. and type of vessels and better time-specific data
Option 2 – Rejected Alternative: Move boundary of closed area	- allows all boats to access the area and potentially target reg. spp– does not offer the same protection to reg. spp as Option 1 and could weaken the groundfish rebuilding program - not supported by the Groundfish PDT because of groundfish rebuilding concerns	+ provides more opportunity for all vessels that historically fish in that area (for all species) to remain viable in the GOM during fall and winter - negative in the long run if it compromises groundfish rebuilding and results in the need for additional restrictions	+ eliminates necessity to monitor which vessels are in the area – would not require a certification program	+ does not require additional monitoring to distinguish rft vessels from other vessels fishing in the area	- more negative than Option 1–likely to result in greater overall catch of reg. spp because area would be open for vessels to target groundfish - not supported by the Groundfish PDT because of groundfish rebuilding concerns	- no mechanism to monitor the activities of vessels in the rft fishery or in other fisheries in the area-no chance to get better data through the program

* “reg. spp” refers to the ten regulated groundfish species; “rft” refers to the raised footrope trawl fishery

The Council rejected Option 2 based on recommendation of the Groundfish PDT and based on subsequent analyses suggesting that this option would have a greater impact on some large mesh regulated species than Option 1. Analyses supporting these conclusions are provided below.

The impact of vessels participating in the raised footrope trawl fishery on large mesh regulated species would be the same for Options 1 and 2. However, Option 2 would have allowed multispecies vessels to fish in the southern area of Blocks 124 and 125 during the Oct./Nov. “rolling closure,” which may allow for increased catches of large mesh regulated species as compared to 1999. A NEFSC analysis suggests that impacts on Gulf of Maine cod would be negligible in the southern portion of Blocks 124 and 125 during October and November (Appendix III). However, other large mesh regulated species were not analyzed. An examination of monthly landings by 30-minute squares for 1989-1993 (Multispecies SAFE Report, 1999) suggests that Blocks 124 and 125 are important sources of landings for Gulf of Maine winter flounder (top 25th-50th percentile in November) and monkfish (top 1st-25th percentile in November). Furthermore, winter flounder landings were within the top 25th percentile in Block 115 (abuts the southern edge of block 124), suggesting that winter flounder landings from the southern area of Block 124 may be substantial in November. Other species that ranked in the top 75th (50-75th percentile) during the months of October and November include Cape Cod yellowtail flounder, witch flounder, American plaice, and pollock.

Catches of large mesh regulated species by large mesh vessels would clearly increase by modifying the boundary of the closure and would likely be less conservative than the 1999 “status quo.” Estimating potential catches of regulated species in Option 2 is difficult because the landings data are not readily available in intervals less than 30 minute square – month blocks. In addition, predicting the amount of large mesh fishing effort drawn to the partial opening would be difficult because the five-month closure of Blocks 124 and 125 (February, March, April, October, November) may have altered pre-Framework 27 temporal patterns of large-mesh effort usage. The Groundfish PDT examined both options originally for Framework 31 and concluded that modifying the boundary of the October-November closed area “would pose an unacceptable risk to cod and other overfished species.” The conclusion relative to cod was based on examining cod landings from Blocks 124 and 125 and was made prior to estimating cod landings from the southern half of Blocks 124 and 125.

The Council rejected Option 2 based on potentially increased catches of large mesh regulated species and the difficulty in predicting the amount of regulated groundfish bycatch that could occur under Option 2. In contrast, analysis of Option 1 (the proposed action) is based only on effort and discard rates in the raised footrope trawl fishery, a fishery that will be more geographically confined than in Option 2. Option 1 requires less sea sampling than Option 2 to monitor the impact on groundfish bycatch as only the raised footrope trawl fishery needs to be sampled.

5.1.3.1.5 Summary and Conclusions

Establishing a seasonal whiting raised footrope trawl fishery in upper Cape Cod Bay will not significantly impact mortality or rebuilding schedules for any large mesh regulated groundfish stocks. The raised footrope trawl fishery has been ongoing as an experimental fishery since 1995 and has occurred during the 1999 October/ November rolling closure of blocks 124 and 125.

The low absolute catches of large mesh regulated species projected for 2000 and the fact that the exempted fishery is more restricted in area and season than the experimental fishery in 1999 suggests that the raised footrope trawl fishery is unlikely to exert any additional mortality on large mesh regulated species. Large increases in effort are not expected because a substantial proportion of the fishery occurs within state waters (Figure 6), requiring a Massachusetts' Coastal Access Permit (limited access, with moratorium on new permits) and maximum vessel size of 72'. At minimum, Option 1 for adjusting the October/November closure, the proposed action, is "conservation neutral" relative to 1999 and actually may slightly reduce catches of large mesh regulated species.

Table 10 summarizes the total potential catch of regulated multispecies in the raised footrope trawl fishery if effort in the fishery (a) decreases by 25%, (b) remains static (at 1999 levels), or (c) increases by 25%. Table 10 compares expected catch of regulated species in the raised footrope trawl fishery (as calculated by expanded sea sampled estimates) to either 2000 Target TAC levels for multispecies stocks (if one has been specified) or 1999 landings (preliminary, January – November only) and presents the estimate of catch in the raised footrope trawl fishery as a percentage of either the Target TAC or the 1999 landings. This table serves to characterize (in a relative sense) the total magnitude and proportion of regulated multispecies catch that may be attributed to the raised footrope trawl fishery in the future (although all regulated species catch in the raised footrope trawl fishery will be discarded). It illustrates that even under the 25% increased effort scenario, only 0.31% of the total potential multispecies catch (or landings) could be expected to come from the raised footrope trawl fishery.

The Council already formally voiced its support for the continuation of the raised footrope trawl fishery on several occasions (discussion at Committee and Council meetings, letters to NMFS, see Appendix I). The data presented in this framework document indicate that 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 Massachusetts DMF. The Council believes that the development of the raised footrope trawl demonstrates the creativity and innovation that will keep the small mesh fishing fleet in the Gulf of Maine viable now and in the future. In turn, the Council wants to provide these vessels with an opportunity to catch whiting in the Gulf of Maine during the fall and winter. The Provincetown dayboats in particular are critically dependent on nearshore access to whiting fishing grounds.

Table 10 Expected Catch of Regulated Species Under Static Effort (1999 Levels), 25% Increase in Effort, and 25% Decrease in Effort Compared to Either the 2000 Target TAC or January – November 1999 Landings

Catches and landings are in metric tons.

SPECIES	American Plaice	GOM Winter Flounder**	Witch Flounder	Windowpane Flounder**	Cape Cod YT	Redfish**	White Hake	GOM Haddock**	Pollock**	GOM Cod	TOTAL (mt)
Projected Catch (mt) Assuming -25% Effort	5.69 (0.45%)	4.06 (1.56%)	0.07 (<0.01%)	0.05 (0.12%)	0.64 (0.07%)	0.05 (0.01%)	0.22 (0.31%)	0.48 (0.09%)	2.34 (0.06%)	5.01 (0.66%)	18.61 (0.19%)
Projected Catch (mt) Assuming Static Effort (1999)	7.58 (0.60%)	5.41 (2.08%)	0.10 (0.01%)	0.07 (0.16%)	0.86 (0.10%)	0.06 (0.02%)	0.29 (0.41%)	0.48 (0.09%)	3.12 (0.08%)	6.68 (0.88%)	24.65 (0.25%)
Projected Catch (mt) Assuming +25% Effort	9.48 (0.75%)	6.76 (2.6%)	0.12 (0.01%)	0.09 (0.21%)	1.07 (0.12%)	0.08 (0.02%)	0.37 (0.51%)	0.60 (0.11%)	3.90 (0.09%)	8.35 (1.10%)	30.82 (0.31%)
2000 Target TAC (mt)* OR Jan-Nov 1999 Landings**	1,256.00	260.00	1725.00	43.00	896.00	322.00	72.00	529.00	4152.00	761.00***	10,016

* Target TACs were estimated by the MSMC (1999) by applying the target fishing mortality rate to current biomass estimates for those species.

** Shaded columns are those species for which a Target TAC for 2000 was not estimated. Instead of comparing the raised footrope trawl catch to the Target TAC for these species, comparisons are made to Jan. – Nov. 1999 landings. January – April 1999 landings were taken from the MSMC 1999 Report; May – November landings were taken from preliminary data provided by NMFS as of 3/23/00.

*** 2000 Target TAC for Gulf of Maine Cod reflects Amendment 9 objectives (F_{MSMC}) listed in 1999 MSMC Report. The 2000 Target TAC based on Amendment 7 objectives for Gulf of Maine cod is 1,118 mt.

5.1.3.2 Impacts on Spiny Dogfish

Current regulations allow vessels to land 600 pounds of spiny dogfish from May 1 – October 31 and 300 pounds from November 1 – April 30 until the quota of 4 million pounds is reached.

Spiny dogfish have been caught routinely as bycatch in the whiting fishery dating back before the development of the raised footrope trawl. In fact, in 1995, DMF promoted the use of the raised footrope trawl to allow small mesh trawling for dogfish in state waters because the bycatch of regulated species was presumably below 5 percent. During the late 1980s and prior to 1995, Provincetown trawlers targeted dogfish during the summer and fall in most of Cape Cod Bay (and in other state waters) under DMF regulations. This included a prohibition on the possession of regulated multispecies for any vessel fishing with small mesh. Council action (Amendment 5) in 1994 prohibited this fishery in state waters for any federally permitted vessel. This action brought the directed dogfish fishery in Massachusetts waters to a close in 1995.

In the September – November whiting fishery in upper Cape Cod Bay, spiny dogfish is not one of the target species; rather, it is bycatch that is occasionally retained. Catches in the proposed exemption area have been highly variable among years, trips, and tows. The size composition of the catch as well as daily market conditions affect fishermen's decisions to either retain or discard their dogfish catch. Fishermen *usually* avoid large concentrations of dogfish because of its impact on the quality and marketability of their whiting product. A soft-bodied fish, whiting are often crushed and lose a significant amount of scales when they captured in the codend with large amounts of spiny dogfish (because of the dogfish's coarse skin). If schools of dogfish are present in a given area, fishermen usually attempt to avoid the dogfish and/or minimize the catch of dogfish by towing in different locations. However, on some occasions in the past, strong demand and low whiting catches have motivated fishermen to target dogfish for the remainder of the trip.

In the 1999 experimental raised footrope trawl fishery, the reported spiny dogfish catch (retained and discarded catch based on sea sampling and fishermen's log reports) was 400,051 lbs (239 mt). This value is lower than that generated by expanding the sea sampling data to estimate the catch from unobserved trips (528,994 lbs.). The reported catch that was landed in the ports of Provincetown and Gloucester by vessels participating in the raised footrope trawl experimental fishery (presuming these vessels fished almost exclusively in the proposed exemption area) totaled 364,794 lbs. (165.5 mt).

While dogfish was a primary target species for some vessels participating in the raised footrope trawl experimental fisheries, it will no longer be. Low trip limits (600 and 300 lbs.) will prevent fishermen from targeting dogfish in this and other fisheries. With these low allowable trip limits, if high dogfish catch starts to occur during the course of a trip in the raised footrope trawl fishery, fishermen will not be able to switch their target species from whiting and red hake to dogfish. They will be more likely to try to find other areas (within the proposed exemption area) to fish for a "cleaner" (and thus more marketable) catch of whiting. This should lower both the overall landings of spiny dogfish as well as the mortality of dogfish in the raised footrope trawl fishery.

5.1.3.3 Impacts on Atlantic Herring

The Atlantic Herring FMP was approved by NMFS October 27, 1999 and implementation is expected during the summer of 2000. This FMP uses a total allowable catch (TAC) distributed to four management areas to control herring mortality. There are no restrictions on gear, and the fishery is open access so any vessel may obtain a herring permit. When 95% of the TAC is caught, the directed fishery for herring is closed, but vessels are allowed to land up to 2,000 pounds of herring in any single calendar day. This will allow fisheries that have an incidental catch of herring to continue. The allowance was established based on recent observations of all catches of herring by other gear types over the entire year. Since the allowance will only be applied after the directed fishery is closed, it is sufficiently cautious that it will prevent the TAC from being exceeded by incidental catches that take place after the directed fishery is closed. At the same time, by not prohibiting the landing of herring, it serves to minimize wasteful discards. The allowance, which can be adjusted in future years if necessary, included consideration of the experimental raised footrope trawl fishery when it was determined.

The raised footrope trawl fishery will take place primarily in herring Management Area 1A. The recommended TAC for this area is 45,000 mt, approximately 60% of recent landings from this area. If this TAC is approved, there is a possibility that the directed herring fishery will be closed prior to the end of the raised footrope trawl fishery. If this occurs, these vessels will only be able to land up to 2,000 pounds of herring. A review of the observer data for the 1999 experimental fishery (Appendix II) shows that these vessels caught between zero and 174 pounds of herring per trip, far below the amount that will be allowed to be landed under the herring regulations. In fact, of 71 observed trips, 34 did not catch any herring and only four caught over 100 pounds. This information is consistent with observations from the 1997 fishery, where the catch of Atlantic herring averaged five pounds in Area 2B and 96 pounds in Area 4, with no trips that exceeded 309 pounds. Based on this information, the raised footrope trawl fishery is unlikely to result in a significant herring catch that will result in the herring TAC being exceeded by incidental catches in this fishery. The herring incidental catch allowance appears set high enough that the raised footrope trawl fishery will not generate significant herring discards. Finally, if the herring TAC is not reached by the time this fishery begins, it is unlikely that there will be sufficient herring landings in the raised footrope trawl fishery to significantly speed the harvest of the herring TAC.

5.1.4 Impacts on Endangered and Threatened Species and Other Marine Mammals

Framework Adjustment 35 proposes to allow a seasonal whiting raised footrope trawl fishery in Cape Cod Bay and the southern Gulf of Maine. The action would establish a permanent whiting and red hake fishery that would provide a seasonal small mesh fishing opportunities for vessels fishing in and around the Gulf of Maine. Operation of the fishery is proposed for September 1 – November 20 in an area defined by information collected by DMF through a number of experimental fisheries conducted between 1996 – 1999. To discourage vessels from rigging their gear improperly, multispecies and other bycatch restrictions for the fishery are proposed to be the same as in the experimental fishery and are more restrictive than those required for *Multispecies Exempted Fisheries*. Net specifications include a requirement for participating vessels to use a minimum 2.5-inch mesh and a prohibition on the use of net strengtheners.

As discussed in Amendment 12 and reviewed Framework Adjustment 32 to the Northeast

Multispecies FMP, the operation of the whiting fishery may have potential impacts on endangered and threatened species and other marine mammals. Interactions may occur, given the overlap between the range of a number of protected species and the prosecution of the fishery in upper Cape Cod Bay (Figure 6). Although the possibility of encounters with small mesh otter trawls (the predominant gear type in this fishery) exists, DMF observer coverage during the 1996-1999 seasons contains no documented takes of threatened, endangered or other protected species, including sea turtles. Furthermore, the proposed action states that DMF will likely contribute 4-7 sea sampling trips per month during the raised footrope trawl fishery season, and there is a recommendation for NMFS to match this level of coverage. Concerns that turtles become entangled in mesh greater than or equal to 4-inches, as used in the summer flounder fishery, may be addressed by the fact that participants are not likely to use mesh over 3-inches because of the potential for a significant loss of catch.

Right whales and harbor porpoise are both species of concern because of their low stock status, in the case of right whales, and for porpoise, because of high levels of bycatch in the multispecies fishery. Both species are managed under established Take Reduction Plans that were discussed in Amendment 12. Additional measures are under consideration for the Atlantic Large Whale Take Reduction Plan that will reduce the overall risk of entanglement represented by the multispecies fishery. This proposed action should have no affect on right whale critical habitat or right whale utilization of the area.

NMFS has previously concluded that measures approved for the whiting fishery fall within the scope of consultations on prior Northeast Multispecies FMP actions. 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 proposes that actions contained in Framework 35 are not likely to jeopardize the continued existence of any endangered and threatened species, or affect critical habitat.

5.1.5 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 Fishery Management Plan. The alternatives and actions proposed in this framework adjustment will not increase any adverse impacts on essential fish habitat (EFH) resulting from fishing activity.

Reductions in fishing effort are one mechanism known to minimize the adverse impacts on habitat associated with fishing practices by reducing the frequency and intensity of fishing gear use. The modification of fishing gear, that which reduces the weight of fishing gear or the amount of fishing gear in contact with the bottom, is another mechanism known to reduce the adverse impacts on habitat associated with certain fishing activities. 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 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.

5.1.5.1 Raised Footrope Trawl Fishery Season

This measure proposes to allow the raised footrope trawl fishery to operate from September 1 until November 20 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.

5.1.5.2 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 3.1.2 of this document. This area is currently open to all types of bottom-tending mobile fishing gear, except during the “rolling closures” (see Section 3.1.4 of this document). Due to the nature of the fishing gear used in the raised footrope trawl fishery, 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.

5.1.5.3 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.

5.1.5.4 Adjustment to Framework 33 October/November Closure Provisions

The two options that the Council considered either exempted the raised footrope trawl fishery from the temporary closures in a portion of the Gulf of Maine (Blocks 124 and 125) or moved north the southern boundary of these closures so as to avoid conflict with the boundary of the raised footrope trawl fishery. Neither of these options would have allowed fishing with the raised footrope trawl in the year-round area closures, but only in the short-duration temporary closures. Neither option is therefore expected to have a direct effect on the habitat of the region. (The Council chose to exempt participants from the temporary closures in a portion of the Gulf of Maine (Blocks 124 and 125)).

5.1.5.5 Allowable Landings and Bycatch Restrictions

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

5.1.5.6 Recommended Level of Monitoring

This recommendation would not be expected to have any effect on the habitat of the region.

5.1.5.7 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.

5.1.5.7.1 Description of the Proposed Action

See Section 3.1 for a description of the action proposed in this framework adjustment. The activity described by this proposed action, fishing for whiting and red hake with a raised footrope

trawl, is proposed to occur only in the areas of upper Cape Cod Bay and southern Gulf of Maine (see Figure 6). The range of this activity occurs across the designated EFH of most Council-managed species (all but offshore hake – see Amendments 11 and 12 to the Northeast Multispecies FMP). The range of this activity also occurs across the designated EFH of most species managed by the Mid-Atlantic Fishery Management Council (all but ocean quahog and tilefish) and species managed under the NMFS Highly Pelagic Species FMP.

5.1.5.7.2 Analysis of the Effects of the Proposed Action

This action proposes to allow a seasonal whiting raised footrope trawl fishery in upper Cape Cod Bay and the southern Gulf of Maine. This action will allow for a transition from a successful experimental fishery for whiting and red hake focused on minimizing regulated species bycatch to a more permanent fishery that provides a seasonal small mesh fishing opportunity for vessels fishing in and around the Gulf of Maine. The proposed season for the raised footrope trawl fishery is September 1 - November 20. The proposed area is a subset of Areas 2B and 4 from the experimental fishery (see Figure 1) and encompasses the area that was most heavily fished and most heavily sampled by observers during the annual experimental fisheries from 1996-1999.

Although the raised footrope trawl proposed to be used in the small mesh whiting fishery may be associated with some adverse impacts to some types of bottom habitat, the impacts from this gear configuration may be less than traditional otter trawl configurations due to the reduced direct contact with the sea floor (see Section 4.5 of Amendment 11 to the Northeast Multispecies FMP). This action does not propose to increase current levels of fishing activity in the U.S. EEZ. The other measures proposed in this action (adjustments to Framework 33 rolling closure provisions, allowable landings and bycatch reductions, and recommended level of monitoring) would have no impact on habitat. None of these proposed actions will have any direct adverse impacts on the EFH of any managed species relative to the baseline conditions established under Amendments #11 and 12.

5.1.5.7.3 Conclusions

The action proposed under this framework has no potential adverse effects on the EFH of any species managed by the New England, Mid-Atlantic, or South Atlantic Fishery Management Councils or the National Marine Fisheries Service. Because there are no potential adverse impacts associated with this action, an EFH consultation is not required.

5.1.5.7.4 Proposed Mitigation

None required.

5.2 ECONOMIC IMPACTS

5.2.1 Background Information

Table 11 and Table 12 summarize, by port, pounds and value of species landed in the experimental raised footrope trawl fishery in 1998 and 1999 respectively and characterize the positive economic impact that this fishery will have primarily in the ports of Gloucester and Provincetown, but also in Chatham. During the 1998 season, vessels from Chatham, Gloucester, and Provincetown participated in the experimental raised footrope trawl fishery and landed a total of over 1,900,000 pounds of fish, valued at about \$930,000. Gloucester landed 53.6% of the total volume and 58.7% of the fishery's value. Provincetown followed, landing 39.7% of the volume and 38% of the value; vessels from Chatham comprised the remainder.

Twenty four vessels from the ports of Chatham, Gloucester and Provincetown actively participated in the 1999 Raised Footrope Trawl Experimental Fishery landing (from a total of 459 trips) 3.1 million pounds of fish with an ex-vessel value of approximately \$1.9 million dollars. Eighty-three percent of the volume landed and ninety-three percent of the value was attributable to the target species silver hake and red hake. Approximately 65% of all fishery activity (volume, value, trips) were from the port of Provincetown; Gloucester had 30%, and Chatham 5%.

In general, whiting and red hake were the two predominant species caught in the fishery. They comprised about 80% of the total landings and more than 90% of the fishery's total value during 1998 and 1999. Spiny dogfish was the third most-landed species, comprising about 13-14% of the total landings and about 5% of the total fishery value during 1998 and 1999. Landings and revenues from spiny dogfish in this fishery can be expected to decrease below the levels observed in the experimental fishery because spiny dogfish was targeted on some trips during the experimental fishery. New landing limits on dogfish (600 and 300 pounds) will prevent vessels in this fishery from targeting dogfish.

Table 11 Summary of Landings and Value by Species and Port for 1998 Experimental Raised Footrope Trawl Fishery

	Port of Landing Gloucester		Provincetown		Chatham		Grand Total		Grand Total	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Percent	Value	Percent
Whiting	812,512	\$487,507.20	517,261	\$305,183.99	22,568	\$12,186.72	1,352,341	70.5%	\$804,877.91	86.6%
Red Hake	115,602	\$35,836.62	30,812	\$5,546.16	12,657	\$3,037.68	159,071	8.3%	\$44,420.46	4.8%
Spiny Dogfish	73,923	\$13,306.14	85,994	\$15,478.92	88,301	\$15,011.17	248,218	12.9%	\$43,796.23	4.7%
Mackerel	12,270	\$4,662.60	120,707	\$24,141.40	837	\$108.81	133,814	7.0%	\$28,912.81	3.1%
Squid, Loligo	1,085	\$455.70	2,892	\$1,301.40	0	\$0.00	3,977	0.2%	\$1,757.10	0.2%
Squid, Ilex	3,585	\$752.85	25	\$5.25	0	\$0.00	3,610	0.2%	\$758.10	0.1%
Squid, NS	3,288	\$1,939.92	2,055	\$822.00	47	\$18.80	5,390	0.3%	\$2,780.72	0.3%
Herring	4,600	\$414.00	0	\$0.00	1,350	\$121.50	5,950	0.3%	\$535.50	0.1%
Butterfish	1,060	\$657.20	2,015	\$483.60	1,297	\$817.11	4,372	0.2%	\$1,957.91	0.2%
N/S Finfish	310	\$130.20	0	\$0.00	0	\$0.00	310	0.0%	\$130.20	0.0%
Scup	10	\$2.00	5	\$1.00	0	\$0.00	15	0.0%	\$3.00	0.0%
Bluefish	0	\$0.00	15	\$3.00	0	\$0.00	15	0.0%	\$3.00	0.0%
Sea Bass, Black	2	\$4.00	2	\$3.00	0	\$0.00	4	0.0%	\$7.00	0.0%
Grand Total	1,028,247.00	\$545,668.43	761,783	\$352,969.72	127,057	\$31,301.79	1,917,087	100.0%	\$929,939.94	100.0%
Trips	246		170		23		439			
Pounds/trip	4,180		4,481		5,524		4,367			

Table 12 Summary of Landings and Value by Species and Port for 1999 Experimental Raised Footrope Trawl Fishery

	Port of Landing Gloucester		Provincetown		Chatham		Grand Total		Grand Total	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Percent	Value	Percent
Whiting	877,210	\$508,781.80	1,383,273	\$1,161,949.49	88,796	\$48,837.80	2,349,279	75.1%	\$1,719,569.09	88.3%
Red Hake	55,403	\$22,715.03	163,621	\$73,629.63	20,936	\$3,559.12	239,960	7.7%	\$99,903.78	5.1%
Spiny Dogfish	157,383	\$23,607.45	207,411	\$29,037.48	77,944	\$13,250.48	442,738	14.2%	\$65,895.41	3.4%
Mackerel	14,980	\$6,890.80	9,449	\$6,425.32	1,429	\$757.37	25,858	0.8%	\$14,073.49	0.7%
Squid, Loligo	22,802	\$14,137.24	10,990	\$10,110.80	51	\$24.99	33,843	1.1%	\$24,273.03	1.2%
Squid, Ilex	515	\$154.50	0	\$0.00	0	\$0.00	515	0.0%	\$154.50	0.0%
Squid, NS	1,265	\$986.70	23,331	\$16,098.39	3,883	\$3,300.55	28,479	0.9%	\$20,385.64	1.0%
Herring	1,310	\$262.00	405	\$89.10	0	\$0.00	1,715	0.1%	\$351.10	0.0%
Butterfish	2,703	\$1,081.20	870	\$252.30	517	\$258.50	4,090	0.1%	\$1,592.00	0.1%
Scup	0	\$0.00	0	\$0.00	24	\$16.08	24	0.0%	\$16.08	0.0%
Bluefish	0	\$0.00	21	\$13.02	0	\$0.00	21	0.0%	\$13.02	0.0%
Sea Bass, Black	0	\$0.00	0	\$0.00	54	\$104.22	54	0.0%	\$104.22	0.0%
Grand Total	1,133,570.50	\$578,616.72	1,799,371	\$1,297,605.53	193,634	\$70,109.11	3,126,576	100.0%	\$1,946,331.35	100.0%
Trips	132		300		27		459			

5.2.2 Economic Effects of Proposed Action

The regulatory alternative presented in this framework document proposes to list the raised footrope trawl fishery as a *Multispecies Exempted Fishery* and to allow the resumption of directed whiting fishing in a spatially and temporally well-defined area off of Massachusetts in Cape Cod Bay. The minimum net effect of this action would be to continue the level of participation and, subject to biological and market considerations, generate levels of ex-vessel landings and value of whiting, red hake and other species similar to those generated in the experimental fisheries. These figures are discussed in Section 5.2.1 and are documented in McKiernan et al. (1997-2000). Table 11 and Table 12 summarize these figures for the 1998 and 1999 experimental fisheries.

The “status quo” alternative to the proposed action would be to not establish a small mesh whiting fishery in upper Cape Cod Bay. It is unlikely that under the “status quo” alternative, an experimental fishery of the magnitude of those from 1996 - 1999 would be allowed to continue. The net economic effect of the status quo would be the elimination of the landings and revenue from the experimental fishery as documented above. The elimination of the fishing opportunities in the raised footrope trawl fishery would significantly alter the effected vessel’s strategies for participation in other fisheries (groundfish and lobster, for example).

As discussed in Section 3.1, the “range” of alternatives for this fishery were considered and analyzed through the series of experimental fisheries from 1996-1999. For example, a number of different time and area parameters were tested in the experimental fisheries from 1996 to 1999. The parameters proposed in this framework adjustment were chosen in close consultation between the industry, Massachusetts DMF, the NMFS Regional Office, and Council staff. The history of the experimental fishery is documented in Section 1.3. The specifications proposed in this framework are the result of four years of experiments and discussions with all the stakeholders. The Council has deliberated all of the relevant historical information and concluded that the proposed action is the best and only option for consideration in this framework. Therefore, the economic effects pertain only to the proposed action versus the status quo discussed above.

5.2.2.1 Sustained or Increased Participation

The number of vessels targeting whiting in the Gulf of Maine peaked in 1987 at 99 vessels; all but one were from Massachusetts. That number fell to near zero in 1994 and 1995 due to restrictions on small mesh fishing implemented in Amendment 5. Beginning in 1996, the number of vessels targeting whiting in the Gulf of Maine rose to between 23 and 27; most of these vessels were participating the raised footrope trawl experimental fishery. Although it is difficult to predict, participation in an exempted raised footrope trawl fishery is not expected to increase dramatically. Many of the pre-1994 vessels that targeted whiting in the Gulf of Maine have been retired from the fishery through vessel buybacks. The experimental fishery participation levels provide a reasonable estimate of current interest in the fishery. There is the possibility that an exempted fishery may attract vessels from New Bedford or New Hampshire although this cannot be predicted.

5.2.2.2 Sustained or Increased Harvest

The question of sustained or increased landings of whiting with an exempted raised footrope trawl fishery is a biological issue and an effort issue. As discussed above, it is not clear whether an exempted raised footrope trawl fishery will attract additional effort and perhaps result in increased landings. The experimental fishery has been constrained spatially and temporally as will the proposed exempted fishery (the exempted fishery is constrained spatially and temporally *more* than the experimental fishery was). Fishermen were free to search for whiting within the constraints of the experimental fishery, and their success was likely a result of biological and environmental factors. Effort and landings will continue to be a function of abundance of whiting within the exempted fishery area. The clear benefit to individual vessels and their communities from continued landings of whiting and red hake from the exempted raised footrope trawl fishery is in the form of additional revenue generated amidst severe restrictions on their groundfishing activities.

5.2.2.3 Price Effects and Landings

It is not entirely clear what effect increased whiting landings from an exempted raised footrope trawl fishery would have on the market. Most whiting landed in Massachusetts ports is boxed, iced, and shipped to the Fulton Fish Market in New York City. Local consumption and processing of whiting is very small. The Fulton market is the central market maker for fresh whiting on the East Coast and therefore determines the price paid to Massachusetts vessels less the cost to ship the product to New York.

Vessel unloading capacity and trucking capacity are limiting factors when considering the effects of a potentially expanded raised footrope trawl fishery. Daily oversupply conditions can occur in Massachusetts ports, resulting in delayed delivery to market and a lower return to the vessel. Local bottlenecks are less of a long-term concern, recognizing that Massachusetts whiting landings were on the order of three times greater in the late 1980s than they are now, and many more unloading stations existed in Provincetown and Gloucester. With current improvements to state pier facilities in both ports, it is reasonable to assume that unloaders could set up facilities to handle any increase in the volume of landings. An analysis of market conditions in the Fulton market is beyond the scope of this document. Again, it is reasonable to assume that Fulton could accept an increased volume of landings from Massachusetts ports considering the much higher level of landings in the late 1980s.

5.2.2.4 Harvest Costs

Vessels engaged in the raised footrope trawl whiting fishery are large and small groundfish otter trawlers (and one Scottish seine boat). The only real cost of participating in the raised footrope trawl fishery is the cost associated with modifying an existing small mesh net with the raised footrope. This cost has been shown to be on the order of only a few hundred dollars through the numerous nets that have been modified by the industry and DMF for the raised footrope trawl experimental fisheries. This does not represent a significant additional cost to participate in this fishery, provided that the vessel in question already possesses a small mesh net. Most of the vessels interested in participating in this fishery in the Gulf of Maine already possess small mesh nets and have modified their small mesh gear either for this fishery (during the experimental years) or to fish in Small Mesh Areas 1 and 2, or because use of the raised footrope trawl gear has been widely accepted by the industry (many vessels fishing in the Cultivator Shoal Whiting

Fishery use the raised footrope trawl voluntarily because it results in “cleaner” catches of whiting).

A crude analysis of daily revenue throughout 1999 for vessels participating in the fall raised footrope trawl experimental fishery indicates that daily revenue for these vessels is three to four times greater during the peak of the whiting fishery than at any other time of the year. There is a smaller increase in daily revenue during the month of April when these vessels are targeting flounder. Without an analysis of the vessels costs for the raised footrope trawl fishery, it is assumed that daily costs are slightly lower than for other fishing activities during the year, primarily because the whiting grounds are quite close to Provincetown, and steam time is minimal. Costs associated with steaming are comparatively higher for Gloucester vessels as their groundfish grounds are closer than the whiting grounds, and particularly since the areas north and due west of Stellwagen Bank were eliminated from the experimental fishery in 1998 due to high cod bycatch.

5.2.2.5 Management and Monitoring Costs

It is not expected that the implementation and monitoring of this fishery should place any additional cost burden on the industry. Vessels expected to participate in the exempted raised footrope trawl fishery are already in the NMFS logbook program because they all possess federal multispecies permits. During all years of the experimental fishery, and especially during the 1999 season, sea sampling coverage was at an extremely high rate. This was a cost borne by DMF during the experimental fishery. Continued monitoring at a more reasonable level should be expected from both DMF and NMFS throughout the duration of the exempted fishery. In addition, the limited spatial scale of the proposed exempted fishery should result in reasonably low enforcement costs.

5.3 SOCIAL IMPACTS

5.3.1 Background Information

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.

Vessels in the communities of Gloucester and Provincetown, Massachusetts have demonstrated the most interest in and dependence on the small mesh whiting fishery in Cape Cod Bay and the southern Gulf of Maine. These communities are most likely to benefit from the measures proposed in this framework adjustment. The following community profiles are excerpted from Amendment 12 and provide background information necessary to predict the magnitude and extent of social impacts likely to result from the establishment of the raised footrope trawl fishery as a seasonal whiting fishery in Cape Cod Bay and the southern Gulf of Maine.

5.3.1.1 Provincetown, Massachusetts¹

Provincetown (known by locals as “P’Town”) is a historic port with the second deepest harbor in the United States. Unlike Point Judith, the fishing fleet of Provincetown has concentrated its efforts on dragging, and has not significantly diversified into other fisheries. The majority of the fleet are eastern rig otter trawlers (side trawlers), complemented by a small fleet of inshore angling vessels. In 1995, a total of 18 vessels were counted at the docks, with their numbers equally divided between steel and wooden hull vessels.

The town pier has two large docks that extend for approximately 300 yards. The construction is wood and cement and is sturdy enough for 18-wheeler truck traffic. At the end of the pier in 1995 were two fish suppliers: Oceanic Seafood and Whaling City Seafoods. The docks are in good condition, and the Chamber of Commerce has been actively promoting the quality of the harbor for berthing of large offshore (foreign) vessels. The end of the pier is dominated by restaurants and local shops, but there is little evidence of businesses dependent on the fishing industry.

Most of the vessels observed in Provincetown (13 out of 18) were old eastern-rigged otter trawlers. Half of the fleet were of wood construction, while the other half consisted of rusty steel vessels. The fleet is a combination of scallopers and otter trawlers ranging from 45 to 68 feet in length. The otter trawlers employ 2-4 crew members, while the scallopers employ crews up to seven (NMFS regulations prohibit more than seven crew members on scallopers). The isolation of Provincetown ensures that all fishing families live in local residences. Some of these families are having difficulties with their mortgages as they struggle to survive in the fishery. Some of those in economic stress have returned to Portugal.

The age and condition of the vessels is the primary difficulty facing local fishermen. Some vessels have sunk right at the dock. Sunken dockside derelicts have been refloated and reused if not sold outright. Because fishing has been marginal and regulations restrictive, fishermen can only afford to fix the most pressing repairs, ignoring others which could be life-threatening on an extended fishing trip. The condition of the fleet has thus cut into the trawl time of the more problematic vessels. Captains are afraid to venture far from shore for extended periods because of the threat of sinking.

Besides 18 larger vessels, there were 19 smaller jig boats in Provincetown in 1995. Of these, 15 were longliners, two gillnetters, and two lobster boats. The smaller vessels are in better financial shape, since they are less costly, but also since they are not expected to provide direct support for more than 1-2 fishermen and their families. However, all vessels and fishing families are marginalized in this fishing community that is experiencing the worst possible combination of marketing, fish stock, and production capital losses.

The historical and cultural importance of fishing to Provincetown is reflected in murals in the town hall showing fishers bringing in the catch. Provincetown once had a booming fleet that took advantage of its proximity to local fishing grounds to catch large quantities of groundfish.

¹ Excerpted from Amendment 12; cited to: 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; McCay, Bonnie J., B. Blinkoff, R. Blinkoff, and D. Bart. 1993. Report, Part 2, Phase I, Fishery Impact Management Project, a Report to the Mid-Atlantic Fishery Management Council.

Fish were processed and shipped to Boston and other markets, and a thriving processing sector dominated the local docks. About 15 years ago, local respondents report that the industry began to experience a downturn as nearby fish stocks were depleted and area closures such as Stellwagen Bank limited the opportunities to fish near shore.

Recently, and probably due to the decline in groundfish abundance, the Provincetown fleet has invested a significant amount of time and effort into developing alternative fishing strategies, one of which includes fishing for whiting. Fishermen in Provincetown, with the help of the Massachusetts Division of Marine Fisheries, pioneered the Raised Footrope Trawl Experimental Fishery. A vast majority of active draggers out of Provincetown (almost all) have participated in this experiment. Because of the experimental fishery, Provincetown's whiting landings in 1997 were the second highest of any port in the state (almost 1 million pounds), a close second to Gloucester. Between 1980 and 1996, whiting landings in Provincetown have made it the fourth most significant whiting port in the region. Provincetown also was the principal port of landings for one vessel participating in the Cultivator Shoal Whiting Fishery during 1995, and three vessels in the Experimental Separator Trawl Fishery during 1996.

One disadvantage Provincetown has over other ports is its geographic location. Although it has an extremely deep natural harbor, being at the northernmost tip of Cape Cod, its distance from major fish markets has made it difficult to compete with ports having better access to ground transportation such as New Bedford and Gloucester. In the summer time, the one road going into an out of Provincetown on Cape Cod is regularly clogged with tourist vehicles on their way to visiting the beaches or traveling to the art and tourists shops that have come to dominant the Provincetown economic landscape. In the winter time, bad storms can close down the one road making regular access difficult.

Original fishers of Provincetown were English and Scottish immigrants, eventually replaced by Portuguese immigrants who came to dominate the fishing industry. Extended Portuguese families worked in occupational enclaves based on 6-7 person crews. They did not significantly diversify their economic activities and thus remained somewhat culturally and linguistically isolated from other residents. Migration between Provincetown and Portugal was common. Many of the more successful fishermen have left Provincetown over the last 25 years to join the fleet in New Bedford. They were replaced by newer immigrants who would take over aging vessels and "have a go at it." However, others stayed and have fished out of Provincetown for up to 40 years. Because of the outward migration of highlanders, the ethnic insularity of the fleet, and the limited processing, wholesaling, and distribution infrastructure available in Provincetown, there was really no impetus (or significant capital) to diversify fishing strategies. Those coming into the fishery took up with what was available, and had little motivation to change.

The major problem in the port of Provincetown is unemployment and underemployment of former fishermen. Day-to-day survival is a struggle as fishermen and their families cope with declining income (or no income) and increasing uncertainty because of fishery restrictions. However, given the fishing and fleet conditions, restrictions on days at sea are less of a problem now than just getting out to sea at all. One possible avenue for fishermen to improve their economic condition is through the retraining programs being offered by the Fishing Family

Assistance Center. In Provincetown, the primary barriers to the success of the program are as follows:

- Provincetown fishermen do not see the centers as an opportunity to seek a better life, but as a program designed to take away their opportunity to earn a living fishing;
- the program was not designed with any understanding of local fishing culture and life values;
- ethnic and linguistic barriers exist that limit the participation of male Portuguese fishermen; and
- the opportunities for retraining are limited by economic opportunities in the region.

5.3.1.2 Gloucester, Massachusetts²

Founded in 1623, Gloucester has been a fishing port for the last 372 years. Although commercial fishing is still a primary industry (Gloucester was ranked second in 1995 in pounds landed on the eastern seaboard), light industry and the service sector are gaining in importance, and foreign imports have taken the place of domestic landings for some local processors. The community's largest fishery employer, Gorton's of Gloucester, processes and markets imported fish only and has not purchased a pound of locally caught fish in 30 years. This is because foreign labor and harvesting costs are lower, there are fewer restrictions, and the supply is, therefore, more predictable. Most processors have looked to foreign suppliers to keep their businesses going. Their interests are not as linked to the fate of the local fishing fleet as in the past.

The Gloucester commercial fishing fleet can be divided into four major gear groups. These are mobile gear (trawlers) and three categories of fixed gear (gillnets, longlines, and lobster pots). Other types of commercial fishing include jigging, harpooning, diving for sea urchins, and various types of trapping. Other uses of marine resources include recreational and sportfishing, and seasonal whale watching tours. Groundfishing with mobile gear remains the predominant fishing strategy in Gloucester.

The traditional fishing fleet of Gloucester have been ground trawlers, using stern or (rarely) side trawling techniques. Most of the fleet land their fish in Gloucester, although larger vessels may land squid, whiting, and other species in Portland or Rhode Island. There has been a decline in landings due to restrictions on days at sea and area closures. The fleet in Gloucester is highly concentrated inside an extremely sheltered harbor, and affordable docking space is at a premium. With the introduction of ice plants in the late 1800s, iced fish could be marketed throughout the eastern seaboard, establishing Gloucester as one of the primary seafood ports in the nation. The existing processing and cold storage facilities have a combined capacity of nearly 95 million pounds. Replacement of this infrastructure would be prohibitively expensive if the fishery were allowed to collapse. The modern state dock, built in 1982, was recently renovated with funds from the Economic Development Administration. There are deep draft berths for 64 commercial vessels at the state fish pier. However, the high docking fees and insurance requirements have kept most commercial vessels off this dock. Scattered among the working vessels are charter

² Excerpted from Amendment 12; cited to: 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; McCay, Bonnie J., B. Blinkoff, R. Blinkoff, and D. Bart. 1993. Report, Part 2, Phase I, Fishery Impact Management Project, a Report to the Mid-Atlantic Fishery Management Council.

boat facilities and whale watching firms that have been taking over spaces vacated by a dwindling groundfish fleet. Space limitations mean most of the vessels must have some arrangement with a processing facility or dealer in order to tie up their vessels.

In 1997, more than 1,775,000 pounds of whiting, almost double that of any other port in Massachusetts, were landed in Gloucester. Eighty eight vessels landed whiting in Gloucester during 1997, three times as many vessels as in other Massachusetts ports. Its landings have made Gloucester the second largest whiting port between 1980 and 1996 (behind Point Judith). Only one vessel in the Cultivator Shoal Whiting Fishery claims Gloucester as its principal port, but it is likely that several vessels based in Gloucester participate in the Cultivator Shoal Whiting Fishery. Four vessels that participated in the Experimental Whiting Separator Trawl Fishery during 1996 claimed Gloucester as their principal port, but none did in 1997. Quite a few vessels out of Gloucester have either participated in the Raised Footrope Trawl Experimental Fishery or have expressed interest in doing so.

The decline in the economic viability of the larger fishing vessels has put incredible pressure on the ability of fishermen in Gloucester to make a living. As vessel size increases, there is a considerable increase in operating expenditures, such that the average total expenditures for a larger vessel operating with a normal complement of five crew is approximately six times that of the smaller day boats. Increased costs come from greater number of days at sea, which translates into higher labor, fuel, ice, and food expenditures. Risk is thus considerably greater for larger than smaller vessels.

The lack of security from fishing has steadily increased as the management regime becomes more restrictive, fish of certain target species are scarcer, and operating costs continue to rise. One outcome of this has been reduction in crew size to reduce labor costs. There has been a significant drop in the number of crew employed on the vessels. Some larger vessels are now operating inshore with skeleton crews of just two (e.g., a father-son operation). They cannot afford to work with a larger crew, nor can they afford to fish offshore for any extended periods of time.

Gloucester Display Auction³

The history of fish marketing has been characterized by an unbalanced economic relationship that favors the buyers. Taking advantage of fishermen has not been not uncommon, yet recently the balance has shifted from dealers to favor fishermen to a greater degree, largely because of the increased competition for the dwindling fleet of suppliers. As the number of markets declined, the options available to the remaining suppliers became more uncertain as there was a decrease in the flexibility of the market due to reduced competition for product.

One remedy to improve the equity of price and market information has come in the form of the fish auction based on a model of the Portland Fish Exchange. The Gloucester Seafood Display Auction opened for business on November 29, 1997. It is privately operated by Star Fisheries of Gloucester, but Star Fisheries does not bid or purchase any fish through the Auction. Sellers and buyers equally pay a fee of .05 cents per pound to the auction for all fish bought and sold. Fish

³ This section was developed through personal communication with David Bergeron, Massachusetts Fishermen's Partnership and Gloucester Fishermen's Wives Association.

are unloaded and inspected by prospective buyers before the daily auction at 6:00 a.m. Vessels from Portland, Cape Cod, and beyond land at the Auction. Between 1 and 2 millions pounds of fish has been traded each month since it opened at the Gloucester Display Auction.

The Gloucester Display Auction has provided an opportunity to add value to local product and expand the market share. Quality fish sold at higher prices helps local fishers get into new markets. It is anticipated that, over time, the Gloucester Display Auction will create many shore-based jobs for displaced fishermen (crew and owner-operators). Initially, 25 jobs were anticipated from the market, with predictions of up to 100 in early development to 300 in later development. Job qualification for the market fits the profile of displaced/retired fishers. Individuals are needed who have hands-on familiarity with fish, and who can also sort and grade fish for quality. Fishermen can do this without any significant retraining activities. Most would not have to speak English or have any other skills that they do not already have from working in the fishery.

Fishing vessel owners consistently give good reviews of the auction operation. Fishermen report that ex-vessel prices have substantially increased, sometimes by 2 to 3 times the prices paid before the auction opened.

Even with the development of the Gloucester Display Auction, infrastructures related to fishing have faced a severe decline in recent years. Repair shops and equipment once regularly available now must be sought in New Bedford, Boston, or elsewhere. Overall, the ability to shift to other species and gear is limited by the capital investment in the fishing operation. The larger vessels characterizing the Gloucester fleet are often saddled with debt, tied to home mortgages, and too specialized to rig with other gears without further debt. This ability is also limited by the financial ties of the crew to the vessel. A family (or families) that have their homes mortgaged to a vessel cannot easily abandon that vessel to pursue another option.

In addition to adjusting to change within commercial fishing, the prospect exists for fishermen to move into nonfishing occupations or marine related jobs either for short-term, casual employment during down turns in groundfishing or as a viable career alternative. Retraining centers established throughout the Northeast, administered by state Departments of Labor, have been operating on the assumption that adjustment to the current crisis would include job training. With 95 enrolled, the retraining program has been as successful as possible in Gloucester due to strong leadership in the center and the pairing of center activities with the Gloucester Fishermen's Wives Association (GFWA), but the program suffers from several problems nevertheless. The GFWA is an organization with 26 years working experience with the fishing community. Despite the best efforts of the GFWA leadership in assisting the retraining process, there are still difficult problems to overcome. The major problem, of course, is that people do not want to give up fishing as a way of life, which does not compare to the job opportunities presented by the retraining centers.

Besides experiencing a reduction in fishing fleet and supporting infrastructure of the past twenty years, the contemporary fishing industry of Gloucester has gone through many changes. These are due to technological innovation, competition, and recent low abundance of certain fishing stocks along with increasing competition among a diversity of stakeholders. Reductions in days

at sea, closure of large areas, and decline in important groundfish stocks have reduced the viability of the groundfishing fleet. Nevertheless, local fishing and related businesses still employ an estimated 40% of Gloucester's population. Businesses that directly support the local industry are small and locally owned and operated.

Social Factors

Gloucester's historical and cultural dependence on fishing is revealed in the art and architecture of the community, both religious and secular. Committing resources for the creation of occupationally specific art and architecture shows a deep community dependence on that occupation. Examples include Our Lady of Good Voyage Church, the Gloucester fisherman statue, and the entrance mural of St. Ann's Church. A recent event of significance is the dedication of the plans for the statue of the fisherman's wife. The commission for this community symbol went to a local artist, and a recent ceremony commemorated the commissioning of the statue, which should be completed in three to five years.

Fishing life symbols do not occur in isolation. They are integral parts of social rituals. Rituals are repetitive seasonal actions that reveal the most deeply felt values of families and households (Turner 1967). Rituals of saint worship, of the blessing of the fleet, and seafood festivals are integrated with the secular and religious symbols that are a part of the cultural landscape of the community. Symbols and associated rituals are also representative of persisting social arrangements. Such arrangements include working crews, family networks, social clubs, fisher-processor credit relationships, and fishing associations.

Many of the residents of Gloucester are descendants from Nova Scotia who came to Cape Ann in the last century. The traditional fishing peoples have included Canadian, Scottish, Yankee, Portuguese, with most of the present fishing population of Italian descent. A large number of these fishers have come from fishing ports in Sicily. They came over here "seeking a better life." Migration was based on social networks and kinship. Once a family was established with one or two individuals, others would be urged to join them.

Just under 40% of the 27,000 residents of Gloucester are Italian Americans, having arrived in two primary waves of immigration. The traditional fishing family structure consisted of extended kinship networks of fathers, brothers and cousins who worked together on draggers. While men were responsible for fishing and earning money, women took care of the household, onshore finances and child care. This arrangement provided a very stable lifestyle that has been severely strained by the fishing crisis.

Cultural and social distinctions in Gloucester divide fishing families from the rest of the community, making the fishing community to some extent insular. Ethnically, most ground fishers are Sicilian/Italian, and there remain strong connections with Italian communities of origin. The fishing families are aligned to a local church and have been a largely closed population since the founding of the community in 1623. The Catholic parish was founded in 1849 and Catholic fisher arrived shortly after. Protestant fishers declined in numbers over the 19th century while Roman Catholics now comprise the great majority. These indicators of social and cultural distinctiveness--of insularity--have made the fishing community less open to outside intervention in the form of government regulation than fishers who are less distinct from non-

fishers such as fishery biologists and managers. Thus, religious as well as traditional values make the community more resistant to change than what would be designated the Yankee ports of the Cape (Chatham) and Maine. While fishers are not encouraging their sons to enter the fishery, they resist leaving it themselves. Unfortunately, several developments external to and within the industry, noted above and below, have made staying in the industry difficult.

As fishing becomes more difficult, there is an associated decline in job satisfaction, which may lead to mental health problems. The Department of Health, Education and Welfare (now Health and Human Services) noted in a 1973 summary of research by the Survey Research Center at the University of Michigan that the absence of job satisfaction can cause problems such as psychosomatic illnesses, anxiety, low self esteem, worry, tension, and impaired interpersonal relationships. Increased stress due to the crisis was noted by every key respondent interviewed in Gloucester, and resulted in occasional emotional expressions of stress during the interview. Stress has been attributed by key respondents to strong sentiments of uncertainty and helplessness, particularly since Amendment 5. An M.D. in Gloucester with decades of history treating local fisher families, processors, and managers noted a dramatic increase in stress related illness and disease over the last three years. This includes gastrointestinal illnesses, stroke, heart attacks, and hypertension. He attributed this directly to the impact of regulations and related changes. Heart disease and other illnesses which impact a person's social relationships have also been related to work dissatisfaction.

5.3.2 Social Impacts of the Proposed Management Action

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.

The social impacts of the action proposed in this framework adjustment are likely to be positive because establishing a seasonal, small mesh fishing opportunity in Cape Cod Bay should mitigate some of the negative social impacts of the Framework 33 inshore area closures.

5.3.2.1 General Discussion

In general, two categories of fishing vessels are most affected by the Framework 33 area closures: (1) vessels from fishing communities directly bordering the area closures, and (2) vessels from other fishing communities that have traditionally accessed the closed areas to fish. Affected vessels from both categories include not only those vessels that fish for Gulf of Maine or Georges Bank cod, but also those vessels that fish for other species like flatfish or scallops.

The vessels in Category (1) are the most directly affected by the inshore and “rolling” area closures because the area closures border on the coastlines of their communities and, in some cases, extend up to 80 or 100 miles offshore for a period of time. For the Gulf of Maine, these vessels are primarily based in the communities of Gloucester, Newburyport, Provincetown, and

Boston, Massachusetts as well as most communities along the New Hampshire coastline. For Georges Bank, these vessels are primarily based in communities like New Bedford (MA) and communities along outer Cape Cod (primarily Chatham and Harwichport), Massachusetts.

Within this category of affected vessels, smaller vessels (less than 51 GRT) are at a greater disadvantage to adjust to the regulations because of their inability to travel beyond the area closures to fish. Medium and larger-sized vessels are undoubtedly constrained and inconvenienced, but the physical characteristics of these vessels may allow them to sustain some level of offshore fishing activity during the time period of closure. A majority of the vessels in question, especially those from Gloucester, Provincetown, Chatham, Harwichport, and communities in new Hampshire, are smaller-sized vessels and may be forced to seek alternatives to fishing for multispecies due to the closures. This held true for the inshore area closures implemented through Frameworks 25, 26, and 27. The communities in which these vessels conduct their fishing activities are likely to demonstrate the greatest short-term social impacts resulting from the Framework 33 area closures.

The second category of affected vessels is comprised of vessels that have accessed the closed areas to fish for a variety of species and are now facing closure of these fishing grounds. Although some of the affected vessels in this category include those from fishing communities bordering the area closures (see Category (1) above), others may come from communities in Maine and other New England and Mid-Atlantic states. These vessels, while inconvenienced and limited in terms of their flexibility, may still have the opportunity to fish in other parts of the Gulf of Maine as well as in other regions. Most vessels that have the capability to travel from their home communities to the closure areas should be able to travel to alternative areas to fish. Thus, affected vessels in Category (2) but not in Category (1) are more likely to shift their effort into other areas (and perhaps onto other species) and should have the opportunity to maintain an overall level of fishing closer to their historic levels. The communities in which these vessels conduct their fishing activities (Portland, Maine, for example) are less likely to experience short-term social impacts resulting from the Framework 33 closures.

There are other sectors of the groundfish industry that are likely to be affected by the Framework 33 area closures. Shoreside facilities that supply bait, ice, fishing gear, and other supplies may suffer from a decrease in fishing activity in their communities, especially if vessels in their communities are unable to access fishery resources for a period of time. The greater dependence on fishing for groundfish in communities like Gloucester could ultimately lead to a greater potential for community economic dislocation resulting from the management measures. According to recent information from the U.S. Census Bureau, Essex County (Gloucester, MA) employs close to 6,000 persons in fishing related businesses (processing, seafood markets, vessel repair, etc.). Support infrastructure in communities such as Gloucester is estimated to be at a premium, and very little additional infrastructure could be lost without having a major impact in the ability of the fleets in these communities to operate (Aguirre International, 1996).

Loss of income, changes in the structure of the fishery, and displacement from the fishery are likely to result in the short-term from the area closures implemented through Framework 33. The need for financial assistance, when combined with the perception of lowered social status resulting from decreased income, can often result in lowered self-esteem and negative impacts on

job satisfaction. These social impacts are often consequences of any management plan directed at reducing exploitation. They also tend to manifest themselves in alternatives that include either large-scale, long-term area closures or nearshore area closures that preclude opportunities for smaller vessels.

Inshore closures may require that vessels find new fishing grounds and/or travel farther to fish. The potential need to spend more time at sea as a result of Framework 33 area closures may produce negative short-term social consequences. In fact, length of time at sea has been cited as an important characteristic affecting job satisfaction because of the amount of time fishermen are required to spend away from their families and communities and because of the potential for owners of smaller vessels to compromise their own safety to maintain income during the closure time (Pollnac and Littlefield, 1983).

Negative social impacts of management actions usually result from the following:

1. Decreases in income
2. Changes in the structure of the fishery
3. Displacement from the fishery
4. Negative impacts on job satisfaction levels resulting from 1, 2, and 3 above
5. Perceptions of the rules as “bad” or “unfair” in terms of their potential impacts (Pollnac and Littlefield, 1983).

The impacts of the action proposed in this framework adjustment will be considered in the context of the factors listed above.

5.3.2.2 Gloucester, Massachusetts

Since 1996, the experimental raised footrope trawl fishery has provided a seasonal opportunity for many vessels fishing out of Gloucester. In 1997, 13 vessels from Gloucester were issued permits to participate in the experimental fishery; 11 of these vessels made a total of 232 trips during the 1997 season. Landings from the raised footrope trawl fishery in Gloucester totaled more than 1 million pounds and were valued at almost \$400,000 in 1997. In 1998, 23 vessels from Gloucester were issued permits to participate in the experimental fishery; 19 of these vessels made a total of 246 trips during the 1998 season. Landings from the raised footrope trawl fishery in Gloucester again totaled more than 1 million pounds and were valued at almost \$550,000 in 1998. In 1999, eight vessels from Gloucester were issued permits to participate in the experimental fishery; six of these vessels made a total of 132 trips during the 1999 season. Landings from the raised footrope trawl fishery in Gloucester totaled more than 1,130,000 pounds and were valued at almost \$600,000 in 1999.

Framework 33 includes the same area closures contained in Frameworks 27 and 31, plus some additional closures if 50% of the target TAC for Gulf of Maine cod is landed by July 31, 2000. It also extends the duration of the western Gulf of Maine area closure through April 30, 2002. As previously noted, vessels from Gloucester, especially smaller vessels that fish inshore, are likely to be impacted by most of the Framework 33 area closures. This is because the area closures either extend inshore to the Gloucester coastline or prohibit vessels from fishing (for groundfish or other species) in areas where they have traditionally fished. The majority of the Framework 33 impact will result from the closures that extend inshore to the Gloucester coastline during the months of April and May. From September – November, the time proposed for the raised

footrope trawl fishery, areas south and east of Gloucester are closed, but not areas directly adjacent to Gloucester's coastline.

5.3.2.3 Provincetown, Massachusetts

Historically, before the establishment of Regulated Large Mesh Areas, Provincetown's fleet was extremely active in small mesh whiting fisheries in the Gulf of Maine. Since that time, the experimental raised footrope trawl fishery has provided an important seasonal opportunity for many vessels fishing out of Provincetown. This fishery has been referred to as Provincetown's "bread and butter" and perhaps the only fishing opportunity for many Provincetown vessels during the fall and winter seasons. In 1997, 17 trawlers from Provincetown were issued permits to participate in the experimental fishery; all 17 of these vessels participated in the fishery and made a total of 374 trips during the 1997 season. Landings from the raised footrope trawl fishery in Provincetown totaled more than 1,130,000 pounds and were valued at almost \$350,000 in 1997. In 1998, 17 vessels from Provincetown were issued permits to participate in the experimental fishery; 16 of these vessels made a total of 170 trips during the 1998 season. Landings from the raised footrope trawl fishery in Provincetown totaled more than 650,000 pounds and were valued at \$331,000 in 1998. In 1999, 17 vessels from Provincetown were issued permits to participate in the experimental fishery; all 17 vessels participated in the fishery and made a total of 300 trips during the 1999 season. Landings from the raised footrope trawl fishery in Provincetown totaled about 1,800,000 pounds and were valued at almost \$1,300,000 in 1999.

Framework 33 includes the same area closures contained in Frameworks 27 and 31, plus some additional closures if 50% of the target TAC for Gulf of Maine cod is landed by July 31, 2000. It also extends the duration of the western Gulf of Maine area closure through April 30, 2002. Vessels from Provincetown are likely to be substantially impacted by the Framework 33 area closures, especially the Gulf of Maine area closures. Blocks 124 and 125, directly adjacent to and surrounding Provincetown, are scheduled to be closed for five months: October, November, February, March, and April. If 50% of the Target TAC for Gulf of Maine cod is landed by July 31, 2000, then Blocks 124 and 125 will also be closed during the month of January. One half of the year could be lost for vessels fishing out of Provincetown because most of them are clearly incapable of transiting beyond the closures to fish due to their size, age, and condition.

5.3.2.4 Impact of Options to Adjust the October/November Closure Provisions

The Council considered two options to allow the raised footrope trawl fishery to occur during the months of October and November when Blocks 124 and 125 are scheduled to be closed to multispecies fishing according to Framework 33 provisions. Option 1, the proposed action, exempts participants in the raised footrope trawl fishery from the closure of Blocks 124 and 125 during October and November *only* in the area proposed for the raised footrope trawl to occur. Option 2, the rejected alternative, would have moved the boundary of the October-November closure (Blocks 124 and 125) so as not to include the raised footrope trawl fishery area. Only the top 1/2 of Blocks 124 and 125 would have been closed during October and November under Option 2.

Option 2 would have been more likely to mitigate the negative social impacts of the Framework 33 measures to a greater degree than the proposed action. This is because Option 2 would have

provided vessels not only with an inshore small mesh fishing opportunity to target whiting and red hake, but also with an inshore opportunity to target large mesh regulated species. While the majority of positive impacts resulting from the proposed action are likely to be experienced by vessels in Provincetown and Gloucester (those vessels with a history in small mesh fisheries), the impacts of Option 2 would have been experienced by those vessels as well as vessels fishing from communities like Scituate and Plymouth. Opening the southern half of Blocks 124 and 125 would have allowed vessels to target regulated species in the area during the months of October and November. The vessels that would access these areas to fish for regulated species during this time are not likely to be the same vessels that would fish in the raised footrope trawl fishery. They are more likely to be large mesh vessels with no history in small mesh fisheries, vessels that would benefit from fishing for groundfish in nearshore areas that would otherwise be closed.

While the short-term impacts of Option 2 would have been more positive for a greater number of vessels located in more communities throughout the region, the long-term impacts of Option 2 could have been more negative to the extent that Option 2 compromises groundfish stock rebuilding. The Groundfish PDT did not support Option 2 because it could weaken the groundfish stock rebuilding program and consequently necessitate further restrictions to achieve conservation equivalency for opening the southern half of Blocks 124 and 125 during the months of October and November. Option 2 therefore contained more risk as it may have resulted in either more negative social impacts or a delay in the stream of positive impacts resulting from rebuilt stocks and less restrictive regulations in the long term. These long-term concerns could not be mitigated by the short-term positive impacts of this framework action on vessels in the affected fishing communities.

5.3.2.5 Summary and Conclusions

The proposed action is unlikely to result in any negative social impacts in coastal communities like Gloucester and Provincetown and is more likely to mitigate the negative social impacts resulting from current groundfish regulations (primarily the area closures implemented through Framework 33) in the Gulf of Maine. To the extent that the measures contained in this framework adjustment increase or maximize flexibility for the small mesh fishing fleet, short-term social impacts will be positive. Flexibility can produce several positive effects resulting primarily from an increased ability to plan fishing activities and make business decisions.

The proposed action is not likely to result in decreased income for the fleet. Rather, it is likely to provide vessels with an opportunity to sustain an income during a time when there are very few fishing opportunities, especially for vessels in Provincetown. In addition, it is unlikely to result in either changes in the structure of the fishery or displacement from the fishery. In turn, impacts on job satisfaction will be positive, as fishermen will have an opportunity to fish during months when they would not otherwise.

6.0 RELATIONSHIP TO APPLICABLE LAW

6.1 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (MSFCMA)

6.1.1 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, implemented through Amendment 12, are significant components of the Council's strategy to end overfishing and rebuild the northern and southern stocks of whiting (particularly the southern stock, as the northern stock is not considered "overfished"). The proposed action is intended to allow continuation of an historic small mesh fishery while minimizing discards of large mesh regulated species by requiring use of the raised footrope trawl.

Framework 35 measures, as approved, clearly will contribute toward achievement of the whiting rebuilding objectives (including the objective to achieve optimum yield from the fishery) while not adversely impacting the rebuilding programs of large mesh regulated species, in particular Gulf of Maine cod. The biological impacts of this framework adjustment on stocks of whiting, red hake, spiny dogfish, and large mesh regulated species are summarized in Section 5.1 of this document.

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

The analyses of measures proposed in this framework adjustment are based on the scientific information gleaned from sea sampling of the raised footrope trawl experimental fishery from 1996-1999 (more emphasis was placed on the 1999 data because it was the most extensive). Section 5.1 and Appendix II of this Framework 35 document identify the data that the Council used to describe the raised footrope trawl whiting fishery and to evaluate the potential impacts of the proposed measures on this and other fisheries. Sea sampling data from this fishery are perhaps the most comprehensive and extensive of all experimental and exempted fisheries in the northeast region. The data considerations specific to Framework 35 are discussed in Section 5.1 of this document.

(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 management adjustments proposed in this framework do 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 federally 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 raised footrope trawl whiting fishery, allow the fishery to occur during the October/November rolling closure, 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.

The Council first accounted for variations in fisheries, fishery resources, and catches by developing two options in this framework to address the October/November “rolling closure.” The approach that was ultimately selected by the Council (the proposed action) maximizes opportunities in the fishery and creates flexibility for the small mesh fleet while not adversely impacting large mesh regulated species, whiting, red hake or spiny dogfish.

The Council developed the modifications proposed in this framework adjustment in response to the impact of a two month “rolling groundfish closure” on the upper Cape Cod raised footrope trawl whiting fishery. The proposed action allows continuance of the raised footrope trawl fishery while maintaining the effectiveness of the rolling closure’s protection of large mesh regulated species. The proposed action represents the Council’s attempt to ensure recovery of Gulf of Maine cod and other large mesh regulated species while allowing for variations among fisheries of which raised footrope trawl whiting fishery is a component.

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

The Council considered the potential costs and benefits of two discrete alternatives to achieve the objectives of this framework adjustment. It considered costs to the National Marine Fisheries Service in administering the raised footrope trawl exemption. It considered costs to the industry in terms of compliance costs. The proposed action allows for greater fishing opportunity and

planning flexibility at minimal administration and enforcement costs. Because a portion of this fishery occurs in state waters, DMF is committed to ensuring that federal administration and enforcement costs remain minimal.

(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.

During the development of this framework adjustment, the Council considered the importance of fishery resources to affected fishing communities and wanted to provide those communities with continued access to the small mesh multispecies fishery, but not at the expense of compromising the conservation objectives of large mesh management measures. The proposed action is intended to allow for continuing access to both whiting and other small mesh fishery resources (red hake, for example).

The proposed action will not adversely impact affected fishing communities. In fact, the proposed action allows small mesh fishing to occur while the two month rolling closure adjacent to the communities remains intact. The impacts of the proposed action are likely to be positive for the affected communities by increasing fishing flexibility and opportunities and the associated economic benefits.

(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 continuation of a traditional small mesh whiting fishery. The Council intends for alternatives considered in this framework adjustment to reduce the overall catch and discard of large mesh regulated species in the small mesh whiting fishery in upper Cape Cod Bay. This objective will be achieved by:

- Mandating use of the raised footrope trawl. This trawl reduces bycatch of certain large mesh regulated species and results in cleaner tows, which allow faster deck processing of species, thereby improving the probability of survival of discards. The action proposed in this framework adjustment specifically addresses National Standard 9.
- Seasonal and area restrictions on the raised footrope trawl fishery are designed to minimize cod bycatch within the context of maximizing whiting catch.
- 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 35 promote safety at sea by maximizing the flexibility of fishermen to choose where and how they want to fish. The proposed action increases flexibility for the fishing fleet by allowing vessels the choice of fishing inshore within the October/ November rolling closure with the raised footrope trawl or steaming outside the closure to fish for large mesh groundfish. This may be of particular importance to the aging Provincetown fleet that needs to fish near the protected inshore waters of Cape Cod Bay. The raised footrope trawl fishing area is within an one hour steam of the port of Provincetown. The proposal should therefore have no adverse impacts on safety at sea and may have favorable impacts on safety to the extent that the proposal provides an alternative that allows an opportunity to fish near homeports with aging fleets and/or smaller vessels.

6.1.2 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 3.1 of this document contains a description of the action proposed in this framework adjustment. Section 6.1.1 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;

This Framework 35 document contains a comprehensive description of the whiting raised footrope trawl fishery, including, but not limited to, a brief history of the fishery, historical and recent landings, and revenue information, fishing vessel information, descriptions of the marketing and processing sectors, description of the recreational fishery, and projections of the costs likely to be incurred in management. Much of this information is contained in Sections 1.1 and Appendix II of this framework document. Additional information appears in the annual reports on the experimental raised footrope trawl fishery (1996-1999) and are referenced in this document.

The Environmental Assessment contained in this framework document supplements the information submitted with Amendment 12 to the Multispecies FMP in forming the description

of the fishery. Since this framework adjustment is being submitted so closely to the submission of Amendment 12, no new descriptive information about whiting fisheries is available at this time.

(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 new definitions of overfishing and a description of optimum yield for small mesh multispecies. New overfishing definitions are based on maximum fishing mortality and minimum biomass thresholds. This framework adjustment builds on the Amendment 12 management measures to rebuild overfished 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 promote the harvest of optimum yield from the northern stock of whiting by providing a seasonal small mesh fishing opportunity for vessels fishing in and around the Gulf of Maine.

(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 calling on NMFS to prepare an annual publication of a Stock Assessment and Fishery Evaluation (SAFE) Report, 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 10 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 5.1.5 of this framework document.

(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;

Obtaining updated stock assessment information for all three small mesh multispecies is critical to achieving the objectives of the whiting management 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.

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 will 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 fishing communities. The majority of 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 Committees and 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 revised overfishing definitions for both stocks of whiting, red hake and large mesh regulated species 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 new 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 and Amendment 9. Nothing proposed in this framework adjustment changes these criteria.

(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 raised footrope trawl whiting 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. Information suggests that participation in recreational whiting and red hake fisheries has decreased to very low 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 ending overfishing and rebuilding southern whiting stocks. 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, recently submitted, 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.

The Environmental Assessment contained in this framework document supplements the information submitted with Amendment 12 to the Multispecies FMP in forming the description of the raised footrope trawl fishery. Since this framework adjustment is being submitted so closely to the submission and implementation of Amendment 12, no new descriptive information about whiting fisheries is available at this time.

(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 whiting management measures that apply equally to all sectors of the commercial fishery in Amendment 12. The measures proposed in this framework adjustment also apply equally to all sectors of the commercial fishery. 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.

6.2 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

6.2.1 Environmental Assessment

Section 2.0 of this framework document contains a discussion of the purpose and need for the proposed action. Section 3.0 contains a description of the proposed action and the alternatives that the Council rejected (where applicable). Section 5.0 contains an analysis of the potential biological, economic, and social impacts of the proposed action, including the impacts on other stocks (regulated multispecies, dogfish, and herring).

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.

6.2.2 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 five criteria to be considered are addressed below:

1. *Can the proposed action be reasonably expected to jeopardize the long-term productive capability of any stocks that may be affected by the action?*

The proposed action consists of the relatively minor adjustment of reclassifying an ongoing experimental fishery to an exempted fishery implemented through Framework 35 to the Multispecies FMP. 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 large mesh regulated species, whiting, or red hake stocks.

The majority of the benefits of this framework action result from increased flexibility for the small mesh fishing fleet. The proposed action is not likely to jeopardize the long-term productive capability of any stocks affected by the action, including Gulf of Maine cod, whiting, red hake or any large mesh regulated species. Rather, to the extent that the proposed action discourages a shift of effort from the raised footrope trawl fishery to large mesh regulated species during September 1-November 20 period, the proposed action may prevent increased mortality on large mesh regulated species.

2. *Can the proposed action be reasonably expected to allow substantial damage to the ocean and coastal habitats?*

As discussed in Section 5.1.5 of this framework document, the alternatives and actions proposed in this framework adjustment will not increase any adverse impacts on essential fish habitat (EFH) resulting from fishing activities. The raised footrope trawl gear is designed for minimal contact with the bottom, far less than the heavier traditional groundgear. The Council expects that the proposed action will be neutral relative to causing or allowing substantial damage to ocean and coastal habitats as the fishery has been on going. The proposed action will not have any adverse impacts on the EFH of any managed species relative to the baseline conditions established under Amendments 7, 9, 11 and 12.

According to the EFH assessment (Section 5.1.5.7), the actions proposed in this framework adjustment have no potential adverse effects on the EFH of any species managed by the New England, Mid-Atlantic or South Atlantic Fishery Management Councils. Because there are no potential adverse impacts associated with this action, an EFH consultation and a proposed mitigation plan are not required.

3. *Can the proposed action be reasonably expected to have an adverse impact on public health or safety?*

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. In developing management measures, the Council usually receives extensive comments from affected members of the public regarding the safety implications of various alternatives under consideration. No safety or public health issues were identified during the development of the management measures proposed in this framework adjustment.

4. *Can the proposed action be reasonably expected to have an adverse impact on endangered or threatened species or a marine mammal population?*

The management measures proposed in this framework adjustment are not expected to have an adverse impact on any endangered or threatened species or marine mammals. See Section 5.1.4 of this framework document for a discussion of the impacts of the proposed action on threatened and endangered species and marine mammals.

5. *Can the proposed action be reasonably expected to result in cumulative adverse effects that could have a substantial effect of the target resource species or any related stocks that may be affected?*

As previously discussed, the proposed action consists of a relatively minor adjustment to the whiting and multispecies management programs implemented through Amendment 12 and Amendment 9 to the Multispecies FMP. 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, red hake or large mesh regulated groundfish species.

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

6.3 REGULATORY IMPACT REVIEW

This section provides the information necessary to address the requirements of Executive Order 12866 and the Regulatory Flexibility Act.

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 Executive Order 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 Executive Order 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. This RIR summarizes the effects of the proposed action and other alternatives considered in this framework adjustment. This framework document contains all of the elements of the RIR/RFA, and the relevant sections are referenced.

6.3.1 Executive Order 12866

Executive Order 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; or
- (3) novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order.

The proposed action, consisting of the establishment of a seasonal small mesh, raised footrope trawl whiting fishery in Upper Cape Cod Bay, is not likely to be a “significant regulatory action” as defined above. The economic impacts of the proposed action (Section 5.2) are positive for participating vessels. No adverse impacts are expected from the proposed action. When compared to the “status quo” alternative (not establishing this fishery), the proposed action is likely to generate approximately \$1.25 million in revenues for vessels fishing primarily out of the ports of Gloucester and Provincetown, Massachusetts (based on 1997-1999 averages). These revenues will be achieved during a time when these vessels have little to no other fishing opportunities due to surrounding groundfish area closures.

6.3.2 Regulatory Flexibility Act (RFA)

The purpose of the 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.”

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. Since this framework action will be submitted as a *final rule*, not subject to further notice and comment under the APA, the RFA does not apply. However, 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. The objectives of this framework adjustment are specified in Section 2.2. The proposed action is described in Section 3.1, and alternatives to the proposed action are described in Section 3.2. The economic analysis of the proposed action is contained in Section 5.2 of this document. The economic analysis focuses on the effects of the proposed action (establishing the raised footrope trawl fishery) versus the effects of the “status quo” (not establishing the fishery). When compared to the “status quo” alternative, the proposed action is likely to generate approximately \$1.25 million in revenues for vessels fishing primarily out of the ports of Gloucester and Provincetown, Massachusetts (based on 1997-1999 averages). These revenues will be achieved during a time when these vessels have little to no other fishing opportunities due to surrounding groundfish area closures.

As discussed in Section 3.0, the “range” of alternatives for the proposed action were considered during four years of experimental fishing (1996-1999), and the specifications proposed in this framework document reflect the best alternatives based on the data collected through the experimental fisheries. Essentially, there was no need for the Council to consider a range of alternatives for season, area, etc. because the experimental data supported one alternative: the proposed action.

The Council did, however, consider two alternatives for allowing the raised footrope trawl fishery to occur during a time and in an area proposed to be closed to all gear capable of catching multispecies (the October/November closure of Blocks 124 and 125). One alternative, which developed into the proposed action, grants participants in the raised footrope trawl fishery an exemption to the October/November closure only to fish for small mesh multispecies in the raised footrope trawl fishery area (see Section 3.1.4). The rejected alternative (“Option 2”) would have moved the boundary of the closed area so as not to include the proposed raised footrope trawl fishery area (see Section 3.2). This alternative would have resulted in additional positive short-term economic benefits as it would have provided an opportunity for groundfish vessels to fish with large mesh for regulated species in an area previously scheduled to be closed. The revenues generated from fishing for regulated multispecies in the southern half of Blocks 124 and 125 during October and November would have been in addition to the revenues generated by the raised footrope trawl fishery itself. However, while the short-term economic impacts of the rejected alternative would have been more positive for a larger number of vessels, the long-term economic impacts could have been more negative if the rejected alternative

resulted in a negative impact on multispecies stock rebuilding and necessitated more restrictive management measures in the future.

For further discussion of the economic impacts of the proposed action relative to the status quo, see Section 5.2 of this framework document.

6.4 ENDANGERED SPECIES ACT (ESA)

Section 7 of the Endangered Species Act requires federal agencies conducting, authorizing, or funding activities that may affect threatened or endangered marine species to ensure that those effects do not jeopardize the continued existence of listed species. The Council has concluded that small mesh multispecies fisheries, as described in Amendment 12 to the Northeast Multispecies FMP, may affect several listed species, but are not likely to jeopardize their continued existence. See Section E.7.2.4 of the Amendment 12 document for a discussion of the impacts on ESA-listed species. See Section 5.1.4 of this framework document for a discussion of the impacts of the proposed action.

6.5 MARINE MAMMAL PROTECTION ACT (MMPA)

The New England Fishery Management Council has reviewed the impacts of the Framework 35 measures on marine mammals and concludes that this proposed action is 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 discussion, see Section 5.1.4 of this framework document and Section E.7.2.4 of the Amendment 12 document.

6.6 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.

6.7 PAPERWORK REDUCTION ACT (PRA)

Analyses required by the Paperwork Reduction Act will be submitted under separate cover. Copies are available at the Council office.

7.0 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.

Amendments 5, 7, 9, 10, and 12 to the Northeast Multispecies Fishery Management Plan (NEFMC).

McCay, Bonnie J., B. Blinkoff, R. Blinkoff, and D. Bart. 1993. *Report, Part 2, Phase I, Fishery Impact Management Project*, a Report to the Mid-Atlantic Fishery Management Council.

McKiernan et al. 1997, 1998, 1999, 2000 (2000 pending). *Southern Gulf of Maine Raised Footrope Trawl Experimental Whiting Fishery*, Reports on 1996-1999 Experimental Fisheries. Commonwealth of Massachusetts, Division of Marine Fisheries.

1999 Multispecies Monitoring Committee Report (NEFMC).

Pollnac, Richard B. and Littlefield, S. J. 1983. Sociocultural Aspects of Fisheries Management. *Ocean Development and International Law Journal*, 12:3-4, p. 209-246.