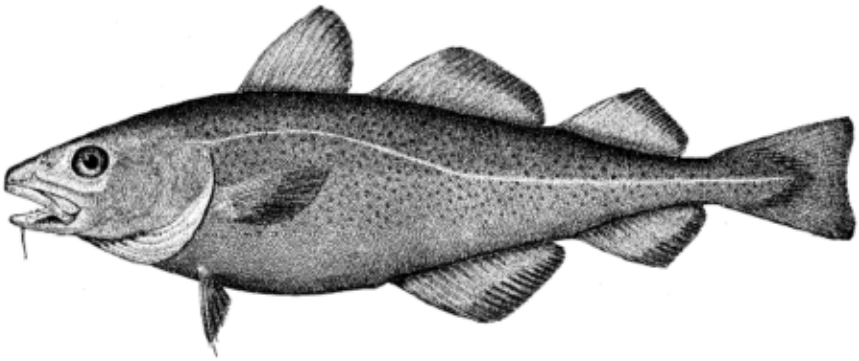
Northeast Multispecies Fishery Management Plan

Emergency Action to Implement Measures to Reduce Overfishing in the Northeast Multispecies Fishery Complex



Environmental Assessment

Regulatory Impact Review
Initial Regulatory Flexibility Analysis

Prepared by the
National Marine Fisheries Service
Northeast Regional Office
One Blackburn Drive
Gloucester, MA 01930-2298

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1.0 Executive Summary

The Secretary of Commerce (Secretary) finds that emergency action is necessary to comply with the fish stock rebuilding requirements of the Northeast (NE) Multispecies Fishery Management Plan (FMP) and the Magnuson-Stevens Fishery Conservation and Management Act. In addition, this action would enable timely continuation of specialized fishery programs designed to mitigate negative economic impacts of the current regulations.

Amendment 13 to the FMP established a process whereby the NE multispecies complex is routinely evaluated and necessary changes to management measures are made through biennial adjustments. The latest stock assessment, the Groundfish Assessment Review Meeting (GARM II) occurred in August, 2005, and updated estimates of fishing mortality (F) and stock biomass for calendar year 2004. According to the information from GARM II, and estimates of the 2005 calendar year F, despite the restrictive management measures implemented under Amendment 13, additional management measures are necessary to reduce F on six stocks in order to meet the F objectives of the rebuilding program implemented by Amendment 13. Based upon this information, the New England Fishery Management Council (Council) is developing Framework Adjustment (FW) 42 in order to reduce groundfish F. In addition, FW 42 will consider renewal of the Day-at-Sea (DAS) Leasing Program and the Regular B DAS Pilot Program, for the 2006 fishing year. The Regular B DAS Pilot Program expired on October 31, 2005, and the DAS Leasing Program will expire on April 30, 2006.

The Council's goal was to develop FW 42 in time for the National Marine Fisheries Service (NMFS) to approve and implement the framework adjustment on May 1, 2006, the start of the 2006 fishing year, consistent with the Amendment 13 biennial adjustment schedule. In addition, implementation of FW 42 on May 1, 2006, enables renewal of the DAS Leasing Program and the Regular B DAS Pilot Program in time for the start of the 2006 fishing year, as both programs expire prior to May 1, 2006. However, at its November 15-17, 2005 meeting, the Council announced that it would not be able to complete FW 42 in time to implement measures by May 1, 2006. Based upon the current status of the analysis and the Council's schedule, the implementation of FW 42, if approved by NMFS, would occur in August 2006, at the earliest. Therefore, due to the recent and unforeseen Council announcement that FW 42 would be delayed, the need to reduce F on six stocks by the start of the 2006 fishing year, and in order to continue the two specialized programs, which were designed to provide economic opportunity and mitigate impacts of current regulations, emergency action has been developed.

This emergency action proposes the following measures to reduce F on the commercial sector:

- Differential DAS counting for Category A DAS used outside of the U.S./Canada Management Area (1.4 DAS charged for each Category A DAS fished);
- A reduction of the GOM cod trip limit to 600 lb/DAS, up to 4,000 lb/trip;
- A reduction of the Cape Cod (CC)/GOM and Southern New England (SNE)/Mid-Atlantic (MA) yellowtail flounder trip limit, as follows: 500 lb per DAS, up to 2,000 lb per trip during July, August, September, December,

January, February, March, and April; and 250 lb per trip during May, June, October, and November;

- A GB yellowtail flounder trip limit of 10,000 lb/trip;
- A GB winter flounder trip limit of 5,000 lb/trip;
- A white hake trip limit of 1,000 lb/DAS, up to 10,000 lb/trip;
- A delayed start date of August 1 for the Eastern U.S./Canada Haddock Special Access Program;
- A provision to allow vessels to fish inside and outside of the Eastern U.S./Canada Area on the same trip;
- A modified Regular B DAS Program, restricted to the U.S./Canada Management Area;
- The continuation of the DAS Leasing Program;
- GOM cod prohibition for party/charter and private recreational vessels from November 1 – March 31; and
- An increase in the size limit for GOM cod to 24 inches for party/charter and private recreational vessels.

These measures are in addition to the default DAS reduction implemented by Amendment 13. The default DAS reduction modifies the ratio of Category A/B DAS from 60:40 to 55:45.

Under this emergency action, all NE multispecies Category A DAS used by a vessel issued a limited access NE multispecies DAS permit outside of the U.S./Canada Area would be charged at a rate of 1.4 to 1. The GOM cod trip limit would be reduced to 600 lb per DAS, up to 4,000 lb per trip; the CC/GOM and SNE/MA yellowtail flounder trip limits would be revised to 500 lb per DAS, up to 2,000 lb per trip during July, August, September, December, January, February, March, and April and 250 lb per trip during May, June, October, and November; and a GB yellowtail flounder trip limit of 10,000 lb per trip, a GB winter flounder trip limit of 5,000 lb per trip, and a white hake possession limit of 1,000 lb/DAS, up to 10,000 lb/trip would be implemented. The Regular B DAS Pilot Program would be renewed for the duration of this Secretarial action, but the geographic scope of the Regular B DAS Pilot Program would be reduced to the U.S./Canada Management Area on GB. Additional changes to the program would be made to further reduce the risk associated with the program (risk of undermining the status of stocks of concern) as follows: The number of DAS available for use in the first quarter would be reduced from 1,000 to 500; and two new incidental catch TACs and trip limits defined (for GB yellowtail flounder and winter flounder). Lastly, trawl vessels participating in the Regular B DAS Program would be required to use a haddock separator trawl with performance requirements.

Fishing mortality reductions necessary for GOM cod would be borne by both the commercial and recreational sectors. Private recreational vessels or vessels fishing under the charter/party regulations of the FMP would be prohibited from possessing or retaining any cod from the GOM Regulated Mesh Area (RMA) from November 1 – March 31 and the minimum size for cod in the GOM would increase to 24 inches.

The No Action alternative consists of the measures currently in effect for the FMP, as well as the two default measures specified under Amendment 13. Under the

default measures, Category A DAS would be reduced by approximately 8 percent, and any DAS used in the SNE/MA RMA would be charged at a rate of 1.5 to 1.

Alternatives that were considered, but rejected, include area closures and hard TACs. Area closures did not meet the purpose and need for this action, and hard TACs would have been very difficult to administer and enforce, given the short duration of this action. Given the unusual context of this short-term action, no other alternatives were reasonable. The original preferred alternative was revised after public comment highlighted that this alternative was not fully consistent with National Standards 1 and 8 of the Magnuson-Stevens Act. As a result, a revised preferred alternative was developed that would implement all of the measures in the original preferred alternative with the exception that vessels fishing in the U.S./Canada Management Area would not be subject to differential DAS counting and that the FW 42 trip limits for GB winter flounder and white hake would be implemented instead. Analysis of the revised preferred alternative is included in the addendum to this EA.

Although measures target the six stocks for which they are designed, F would be reduced for all NE multispecies stocks, with the percentage reductions ranging from approximately 0 to 59.7 percent, if the emergency action would be implemented for the entire 2006 fishing year. Implementation of the revised preferred alternative would result in reductions in F as follows: GOM cod: 37 percent; CC/GOM yellowtail flounder: 40 percent; GB winter flounder: 30 percent; SNE/MA winter flounder: 22 percent; SNE/MA yellowtail flounder: 60 percent; and white hake: 31 percent. The proposed measures would achieve the necessary F reductions to maintain the Amendment 13 rebuilding schedule for GOM cod (29 percent reduction needed), CC/GOM yellowtail flounder (40 percent reduction needed), SNE/MA winter flounder (7 percent reduction needed), SNE/MA yellowtail flounder (48 percent reduction needed), and white hake (13 percent reduction needed). In addition, although results of the Closed Area Model (CAM) described above indicate that the revised preferred alternative does not achieve the necessary mortality reductions for GB winter flounder, other measures not analyzed by the CAM could reduce mortality on this stock sufficient to meet the necessary mortality reductions for 2006. Other biological impacts include some benefits to habitat protection primarily due to overall effort reductions of the preferred alternative and the delayed start date of the Eastern U.S./Canada Haddock SAP. There would be no notable affects on protected species as part of the revised preferred alternative.

If the proposed measures would remain in effect for the entire 2006 fishing year, it would result in a substantial overall reduction in total groundfish revenue of about 21 percent, or $16 million. Total revenue from trips that landed groundfish would decline between 21 -27 percent across all ports except Boston and Chatham, but the impact on total revenue would vary depending on a port's dependence on groundfish. Net returns to individual vessel owners and crew would decrease, on average, by approximately 15 percent. Smaller trawl vessels (i.e., less than 50 feet) would be primarily affected by the revised emergency action. Median loss in net return was estimated to be 14 percent for trawl vessels, 12 percent for gillnet vessels, and 7 percent for vessels using hook gear. Restriction of the Regular B DAS Program to the U.S./Canada Management Area on GB could result in a loss of $3 million in fishing revenue compared to returns observed during the 2004 fishing year. However, overall, the continuation of this program would provide an additional source of fishing revenue compared to the No Action alternative, as

this program would expire unless continued through this action. The continuation of the DAS Leasing Program through this action would also provide additional economic relief compared to the No Action alternative. The proposed delayed start date of the Eastern U.S./Canada Haddock SAP would have less of an impact and would potentially be offset by higher overall ex-vessel prices observed by prolonging access to this SAP. Proposed recreational measures would result in uncertain impacts to private recreational vessels and a reduction in revenue of approximately $154,000 for party/charter vessels.

In contrast, measures under the No Action alternative would not achieve the necessary F reductions to maintain the rebuilding program established under Amendment 13. The No Action alternative would reduce F for all groundfish species except for pollock, which would increase by just over 1 percent. Notable F reductions from the No Action alternative include a 46 percent reduction for SNE/MA yellowtail flounder and a 38 percent reduction for SNE windowpane flounder, while F on GOM cod and CC/GOM yellowtail flounder would only decrease by 3 and 4 percent, respectively. Failure to delay the start date of the Eastern U.S./Canada Haddock SAP would allow vessels to continue to fish in this area, resulting in continued catches of non-groundfish species, particularly monkfish and skates. The No Action alternative would result in a reduction of groundfish revenue of $5 million, with total losses to overall fishing revenue of $8 million. Ports south of Massachusetts would experience the greatest reduction in groundfish revenues, but GOM ports would likely see the greatest reduction in total fishing revenue due to their reliance on groundfish. Larger trawl vessels would be more affected by the No Action alternative than other vessel classes.

The reductions in F accomplished by this action would, in large measure, implement the necessary F reductions required for the 2006 fishing year. Implementation of the Secretarial action in May 2006, in combination with the subsequent management measures adopted under FW 42, would likely achieve the 2006 F reductions necessary and result in F rates that are consistent with the requirements of the FMP rebuilding schedule. Because the proposed emergency measures are designed to work in conjunction with the proposed FW 42 measures, the analysis of this action presumes a subsequent management action (FW 42) for the 2006 fishing year, which together will likely result in the necessary F reductions, provided FW 42 is implemented early in the 2006 fishing year. If FW 42 is not implemented early in the 2006 fishing year as anticipated, implementation of additional management measures by the Secretary may be necessary to further reduce F and meet FMP requirements. Overall, the impact of this action will not be significant. A net positive impact on the NE multispecies stocks is anticipated.

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2.4 List of Acronyms

ALWTRP	Atlantic Large Whale Take Reduction Plan
CFR	Code of Federal Regulations
Council	New England Fishery Management Council
CZMA	Coastal Zone Management Act
DAS	Days-at-Sea
DPS	Distinct Population Segment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
ESA	Endangered Species Act
F	Fishing Mortality Rate
FMP	Fishery Management Plan
FSEIS	Final Supplemental Environmental Impact Statement
FW	Framework Adjustment
GB	Georges Bank
GOM	Gulf of Maine
HAPC	Habitat Area of Particular Concern
MMPA	Marine Mammal Protection Act
MA	Mid-Atlantic
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAO	NOAA Administrative Order
NE	Northeast
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
PDT	Plan Development Team
RMA	Regulated Mesh Area
SAP	Special Access Program
SBA	Small Business Administration
SFA	Sustainable Fisheries Act
SNE	Southern New England
TAC	Total Allowable Catch
TMGC	Transboundary Management Guidance Committee
TRAC	Transboundary Resources Assessment Committee
VEC	Valued Environmental Component
Understanding	U.S./Canada Resource Sharing Understanding

3.0 Background

The primary statute governing the management of fishery resources in the U.S. EEZ is the Magnuson-Stevens Fishery Conservation and Management Act (MSA). In New England, the Council is responsible for developing FMPs that comply with the MSA and other applicable laws. Section 303 of the MSA requires that each FMP contain management measures that prevent overfishing and rebuild overfished stocks. Overfishing is occurring when the F on a particular stock exceeds the F threshold. A stock is overfished if the stock biomass is below the biomass level of a fully rebuilt stock, which is the biomass that can produce maximum sustainable yield (MSY), generally ½ B_{MSY} or its proxy. These status determination criteria are defined for each stock managed by a FMP and are used to evaluate the success of a management program.

The NE Multispecies FMP specifies the management measures for 15 groundfish species off the New England and Mid-Atlantic coasts (Atlantic cod, haddock, yellowtail flounder, pollock, American plaice, witch flounder, white hake, windowpane flounder, Atlantic halibut, winter flounder, ocean pout, offshore hake, redfish, red hake, and silver hake), although the bulk of the measure concentrate on regulating 12 regulated groundfish species (i.e., all groundfish species except for offshore hake, red hake, and silver hake), comprising a total of 20 individual stocks. This FMP was originally implemented in 1977 and has continued to evolve through a series of framework adjustments and amendments (implemented through Federal regulations) that have implemented management measures in an attempt to prevent overfishing and rebuild overfished stocks. A major overhaul of the FMP occurred in 2004 with the promulgation of a final rule implementing Amendment 13 (NEFMC 2003). That action established rebuilding programs for all stocks managed by the FMP and clarified the definitions of the status determination criteria for all of the stocks managed by this FMP to fully comply with the MSA, as amended by the Sustainable Fisheries Act (SFA). According to Amendment 13, a groundfish stock is considered overfished when a stock's spawning stock biomass (SSB) is determined to be below a level equivalent to ½ SSB_{MSY} or its proxy. Overfishing is considered to be occurring when the F of a particular stock is greater than F_{MSY} (see Table 2 of Amendment 13). Amendment 13 also established rebuilding programs to reduce F and implemented appropriate measures to rebuild overfished stocks while at the same time mitigating economic and social impacts of such measures.

Amendment 13 established a process whereby the NE multispecies complex is routinely evaluated through a biennial adjustment. This adjustment process provides an update of the scientific information on the status of the stocks and an evaluation of the effectiveness of the regulations (NEFMC 2003). The latest stock assessment, GARM II, took place from August 15-19, 2005. This assessment provided updated information to determine F and SSB estimates for calendar year 2004 relative to the Amendment 13 status determination criteria. This assessment indicated that stock biomasses have increased in only 6 of the 19 stocks managed under this FMP from 2001-2004. Average biomass increase for these 6 stocks was 50 percent, while the average biomass decrease for the remaining 13 stocks was 19 percent (Mayo and Terceiro 2005). Between 2001-2004, F decreased for 13 of the 19 stocks, with an average decline of 50 percent.

However, F increased between 31 and 73 percent for 6 stocks, for an average increase of 49 percent (Mayo and Terceiro 2005).

According to the information from GARM II, despite the restrictive management measures implemented under Amendment 13, the calendar year 2004 F's for several groundfish stocks continue to be higher than those required to meet the objectives of the rebuilding programs implemented by Amendment 13. In addition, SSB levels for several species continue to remain low. As a result, several groundfish stocks are still overfished and overfishing is still occurring (see Table 1 below).

Stock	F_{MSY}	F_{2004}	$SSB_{Threshold}$ (1/2 SSB_{MSY}) (mt)	SSB_{2004} (mt)	Overfished	Overfishing
GOM Cod	0.23	0.63	41,400	18,800	Y	Y
CC/GOM Yellowtail Flounder	0.17	0.75	6,300	1,100	Y	Y
White hake	0.29	1.18	7,350	14,700	Y	Y
GB Yellowtail Flounder	0.25	1.19-1.75	29,400	8,500-15,700	Y	Y
SNE/MA Yellowtail Flounder	0.26	0.99	34,750	695	Y	Y

Table 1. Current status of specific groundfish stocks targeted by this action with respect to the status determination criteria (Adapted from NEFMC 2003 and Mayo and Terceiro 2005).

The Council's Groundfish Plan Development Team (PDT) utilized the results of GARM II to calculate estimates of the 2005 calendar year F for all groundfish stocks. These calculations indicate that F_{2005} for particular groundfish stocks is substantially less than that observed for 2004, as illustrated in Table 2 below. Despite these reductions, the F for some of these stocks is still above the F targets adopted in Amendment 13 for fishing year 2006. As a result, further reductions of F are necessary for these stocks. It is important to note that although GB winter flounder is not considered to be overfished, overfishing is still occurring and F reductions for this species are necessary under this action. Although F on GB yellowtail flounder in 2005 continues to be above the fishing year 2006 target F established in Amendment 13, this stock is controlled by a hard TAC. This hard TAC controls F by establishing a strict maximum amount of GB yellowtail flounder that may be caught, ensuring that the target F for 2006 is not exceeded.

Stock	F_{2004}	Estimated F_{2005*}	Amendment 13 Fishing Year 2006 Target F	Mortality Reduction Necessary
GOM Cod	0.63	0.34	0.23	32%
CC/GOM Yellowtail Flounder	0.75	0.48	0.26	46%
White hake	1.18	NA	1.03	13%
GB Yellowtail Flounder	1.19-1.75	0.20-0.40	0.25	0%
GB Winter Flounder**	1.86	-	1.0	46%
SNE/MA Yellowtail Flounder	0.99	0.58	0.26	55%

*This estimate of F_{2005} is for calendar year 2005 and does not include an adjustment for retrospective patterns of F. Adjusting for these retrospective patterns would increase F_{2005} for all of the above species.
**The F_{2004} for GB winter flounder (1.86) represents the bias corrected ratio of F_{2004}/F_{MSY}. The 2006 target F of 1.0 represents fishing at a level equivalent to F_{MSY} (i.e., F_{2006}/F_{MSY}).
NA: An estimate of F_{2005} for the stocks of GB winter flounder and white hake could not be developed because the assessments are index based. The necessary F reductions are based upon F_{2004}.

Table 2: Mortality reduction necessary to achieve Fishing Year 2006 Amendment 13 targets (adapted from NEFMC 2006 and Mayo and Terceiro 2005).

The rebuilding strategy implemented by Amendment 13 established two default measures for fishing year 2006 that would further reduce F for all groundfish species, but particularly for American plaice and SNE/MA yellowtail flounder, unless those stocks responded to the Amendment 13 management measures better than anticipated (see Section 3.6.1.7 of Amendment 13 (NEFMC 2003)). These default measures include a revision of the DAS category A:B ratio from 60:40 to 55:45, and differential DAS counting in the SNE/MA RMA at a rate of 1.5:1. Three criteria were established to determine the conditions under which the default measures would <u>not</u> be necessary:

1. The targeted stock(s) is(are) projected to be at the target biomass with at least a median probability in the year the measures are to be implemented and overfishing is not occurring on those stocks; or
2. Biomass estimates show rebuilding is on track and the best available estimate of the F for the targeted stock(s) meets the F for the rebuilding program; or
3. Overfishing is not occurring and the best available estimate of the F for the targeted stock(s) is projected to rebuild the stock with at least a median probability by the end of the rebuilding period.

In addition to the above three conditions specific to American plaice and SNE/MA yellowtail flounder, the management program for all groundfish stocks must meet the target F rates specified for 2006 (see Table 10 of Amendment 13) for the default measures to be deferred (NEFMC 2003).

Data from GARM II indicate that none of these criteria have been met for SNE/MA yellowtail flounder and that American plaice is still considered overfished. Given this, as well as the fact that the target F's for 2006 (see Table 2 above) are not being met for other groundfish stocks, the default measures (revision of the DAS category A:B ratio from 60:40 to 55:45, and differential DAS counting in the SNE/MA RMA at a rate of 1.5:1) will automatically go into place on May 1, 2006, under existing

regulations. Although these default measures would likely have positive impacts on all groundfish species (including a reduction in F), these measures are not likely to sufficiently reduce F for the particular stocks that require additional F reductions to meet the 2006 fishing year F targets established by Amendment 13 (see Section 8.2.1 for further details). Therefore, to ensure that the rebuilding program established under Amendment 13 remains on track to rebuild overfished groundfish stocks within the required time period, additional and/or modified measures are needed to achieve the additional F reductions for several species in fishing year 2006, as outlined in Table 2 above, to achieve the Amendment 13 mortality targets and to fully comply with the requirements of the MSA.

4.0 Purpose and Need for Action

As explained above, based upon data from GARM II, and subsequent PDT analysis, F for calendar year 2005 is above levels required by the Amendment 13 rebuilding plan for 6 groundfish stocks. To come into full compliance with the requirements of the MSA, as amended by the SFA, substantial reductions in F are necessary for several of these stocks to reduce overfishing and rebuild overfished stocks. The Secretary of Commerce (Secretary) is required to ensure that the FMP continues to meet the rebuilding program objectives specified in Amendment 13 in order to be consistent with MSA and to comply with past court rulings. Amendment 13 was developed to satisfy the Court Order to rebuild overfished stocks while minimizing the impact on fishing communities and maximizing the opportunity for fishermen to target healthy groundfish stocks, consistent with the National Standards of the MSA. Amendment 13 specified formal rebuilding programs for all groundfish stocks, implemented measures to reduce fishing effort and capacity, and established other programs, such as the DAS Leasing Program and SAPs, to help mitigate the economic and social impacts of the effort reductions of Amendment 13. In addition, Amendment 13 established a biennial adjustment process to review the fishery and implement any changes necessary to ensure that the fishery continues to meet the goals and objectives of the FMP. According to the ruling in Oceana, Inc., et al., v. Evans, et al. (Civil Action No. 1:04CV00811 ESH), Amendment 13 does meet the conservation and rebuilding requirements, as well as the National Standards.

FW 42 to the FMP is currently being developed by the Council to serve as the first biennial adjustment under the process adopted in Amendment 13 and described above. FW 42 proposes management measures designed to achieve the necessary F reductions for specific groundfish stocks requiring F reductions for the 2006 fishing year. Because the 2006 fishing year begins on May 1, 2006, in order to ensure that FW 42 management will effectively reduce F for the entire 2006 fishing year, FW 42 would have to be implemented by May 1, 2006, as required by the regulations at 50 CFR 648.90(a)(2). However, at its November 15-17, 2005, meeting, the Council announced that it was not able to complete FW 42 in time to implement these measures by May 1, 2006.

Section 305(c) of the MSA states that, if the Secretary finds that an emergency or overfishing exists, or that interim measures are needed to reduce overfishing for any fishery, he may promulgate emergency measures to address overfishing and address other

management concerns while the Council prepares proposed regulations to stop overfishing and rebuild fish stocks on a more permanent basis. Such measures do not, by themselves, have to stop overfishing, but may be used to contribute to efforts to stop overfishing until the Council, after considering public input, can complete a framework adjustment or amendment to the FMP.

Emergency management actions authorized by section 305(c) of the MSA may only be prepared under special circumstances. In accordance with NMFS policy guidelines for the use of emergency rules (62 FR 44421, August 21, 1997), emergency actions may be implemented to resolve "unforeseen events or recently discovered circumstances" that present "serious conservation or management problems" that "can be addressed through emergency regulations for which the immediate benefits outweigh the value of advanced notice." These guidelines indicate that an emergency action might be justified under one or more of the following situations:

1. Ecological:
   a. To prevent overfishing as defined in an FMP, or as defined by the Secretary in the absence of an FMP; or
   b. To prevent other serious damage to the fishery resource or habitat; or
2. Economic: To prevent significant direct economic loss or to preserve a significant economic opportunity that otherwise might be foregone; or
3. Social: To prevent significant community impacts or conflict between user groups.

Applying the above criteria, NMFS, on behalf of the Secretary, has determined that, given the recent and unforeseen announcement by the Council that the implementation of FW 42 will be delayed beyond May 1, 2006; the need to reduce F on specific groundfish stocks by the start of the 2006 fishing year; and the economic and social impacts that would occur if specific programs designed to mitigate economic and social impacts of recent effort reductions were allowed to expire, the current situation constitutes an emergency.

Emergency action is justified for ecological, economic, and social reasons. Despite the implementation of restrictive management measures for all sectors of the fishery (including both state and Federal commercial operations and the recreational fishing sector) in Amendment 13, F for several groundfish stocks throughout all RMAs managed by the FMP would not achieve the required F levels for 2006. In addition, the 2003 year class of GOM and GB cod should be carefully managed, particularly for the months when fishing effort and catch is typically high (i.e., May through July). Because the stocks for which management measures are required are distributed across several geographic areas, it is necessary to continue to reduce or constrain fishing effort in all sectors and in all areas managed by the FMP. Although notice and comment rulemaking is being proposed, there is insufficient time to implement the proposed measures under the normal amendment or framework process, leaving the section 305(c) emergency action process as the only means to implement such measures.

Failure to reduce or prevent overfishing by May 1, 2006, while the Council completes FW 42 would likely lead to the continued overfishing of several groundfish stocks, resulting in slower rebuilding that would require even more stringent future measures, with additional economic and social consequences. Two special programs

implemented by Amendment 13 and FW 40A were intended to help mitigate the economic and social impacts of the effort reductions of the FMP. The DAS Leasing Program, originally implemented by Amendment 13, expires on April 30, 2006, while the Regular B DAS Program, originally implemented by FW 40A, expired on October 31, 2005. Without such programs, there would be greatly reduced means to mitigate the potential economic and social impacts resulting from the current and anticipated management measures. Therefore, an emergency action to reduce overfishing and maintain specific programs intended to mitigate the economic and social impacts of effort reductions in the fishery while a more comprehensive management action is being developed through FW 42 is appropriate and consistent with the MSA and agency policy guidelines.

The Secretarial emergency action that is the subject of this environmental assessment (EA) will put in place a suite of relatively simple, short-term management measures that are intended to further reduce F on six groundfish stocks and maintain the DAS Leasing Program and a modified Regular B DAS Program during the time that it takes the Council and NMFS to develop and implement FW 42. The stocks for which the management measures are designed are the following: GOM cod, CC/GOM yellowtail flounder, GB winter flounder, GB and SNE/MA yellowtail flounder, and white hake. No new management measures are required to reduce F on Georges Bank yellowtail flounder, because the proposed hard TAC for 2006 would reduce F to the appropriate level. As is more fully discussed later in this document, these measures will result in both quantifiable and non-quantifiable reductions in F for virtually all of the NE multispecies stocks managed under the FMP.

The proposed emergency measures are designed to work in conjunction with the proposed FW 42 measures to achieve the F requirements of the FMP. The analysis of this action presumes a subsequent management action (FW 42). If FW 42 is not implemented early in the 2006 fishing year as anticipated, implementation of additional management measures by the Secretary may be necessary to further reduce F and meet FMP requirements.

To minimize the social and economic impact of these temporary measures, ensure industry understanding and compliance with these measures, enable NMFS to administer such short-term measures, and allow vessels to easily adapt to follow-up measures implemented by FW 42, it is important that measures proposed by this emergency action be simple; fair; easy to understand, administer and enforce; and similar to the measures currently being developed under FW 42 as much as practicable, provided they are consistent with the objectives of this action.

5.0 Preferred Alternative

The preferred alternative implements a suite of measures intended to reduce F for several groundfish stocks until subsequent management measures can be implemented by FW 42 to the FMP that is currently being developed by the Council. The proposed management measures are:

- Differential DAS counting at a rate of 1.4:1 for each Category A DAS used in all RMAs (see Figure 2);

- A reduction of the GOM cod trip limit to 600 lb/DAS, up to 4,000 lb/trip;
- A reduction of the CC/GOM and SNE/ MA yellowtail flounder trip limit, as follows: 500 lb per DAS, up to 2,000 lb per trip during July, August, September, December, January, February, March, and April; and 250 lb per trip during May, June, October, and November;
- A GB yellowtail flounder trip limit of 10,000 lb/trip;
- A delayed start date of August 1 for the Eastern U.S./Canada Haddock SAP;
- A provision to allow vessels to fish inside and outside of the Eastern U.S./Canada Area on the same trip;
- Incidental TAC amounts for GB winter flounder and GB yellowtail flounder;
- A modified Regular B DAS Program, restricted to the U.S./Canada Management Area;
- A prohibition on the use of Regular B DAS while on a monkfish DAS for limited access Category C and D monkfish vessels fishing in the NE multispecies Regular B DAS Program;
- Monkfish possession limits for limited access Category C and D monkfish vessels fishing in the Regular B DAS Program under a NE multispecies DAS;
- The continuation of the DAS Leasing Program;
- GOM cod prohibition for party/charter and private recreational vessels from November 1 – March 31; and
- An increase in the size limit for GOM cod to 24 inches for party/charter and private recreational vessels.

These proposed measures would not change one of the two Amendment 13 default measures, designed to reduce F for several groundfish stocks, and would modify one default measure. The default measure that would be unchanged by the Secretarial action is as follows: For all limited access NE multispecies DAS vessels allocated A and B DAS, a revision of the DAS allocation ratio between Category A and Category B DAS from 60:40 to 55:45. That is, for the 2006 through 2008 fishing years (FYs), unless modified by FW 42, under the Amendment 13 default measure, Category A DAS are defined as 55 percent of the vessel's used DAS baseline specified under Amendment 13 (i.e., the maximum number of DAS used in a fishing year between 1996-2001 in which at least 5,000 lb of regulated species were landed), while Category B Regular and Reserve DAS are each defined as 22.5 percent of the vessel's used DAS baseline specified under Amendment 13. This allocation change represents an 8.3 percent reduction in number of Category A DAS (from the Amendment 13 level). The definition of Category C DAS is not affected by this action.

A second Amendment 13 default measure that would be modified by this action is differential DAS counting at a rate of 1.5 to 1 in the entire SNE/MA RMA to protect SNE/MA yellowtail flounder. As described in further detail below, the preferred alternative modifies this particular default measure by charging differential DAS at the rate of 1.4 to 1 in all RMAs instead of at 1.5 to 1 in just the SNE/MA RMA. A differential rate of 1.4 to one is proposed because analysis indicates that, in conjunction with anticipated FW 42 measures, a rate of 1.4 to 1 is sufficient to achieve the necessary impact on several groundfish species that need additional F reduction.

5.1 Differential DAS Counting

All NE multispecies Category A DAS used by a vessel issued a limited access NE multispecies DAS permit will be charged at a rate of 1.4:1, regardless of area fished. Day gillnet vessels will be charged at the differential rate of 1.4:1 for any trip of 0-3 hours in duration and for trips greater than 11 hours in duration. For day gillnet trips between 3-11 hours in duration, vessels will be charged a full 15 hours.

Rationale: This measure is intended to implement differential DAS, at the rate of 1.4 to 1 for the entire fishery, and specifies how such DAS accounting would apply to vessels fishing with gillnets that are designated as Day gillnet vessels. This measure is intended to, in conjunction with FW 42, achieve the necessary F reductions required for the six stocks which require new management measure to reduce F. In addition, expanding differential DAS counting to include the GOM and GB RMAs will prevent a redirection of effort into these areas. If differential DAS accounting is implemented in only certain geographic areas, the areas without differential DAS counting may experience increases in fishing effort, as vessels attempt to maximize the value of their DAS and minimize DAS charges. If effort were redirected into the GOM or GB RMAs, there is a high likelihood that this would increase F on these stocks. In particular, expanded effort on GB could result in the premature harvest of the TACs specified for the U.S./Canada Management Area. Universally applying differential DAS to all RMAs also simplifies the administration of a differential DAS counting measure.

Under current regulations, any trip by a Day gillnet vessel that is 0-3 hours in duration, or longer than 15 hours in duration, is charged DAS according to the actual number of DAS used. However, any trip between 3 and 15 hours in duration is charged 15 hours of DAS use. This is necessary because Day gillnet vessels are only charged DAS for setting and hauling their nets and are not charged for the time nets are actually in the water fishing. The application of differential DAS counting to Day gillnet trips was developed in such a way as to ensure that the application of this measure would be consistent between Day gillnet vessels and vessels using other gear types. For example, charging Day gillnet trips of 3-11 hours in duration as 15 hours of DAS use is equivalent to charging a 11-hour trip at a rate of 1.4:1. This ensures that Day gillnet vessels continue to be charged a minimum of 15 hours for shorter trips and properly charges trips of between 0 and 3 hours, and trips longer than 11 hours in duration at a rate of 1.4:1, consistent with the DAS use rate applied to other vessels.

5.2 Possession Limits

5.2.1 GOM Cod

For vessels operating under a NE multispecies DAS, the possession limit of GOM cod is reduced from 800 lb/DAS, up to 4,000 lb/trip, to 600 lb/DAS, up to 4,000 lb/trip. For vessels operating under the limited access NE multispecies Handgear A permit regulations, the GOM cod possession limit is reduced from 300 lb/trip to 250 lb/trip. The

GOM cod trip limit for vessels operating under the open access Handgear B provisions is maintained at 75 lb.

Rationale: The decrease in the GOM cod trip limit is intended to decrease incentives for vessels to target GOM cod on a fishing trip, without substantially increasing regulatory discards. Previous analysis conducted in Amendment 13 suggests that a reduction of the GOM cod trip limit may reduce F by an additional 5-percent, but would increase discards by approximately 10-percent (see Figure 143 of NEFMC 2003), however precise estimates of the impact of the change in the GOM cod possession limit on discard rates is not available at this time. Although discards would increase, the overall reduction of F likely includes the impact of increased discards. As a result, there would be an overall benefit to such a reduction, despite the increase in discards. Reductions in the GOM cod trip limits are proportional among all permit categories. Regulations at 50 CFR 648.82(b)(6) and § 648.88(a)(1) require any proportional reduction in trip limits to be rounded up to the nearest 50 lb for Handgear A permits, while the trip limit would be rounded up to the nearest 25 lb for Handgear B permits, respectively.

5.2.2 GB Yellowtail Flounder

The GB yellowtail flounder trip limit is reduced from an unlimited amount to 10,000 lb/trip for the duration of the Secretarial action, unless otherwise revised pursuant to the authority provided to the Regional Administrator by Amendment 13.

Rationale: The previously unlimited trip limit for GB yellowtail flounder caused the 2004 GB yellowtail flounder TAC for the U.S./Canada Area to be reached prior to the end of the 2004 fishing year due, in large part, to activities in the Closed Area II Yellowtail Flounder SAP. This SAP is not likely to be opened for the next several years due to insufficient GB yellowtail TAC to sustain a yellowtail fishery inside and outside of the SAP simultaneously. Based on the likelihood that the GB yellowtail flounder TACs will continue to remain relatively small over the next several years, there is an elevated risk that the small GB yellowtail flounder TACs will be harvested before the end of the fishing year. Should this TAC be harvested before the end of the fishing year, the Regional Administrator is required to close the Eastern U.S./Canada Area to all NE multispecies DAS vessels and implement a prohibition on the retention and possession of GB yellowtail flounder for the remainder of the fishing year. This could result in substantial regulatory discards, economic and social impacts, and a failure to fully harvest, and achieve optimum yield (OY) from the TACs of GB cod and GB haddock in the Eastern U.S./Canada Area. This measure attempts to prolong the availability of the small 2006 GB yellowtail flounder TAC during the 2006 fishing year and minimize the possibility that the TAC would be caught prior to the end of the 2006 fishing year.

5.2.3 CC/GOM and SNE/MA Yellowtail Flounder

A reduction of the CC/GOM and SNE/MA yellowtail flounder trip limit is proposed as follows: 500 lb per DAS up to 2,000 lb per trip during July, August,

September, December, January, February, March, and April; 250 lb per trip during May, June, October, and November.

Rationale: High catch rates have historically occurred during these time periods, and the spawning period overlaps the May/June period. The current trip limits for the other portion of the year is 750 lb per DAS up to 3,000 lb per trip. The proposed reduction to 500 lb per DAS up to 2,000 lb maximum would reduce further F on these stocks while attempting to minimize regulatory discards. Further, the current trip limits for yellowtail flounder for the two stock areas are inconsistent with respect to the time periods during which the 250 lb trip limit is in effect (currently April, May, Oct, Nov for CC/GOM; and March, April, May, June for SNE/MA). This proposed measure would make such time periods consistent between the CC/GOM and the SNE/MA stock areas in order to simplify industry understanding, and enforcement of this trip limit.

5.3 Modified Regular B DAS Program

The Regular B DAS Program was implemented on November 19, 2004, through FW 40A and expired on October 31, 2005. A modified Regular B DAS Program is proposed for the duration of this Secretarial action, to provide opportunities to target healthy stocks (i.e., GB haddock) that could withstand additional fishing effort while minimizing impacts to stocks for which an F reduction is required. Although GB haddock is still considered to be overfished, overfishing is not occurring. Preliminary estimates of F on GB haddock during the 2005 fishing year project that F on this species is likely to decrease further in 2005 to 0.18, suggesting that potential increases in effort due to a modified Regular B DAS Program proposed by this action would not likely undermine the rebuilding program for GB haddock.

This action is being proposed to help mitigate some of the economic impacts of effort reductions under this action and to provide incentives for the fishing industry to increase selective fishing practices to increase revenue and continue to rebuild overfished stocks. The following sections describe the proposed provisions of this program. All provisions originally implemented under FW 40A would remain the same, with the exception of the incidental catch TACs, gear requirements, area restriction, and quarterly DAS limits, specified in further detail below.

5.3.1 Eligibility

Any vessel issued a valid limited access NE multispecies DAS permit and allocated Regular B DAS is eligible to participate in the Regular B DAS Program. However, any NE multispecies DAS vessel also issued a limited access monkfish Category C or D permit is prohibited from fishing under a NE multispecies Regular B DAS and a monkfish DAS simultaneously while participating in the Regular B DAS Program. Such vessels may only participate in the Regular B DAS Program under a NE multispecies only DAS).

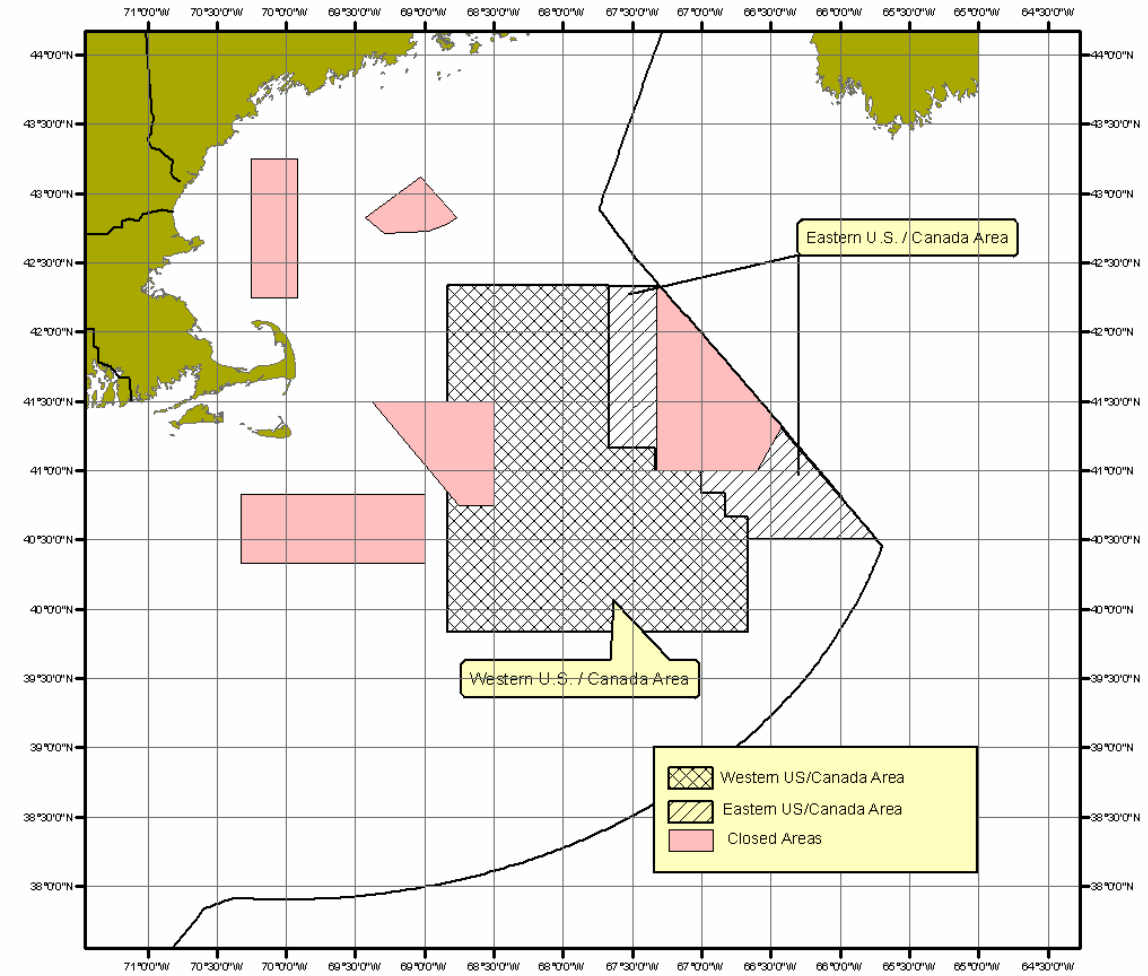
Rationale: The Regular B DAS Pilot Program originally implemented by FW 40A allowed vessels issued a limited access monkfish Category C or D permit to use a NE

multispecies Regular B DAS to fulfill the requirements of the monkfish FMP that requires such vessels to use a NE multispecies DAS every time a monkfish DAS is used. Category C and D monkfish vessels were able to successfully target monkfish under the Regular B DAS Pilot Program. However, based on a recent assessment, it was determined that the pace of monkfish rebuilding has slowed. Therefore, to reduce mortality on monkfish resulting from the use of Regular B DAS, this emergency action would not allow Category C or D monkfish vessels from using a NE multispecies Regular B DAS and a monkfish DAS simultaneously under the Regular B DAS Program. Category C and D monkfish vessels would still be able to participate in this program, but they would be required to fish under only a NE multispecies DAS.

5.3.2 Area Restriction

This proposed measure would renew the Regular B DAS Program (which expired on October 31, 2005), but would restrict vessels fishing under the Regular B DAS Program to target healthy groundfish stocks within the U.S./Canada Management Area only (see Figure 1).

Figure 1. Map of the U.S./Canada Management Area.



Rationale: Based on the results of GARM II, the primary species that may be targeted by the Regular B DAS Program are limited to healthy stocks, primarily haddock, pollock, and redfish. The overall target TAC for GB haddock, in particular, has been substantially underharvested on GB for several years, meaning that the fishery has not been achieving OY for this stock. Therefore, fishing effort on this species could be increased, provided such increases in fishing effort do not jeopardize the sustainability of other stocks within the area. This measure would help facilitate the achievement of OY for this stock and provide some relief from the economic and social impacts associated with continued effort reductions in this fishery, without compromising efforts to continue rebuilding overfished stocks.

Allowing vessels to use Regular B DAS in the GOM, SNE, or MA RMA could lead to additional F on stocks of concern within these areas and unnecessarily compromise rebuilding efforts of this action. The primary management measure to constrain catch of stocks of concern under the Regular B DAS Program is incidental catch TACs. Incidental catch TACs strictly limit the amount of each stock of concern that could be harvested under this program for each quarter of the fishing year (see Section 5.3.4 below for more information). Information from FW 42 indicates that the

incidental catch TACs proposed for CC/GOM and SNE/MA yellowtail flounder for the first quarter of the 2006 fishing year are 0.2 mt (440 lb) and 0.8 mt (1,764 lb), respectively. Such small incidental catch TACs could be harvested in very few trips under this program. As such, NMFS would have difficulty monitoring such small catch amounts and may be unable to prevent these TACs from being exceeded during a particular calendar quarter. As a result, in addition to the need to avoid additional F on stocks within the GOM and SNE/MA RMAs, it would be infeasible to allow this program to continue in these areas under this emergency action. While the preliminary incidental catch TACs for GB yellowtail flounder and GB winter flounder are small, they should be sufficient for NMFS to monitor and ensure that they are not exceeded during a calendar quarter. In addition, the other provisions in this measure (such as the DAS limits and gear requirements - Sections 5.3.3 and 5.3.5, respectively) should offer greater assurance that catch rates of stocks of concern under this program would be low.

Restricting the continuation of this program on GB does provide economic and social benefits, but also provides some conservation benefit, as well. Limiting vessel operations under the Regular B DAS Program to the U.S./Canada Management Area on GB provides greater assurance that vessels would not increase mortality on stocks that are in the most need of F reduction, but would instead focus effort on stocks that can better accommodate increases in F. Although GB cod, GB yellowtail flounder, and GB winter flounder are listed as stocks of concern under this preferred alternative, the provisions of the U.S./Canada Management Area enable the Regional Administrator to more effectively monitor and enforce the provisions of the program, without compromising F on GB stocks. Catch rates for species caught in the U.S./Canada Management Area are diligently monitored and accounted for by NMFS staff at the Northeast Regional Office. In addition, the Regional Administrator has the authority, as part of the current U.S./Canada Management Area regulations, to modify access to this area, reduce the trip limit for certain species, and revise other measures to ensure that the TACs specified in the U.S./Canada Management Area for GB cod and GB yellowtail flounder are not exceeded during the fishing year. Because any GB cod caught within the Eastern U.S./Canada Area, and any GB yellowtail flounder caught within the Eastern or Western U.S./Canada Area, would count towards the overall U.S./Canada Management Area TACs for these species, any catch of these species from these particular areas under the Regular B DAS Program would also count towards these TACs. As a result, the authority provided to the Regional Administrator to regulate catch in the U.S./Canada Management Area could also, indirectly, help to regulate catch rates under the Regular B DAS Program. While this authority does not have a direct impact on the harvest of GB winter flounder, revising such management measures to ensure that the GB cod and GB yellowtail flounder TACs are not exceeded would offer benefits to the protection of GB winter flounder, as well, due to the fact that GB winter flounder and GB yellowtail flounder are often caught on the same tows. The hard TACs established for these species under the Regular B DAS Program ensure that catches of these species under this program do not threaten mortality targets established under the FMP. Further, the authority of the Regional Administrator to modify the regulations of the U.S./Canada Management Area provides further assurance that the operation of this program in the U.S./Canada Management Area would not compromise the objectives of the FMP.

Restricting vessel operations under the Regular B DAS Program to the U.S./Canada Management Area would provide some opportunity for vessels to selectively target healthy groundfish stocks without compromising rebuilding efforts of stocks of concern. This program is necessary to help offset some of the economic and social impacts resulting from effort reductions under Amendment 13 and the preferred alternative. Further, restricting this program to the U.S./Canada Management Area would not alter the majority of trips under this program, based on previous fishing practices. Very few trips under this program were taken in the GOM or SNE/MA RMAs. As a result, not only does this measure provide some assurance that additional effort would not be redirected into the GOM or SNE/MA RMAs, but it also provides economic and social benefits without altering expected fishing behavior to any great degree.

5.3.3 Effort Controls

DAS Limit

A maximum of 1,500 Regular B DAS can be used in this program for the duration of the Secretarial action (180 days, or approximately 6 months). Should the emergency Secretarial action be continued for another 180 days, as provided by the MSA, an additional 2,000 Regular B DAS could be used in this program for a total of 3,500 DAS. DAS will be allocated to each quarter of the fishing year as shown below. DAS that are not used in one quarter are not available for use in the subsequent quarter.

- Quarter 1 (May – July): 500 DAS
- Quarter 2 (August – October): 1,000 DAS
- Quarter 3 (November – January): 1,000 DAS
- Quarter 4 (February – April): 1,000 DAS

These DAS are not apportioned to individual permits. The number of DAS is based on the number of DAS on trips that finish as a Regular B DAS – that is, if a DAS is "flipped" from a Category B DAS to a Category A DAS, it does not count against the limit of Regular B DAS for this program. This program will end if 1,500 Regular B DAS are used during the first two quarters of the Secretarial action, or if 3,500 Regular B DAS are used during the full four quarters of this program. The program will also end in a quarter if either the quarterly DAS allocation is reached or an incidental catch TAC specified below (see Section 5.3.3) is reached.

Rationale: DAS are reduced for the first quarter to 500 DAS to reduce the risk that the program will increase mortality on GB cod, GB yellowtail flounder, and GB winter flounder by vessels targeting healthy groundfish stocks. This measure is consistent with the measures recently adopted by the Council in FW 42.

DAS Counting

For the Regular B DAS Program, Regular B DAS will be charged at the rate of a full 24 hours for each calendar day fished.

Example:

a. A vessel fishing a trip of less than 24 hours on 1 calendar day is charged a full 24 hours of Regular B DAS.
b. A vessel fishing a trip of 26 hours on 2 calendar days is charged a full 48 hours of Regular DAS.
c. A vessel that leaves 1 minute before midnight and fishes for 1 minute after midnight (i.e., fishing for 2 minutes on 2 different calendar days), is charged 48 hours of Regular DAS.

Rationale: This method of counting DAS as a full calendar day is consistent with how the Council previously implemented this program, and is intended to minimize the incidental catch of stocks of concern. It also simplifies administration of the program, removing any requirement for a modified running clock and the subsequent adjustment to possession limits.

DAS Flipping

When a vessel begins its trip, it must notify NMFS that it is fishing in the Regular B DAS Program. If a vessel exceeds the landing limit for a stock of concern (see Section 5.3.4), the operator must retain the excess catch and "flip" its DAS use to Category A DAS. Once the DAS is "flipped" and the vessel is on a Category A DAS, it must comply with the landing limits that apply to Category A DAS. Category A DAS use is counted as under existing regulations, and not on a calendar-day basis (i.e., at a rate of 1.4:1 under this action).

Rationale: "Flipping" is fundamental to this program, providing an opportunity for vessels to change to a Category A DAS should they unexpectedly catch more than an incidental catch limit. Without "flipping," the only alternative would be for a vessel to discard the overage.

The number of Category B (Regular) DAS that can be used on a trip cannot exceed the number of Category A DAS a vessel has at the start of the trip.

Under this preferred alternative, the number of Regular B DAS that would be allowed to be used on a trip would be limited to the number of Category A DAS that the vessel has at the start of the trip divided by 1.4.

Example: If a vessel plans a trip under the Regular B DAS Program and has 5 Category A DAS available, the maximum number of Regular B DAS that the vessel could fish on that trip under the Regular B DAS Program would be 5 divided by 1.4, or 3.6 days. Therefore if the vessel were fishing under a Regular B DAS for 3.6 days, but was required to flip, the balance of Category A DAS would be sufficient to account for the amount of time fished (3.6 days fished time 1.4 DAS = 5 Category A DAS).

However, to ensure that there is an adequate amount of Category A DAS available should the vessel be required to "flip" its DAS, it is advisable that a vessel owner, when planning a Regular B DAS Program trip, fish a lower number of Regular B DAS than the required

maximum number. In the above example, if the vessel had a Category A DAS balance of 5, and fished 3.6 days of Regular B DAS prior to flipping, the amount of Category A DAS necessary to account for the time already fished would be available, but no additional Category DAS would be available for use between the time of flipping and the end of the trip. The proposed requirement would allow a vessel owner the potential to maximize the use of Regular B DAS.

Rationale: This provision ensures that a vessel will have enough Category A DAS available, should a DAS flip be required at any time during the trip.

5.3.4 Incidental Catch TACs

Incidental catch TACs were first adopted in FW 40A in order to limit the catch of stocks of concern while vessels were using Category B DAS. As a result of groundfish assessments completed under GARM II, FW 42 is proposing modifications to the number of incidental catch TACs, as well as the size and allocation of such incidental catch TACs. FW 42 proposes two new stocks of concern (GB yellowtail flounder and GB winter flounder are either overfished and/or overfishing is occurring) and the creation of incidental catch TACs for these two stocks in order to limit the impact of the use of Category B DAS on such stocks. Secondly, FW 42 is proposing modification of the size of the incidental catch TACs with respect to the target TACs from which they are calculated (see Table 3 below).

Because FW 42 is delayed, the definition of the two new stocks of concern, the creation of two new incidental catch TACs, and the reallocation of incidental catch TACs among special programs are proposed in this action. If the incidental TACs are not established under this emergency, the use of Regular B DAS during the time this action is in place would undermine the achievement of the goals of the FMP. If a change in the allocation of catch TACs among special programs is not proposed by this action, the special programs would be inconsistent with the intent of the Council. The programs that would be impacted by these proposed TACs are the Regular B DAS Pilot Program and potentially, the Eastern U.S./Canada Haddock SAP Program if FW 42 implementation is delayed beyond August 1. Although this action would not impact many stocks of concern, in order to simplify the process of TAC specification for the 2006 fishing year, as well as reduce confusion in the industry, this action defines the incidental catch TACs for all stocks of concern, and allocates TAC among programs consistent with FW 42 proposals. Note, this action does not specify values for TACs for the 2006 fishing year. A separate action is being developed by NMFS which would specify all TACs for the FMP for the 2006 fishing year (Incidental Catch TACs, Target TACs, and U.S./Canada Management Area TACs for GB).

Species	Percentage of Total TAC
GB cod	2
GOM cod	1
GB yellowtail flounder	2
CC/GOM yellowtail flounder	1
SNE/MA yellowtail flounder	1
American plaice	5
Witch flounder	5
SNE/MA winter flounder	1
GB winter flounder	2
White hake	2

Table 3: Proposed incidental catch TACs for groundfish stocks of concern (mt). TACs shown are in metric tons, live weight.

In accordance with FW 42, this action proposes that the incidental catch TACs are distributed among special programs as indicated in Table 4.

	Category B (Regular) DAS Program	CAI Hook Gear SAP	Eastern U.S./Canada Haddock SAP
GOM cod	100 %	NA	NA
GB cod	50%	16%	34%
CC/GOM yellowtail flounder	100%	NA	NA
American plaice	100%	NA	NA
White Hake	100%	NA	NA
SNE/MA yellowtail flounder	100%	NA	NA
Witch Flounder	100%	NA	NA
GB Yellowtail Flounder	50%	NA	50%
GB Winter Flounder	50%	NA	50%

Table 4: Proposed allocation of incidental catch TACs for stocks of concern allocated to Category B DAS programs (shown as percentage of the incidental catch TAC).

The use of Category B (Regular) DAS, under the Regular B DAS Program and outside of a SAP, will be constrained by a "hard" incidental catch TAC for stocks of concern. All catches (landings and discards) of a stock of concern from a Regular B DAS used under this program will be applied to this TAC. Incidental catch TACs will be allocated to each quarter according to the following percentages: 13 percent for the first quarter of the fishing year and 29 percent for the remaining quarters. When projections indicate the TAC for a stock of concern will be caught in a quarter, the use of Regular B DAS in the U.S./Canada Management Area will not be allowed.

Rationale: The measures above reduce the likelihood that Amendment 13 mortality objectives will be threatened by vessels using Regular B DAS to target healthy stocks

under this Secretarial action. Definition of all incidental TACs through this action simplifies the process, and would be consistent with FW 42.

5.3.5 Gear requirements

Trawl vessels participating in the Regular B DAS Program must use a haddock separator trawl, as defined by Amendment 13, and will be limited to 500 lb of flounders (all species combined), monkfish (live weight), and skates. Possession of lobsters is prohibited.

Rationale: Based on recent assessments, the most appropriate target stock for the Regular B DAS Program is GB haddock and pollock. The separator trawl requirement will reduce the risk that vessels fishing in this program will catch cod, yellowtail flounder, winter flounder, and other stocks of concern, minimizing discards and increasing the chances that incidental catch TACs will not be caught before the end of the quarter, which would result in prematurely closing the program for a specific stock area. When improperly configured, the net catches cod, flounders, and other bottom-dwelling species. The restriction on possession of flounder, monkfish, skates, and lobsters increases the incentive for fishermen to configure the net properly, since only small amounts of flounders, monkfish, and skates can be landed when use of the haddock separator trawl is required. The small possession limits are designed to allow retention of small amounts of these species, should they be caught with a properly configured net, thus reducing regulatory discards. These measures are consistent with the measures recently adopted by the Council in FW 42.

5.3.6 Landing limits:

1. Possession of flounders (all species, combined), monkfish (whole weight), and skates is limited to 500 lb each. Possession of lobsters is prohibited.
2. The landing limit for Atlantic halibut is one fish of legal size per trip. This landing limit was previously established under a previous action and is continued through this action.
3. The landing limit for all other stocks of concern is 100 lb/DAS (see Table 5). The landing limit for all other groundfish stock (i.e., those not listed as a groundfish stock of concern) is the same as under the current regulations.
4. A vessel cannot discard legal sized groundfish while fishing on a Regular B DAS in this program. If a vessel exceeds the landing limit for a stock of concern, the DAS must be "flipped" to a Category A DAS. Once the DAS is "flipped," the vessel must comply with the landing limits for Category A DAS.

   Example: A vessel begins a planned 12-hour trip using Category B DAS on GB. The vessel catches 1,200 lb of legal-sized GB cod in one tow. All legal-sized GB cod must be retained while fishing on a Category B DAS. Since the vessel will only be underway for 12 hours, the vessel "flips" to a Category A DAS. It must discard 200 lb of GB cod to comply with the

Category A DAS landing limit of 1,000 lb/DAS. Alternatively, the vessel could remain underway longer to account for the cod overage.

5. The current monkfish incidental catch limit would apply on vessels issued a limited access monkfish Category C or D permit and fishing on a Regular B DAS under this program. In the NFMA, that limit (based on tail weight) is 400 lb per DAS, or 50-percent of the total weight of fish on board, whichever is less. In the SFMA, that limit is 50 lb (tail weight)/DAS (see Table 6 for the appropriate trip limits). Discarding of legal sized monkfish while participating in this program will be prohibited.

Groundfish Stocks of Concern	Landing Limit
GB cod	100 lb per DAS; 1,000 lb per trip
American Plaice	100 lb per DAS; 1,000 lb per trip
White Hake	100 lb per DAS; 1,000 lb per trip
Witch Flounder	100 lb per DAS; 1,000 lb per trip
GB Yellowtail Flounder	100 lb per DAS; 1,000 lb per trip
GB Winter Flounder	100 lb per DAS; 1,000 lb per trip
Atlantic Halibut	1 fish per trip

Table 5: Regular B DAS Program landing limits for groundfish stocks of concern affected by this action.

Permit Category	DAS Program	Area	Gear	Trip Limit (tail weight per DAS)
C or D	Multispecies (A DAS only)	NFMA	All Gear	No trip limit
C or D	Multispecies (B-Regular DAS)	NFMA	All gear	400 lb, or 50% of the total weight of fish on board (all weight is converted to tail weight) whichever is less.
C, D, or F	Multispecies (A DAS only)	SFMA	Trawl	300 lb
C, D, or F	Multispecies (A DAS only)	SFMA	Non-trawl	50 lb
C, D, or F	Multispecies (B-Regular DAS)	SFMA	All Gear	50 lb
E, F, G, or H	Multispecies (A or B-Regular DAS)	NFMA	All Gear	400 lb, or 50% of the total weight of fish on board (all weight is converted to tail weight) whichever is less.
E, G, or H	Multispecies (A or B-Regular DAS)	SFMA	All Gear	50 lb

Table 6: Monkfish catch limits on NE multispecies DAS vessels participating in the Regular B DAS Program.

Rationale: The very low landing/possession limits are meant to encourage fishermen to avoid catching groundfish stocks of concern and as an incentive to fish with a properly configured haddock separator trawl. As a further incentive, discards of legal-sized fish are prohibited, and vessels must immediately "flip" the DAS if the catch limit is exceeded. Once flipped to a Category A DAS, a vessel must comply with landing restrictions for Category A DAS. When properly used, the haddock separator trawl has proven effective at reducing the catch of cod, flounders, and other species, while having little impact on the catch of haddock. The monkfish incidental catch limits for Category

C and D Monkfish vessels are intended to prevent targeting monkfish under the Regular B DAS Program.

5.3.7 Catch Monitoring

In order to accurately monitor the TACs associated with the Regular B DAS Program, vessels must comply with the following provisions:

1. All vessels using a Regular B DAS must use an approved VMS.
2. Vessel operators must provide the observer program 3 days (72 hours before departure) advance notice of a Regular B DAS Program trip.
3. Vessels beginning a trip as a Regular B DAS Program trip must submit daily catch reports via VMS, whether a trip is completed as a Regular B DAS trip or not.

The targeted level of observer coverage will be sufficient to ensure the program is working as designed.

Rationale: These requirements are necessary to monitor the program and enforce the incidental catch TACs. The VMS requirement will facilitate the use of the flipping provision – vessels can communicate the change before entering port, and enforcement agents can verify the catch upon arrival. The reporting requirements will enable NMFS to closely monitor the small incidental catch TACs of this program and more accurately predict when they will be caught. Observer coverage is necessary to verify the catch rates for vessels on a Regular B DAS. The no-discard provision will encourage fishermen to fish selectively so that they can continue to use Regular B DAS. These measures are consistent with those recently adopted by the Council in FW 42.

5.3.8 Program Monitoring

In addition to authority to end the program when the DAS limits are reached, or when an incidental catch TAC is expected to be caught, the Regional Administrator can end the program during a quarter or fishing year if necessary to achieve the objectives of the FMP. Reasons for terminating the program could include, but are not limited to:

- Inability to constrain catches to the incidental catch TACs;
- Evidence of excessive discarding;
- A significant difference (based on a significance level of 0.1) in flipping rates between observed and unobserved trips; and/or
- Any other reason that may jeopardize the objectives of the FMP.

Rationale: The authority to end the program is necessary to ensure that additional F from this program does not jeopardize the rebuilding programs established under Amendment 13.

5.4 DAS Leasing Program

The DAS Leasing Program allows vessels to temporarily exchange groundfish Category A DAS. The DAS Leasing Program is intended to provide flexibility for fishermen to adapt to the proposed measures in this action. Significant DAS reductions may make some vessels unprofitable. The DAS Leasing Program allows for the transfer of DAS so that vessels that decide not to fish for groundfish can earn some revenue from their DAS by transferring them, on a short-term basis, to other vessels that will fish them. Because of concerns over how these transfers may change the character of the fishery, transfers between vessels of different sizes are limited to the permit upgrade restrictions.

The following elements form the basis for a leasing program and are continued unchanged, as implemented by Amendment 13:

- DAS could be leased for only 1 fishing year;
- Vessels may lease DAS from more than one other vessel (conversely vessels may lease DAS to more than one vessel);
- DAS may be leased on a unit basis, where a unit is defined as being 1 DAS or 24-hour increment;
- Leased DAS must be used in the same fishing year they are acquired;
- Leased DAS may not be used as part of any carry-over;
- DAS available for leasing shall be limited to only Category A DAS;
- Lease agreements must be approved by the Regional Administrator, NMFS;
- The history of DAS use remains with the permit that "owns" the DAS (that is, the lessee retains the DAS history of any DAS leased to another vessel–even after the DAS are leased); any landings associated with leased DAS remain with the permit that lands the fish. If a vessel does not use all the DAS that are allocated to it and that it leases, leased DAS are considered used first;
- DAS cannot be sub-leased;
- A vessel can lease the number of DAS equal to its allocation for fishing year 2001 (not including carry-over DAS);
- A lessor may not lease DAS to any vessel with a main engine horsepower rating that is 20 percent or greater than that of the lessee, and may not lease DAS to any vessel that is 10 percent or greater than that of the lessee vessel's length overall, based on the permit baseline as of January 29, 2004 (note that these restrictions do allow a larger vessel to lease DAS to a smaller vessel).
- Any permit in confirmation of permit history cannot lease DAS to an active permit holder;
- Vessels that possess a Category C or D monkfish permit must use a NE multispecies DAS when using a monkfish DAS. A NE multispecies permit holder that leases DAS to another vessel should be aware that, if the number of NE multispecies DAS retained (not leased) is less than the number of monkfish DAS allocated, the permit holder may not be able to use all his monkfish DAS while fishing with a Category C or D monkfish permit.

Example:	Original DAS allocation:	40 multispecies/40 monkfish
	DAS after leasing:	20 multispecies/40 monkfish
	Monkfish DAS that can be used:	20 monkfish

Rationale: DAS leasing could result in a net increase in F if DAS are transferred across disparate platforms. This measure limits lease agreements to vessels that meet specified vessel size categories, and is consistent with restrictions on upgrading a vessel, with the exception that the tonnage restrictions are not adopted to facilitate administration of the program. The prohibition on subleasing is intended to simplify administration of the program. The cap on the number of DAS that may be leased reduces the possibility that a vessel will accumulate excess DAS. The history provisions standardize the treatment of DAS and landings history in order to simplify administration of the program. Allowing a vessel that "owns" the DAS to retain the history of those DAS will alleviate the concern that leasing out a DAS will affect future decisions, if any, that are based on DAS history. Considering leased DAS as used first reduces the possibility that a lessor will acquire DAS in excess of his ability to use them. The permit history provision slows the re-activation of effort that is frozen in the permit history category.

5.5 Eastern U.S./Canada Haddock SAP

5.5.1 Delayed Start Date

This measure would delay the opening of the SAP from the start of the fishing year to August 1.

Rationale: Cod catch rates in this SAP were higher than expected during May, June, and July 2004. This measure delays the opening of the SAP so that the expected lower cod catch rates will allow more of the haddock TAC to be harvested, while reducing the catch (and bycatch) of cod. This measure is based on recommendations of the Groundfish Advisory Panel that suggested delaying the start date of this SAP to August 1, due to concerns over lower price for haddock, poor condition of the fish due to recent spawning, and to provide further protection for GB cod and GB yellowtail flounder by eliminating bycatch of these species under this SAP during these months. This measure is consistent with the measure recently adopted by the Council in FW 42.

5.5.2 Incidental Catch TAC

As specified above in Section 5.3.3, incidental catch TACs for stocks of concern are expected to be implemented through a concurrent Agency action. A portion of the incidental catch TACs for GB yellowtail flounder and GB winter flounder is specified for the Eastern U.S./Canada Haddock SAP. Once this TAC is caught, the use of B (regular or reserve) DAS in this SAP is prohibited.

Rationale: The use of B DAS is considered an additional source of mortality. As a result, incidental catch TACs limit additional mortality resulting from the use of B DAS in a SAP. The incidental catch TACs for GB yellowtail flounder and GB winter flounder will prevent this SAP from threatening mortality objectives for these stocks.

5.5.3 Trip Limits

Vessels participating in the Eastern U.S./Canada Area Haddock SAP would be subject to the following possession limits: Possession of flounders (all species, combined), monkfish (whole weight), and skates is limited to 500 lb each; possession of lobsters is prohibited.

Rationale: The very low landing/possession limits are meant to encourage fishermen to develop selective ways of fishing for healthy stocks while using a haddock separator trawl. When properly used, the haddock separator trawl has proven effective at reducing the catch of cod, flounders, and other species, while having little impact on the catch of haddock.

5.6 Combined Trips to the Eastern U.S./Canada Area

A vessel that begins a fishing trip in the Eastern U.S./Canada Area may choose to fish in other areas on the same trip. If a vessel chooses to fish outside of the Eastern U.S./Canada Area, the operator must notify NMFS via VMS either prior to leaving the dock or prior to leaving the Eastern U.S./Canada Area on its return to port and must comply with the most restrictive possession limits for the areas fished. All cod and haddock caught on the entire trip will be applied against the Eastern U.S./Canada Area TACs for these species, all yellowtail flounder will be applied to the overall U.S./Canada Management Area TAC for this species, and the vessel will be charged Category A DAS for the entire trip and will not receive any steaming time credit. The vessel must comply with reporting requirements for the Eastern U.S./Canada Area for the entire trip.

A vessel is prohibited from fishing outside of the Eastern U.S./Canada Area on the same trip if it has already exceeded the possession limits for a particular species outside of the Eastern U.S./Canada Area.

> *Example:* If a vessel fishing in the Eastern U.S./Canada Area in June has already caught 500 lb of GB yellowtail flounder, the vessel operator would be prohibited from fishing in the SNE/MA RMA and the Eastern U.S./Canada Area on the same trip because the vessel has already exceeded the June SNE/MA yellowtail flounder possession limit of 250 lb/trip.

Rationale: This measure addresses a safety concern that arose from the Amendment 13 restriction that vessels fishing in the Eastern U.S./Canada Area cannot fish in any other area. If worsening weather is forecast, the vessel captain currently has only two choices: End the trip early, or continue to fish in the Eastern U.S./Canada Area. The vessel operator cannot "hedge his bets" by choosing to fish closer to shore. The risk is that fishermen may keep fishing in the area until it is too late to evade a rapidly advancing storm front. This measure would allow fishermen more flexibility in responding to the circumstances. In order to prevent misreporting of cod and haddock caught in the Eastern U.S./Canada Area, all cod and haddock caught on the trip is applied to the TAC for that area. This is a conservative approach that will help ensure the TACs are not exceeded. Prohibiting a vessel from fishing outside of the Eastern U.S./Canada Area on

the same trip if it has exceeded the possession limit for a specific stock is necessary to properly enforce the possession limit provisions of the FMP. This measure is consistent with the measure recently adopted by the Council in FW 42.

5.7 Recreational Measures

Private recreational vessels and vessels fishing under the charter/party regulations of the FMP are prohibited from possessing or retaining any cod from the GOM RMA from November 1 – March 31. The minimum size for cod in the GOM is increased to 24 inches. Private recreational and charter/party vessels would be allowed to transit the GOM RMA with cod caught from outside this area, provided all bait and hooks are removed from fishing rods and that all cod are stored in coolers or ice chests. These storage requirements are intended to facilitate the enforceability of these recreational measures.

Rationale: These recreational measures are necessary to reduce F from the recreational sector by the 30 percent needed to bring GOM cod mortality in line with the target F for 2006, as part of the rebuilding program implemented by Amendment 13. These measures are consistent with the measures currently being proposed by the Council in FW 42.

6.0 Alternatives to the Preferred alternative

6.1 No Action

Under this alternative, the default measures specified in Amendment 13 to the FMP would go into effect on May 1, 2006. These measures include a revision of the definitions of Category A and B DAS and differential DAS counting for vessels operating in the SNE/MA RMA. Under the no action alternative, Category A DAS would be defined as 55 percent of the vessel's Amendment 13 used DAS baseline, while Category B DAS would be defined as 45 percent of a vessel's Amendment 13 used DAS baseline. Any DAS used in the SNE/MA RMA would be charged at a rate of 1.5:1. The DAS Leasing Program and the Regular B DAS Program would also expire under the no action alternative and the Eastern U.S./Canada Area Haddock SAP Program would open on May 1, 2006, but expire on November 18, 2006. The GOM cod trip limit would remain at 800 lb/DAS up to 4,000 lb/trip; the CC/GOM yellowtail trip limit would remain at 750 lb/DAS up to 3,000 lb/trip from December through March, June through September, and 250 lb/trip during April and May, along with October and November. The SNE/MA yellowtail flounder trip limit would remain at 750 lb/DAS up to 3,000 lb/trip from July through February and 250 lb/trip from March through June. There would not be a possession limit for GB yellowtail flounder. Finally, vessels would not be allowed to fish inside and outside of the Eastern U.S./Canada Area on the same trip under the No Action alternative.

6.2 Considered but Rejected

6.2.1 Area Closures

Four options for area closures were considered for this Secretarial action, but were rejected because they did not meet the purpose and need for this action. Closure options considered include:

1. Close the entire GOM RMA;
2. Close the inshore 30' squares 124, 125, and 133;
3. Close the inshore GOM statistical areas 513 and 514;
4. Extend the area closed by GOM Rolling Closure Area III for May, to the GOM Rolling Closure Area IV in June.

These areas would reduce F on GOM cod, but they would not be able to provide the necessary immediate reductions in F for the other stocks requiring effort reductions by May 1, 2006. These closures could force fishing effort to move into other RMAs, resulting in increased fishing effort on those stocks. This would increase F on stocks such as SNE/MA yellowtail flounder and GB winter flounder that require F reductions for 2006. In addition, these closure areas would prohibit a majority of the fishing industry from operating in the GOM for the duration of the Secretarial action. Should the implementation of FW 42 be delayed further than anticipated, this could result in substantial economic and social impact to the fishing industry beyond that which is necessary to achieve the conservation objectives of this action. Further, it is unclear how much of an impact these closure options would have on the other stocks that do not need effort reductions (e.g., haddock, pollock, redfish, etc.), thereby potentially undermining efforts to allow vessels to target these healthy stocks to achieve OY for these stocks.

6.2.2 Hard TACs

This action also considered a hard TAC alternative for those species that required F reductions by May 1, 2006. It is anticipated that FW 42 would be implemented no later than August 1, 2006. Implementation of a hard-TAC alternative would be very difficult to administer and enforce. First, the current data collection mechanisms do not allow for the complete, real-time catch monitoring that would be necessary for a hard-TAC alternative. Implementation of real-time catch monitoring requirements would be complex and require additional analysis that would delay implementation of this action beyond May 1, 2006. Should a hard-TAC be achieved during the Secretarial action, the Secretary would be required to close relevant geographic areas regulated by that TAC. This would be very difficult during the anticipated short duration of this action and produce minimal benefits, given that FW 42 would likely reopen any such closed areas upon implementation. Further, FW 42 does not include any hard-TAC alternatives, making this Secretarial action inconsistent with the alternatives proposed in FW 42. Finally, implementing a hard TAC alternative would increase incentives to illegally discard fish, further straining current enforcement capacity and increasing the likelihood

that the Secretarial action would not be able to effectively reduce F for those stocks requiring an effort reduction.

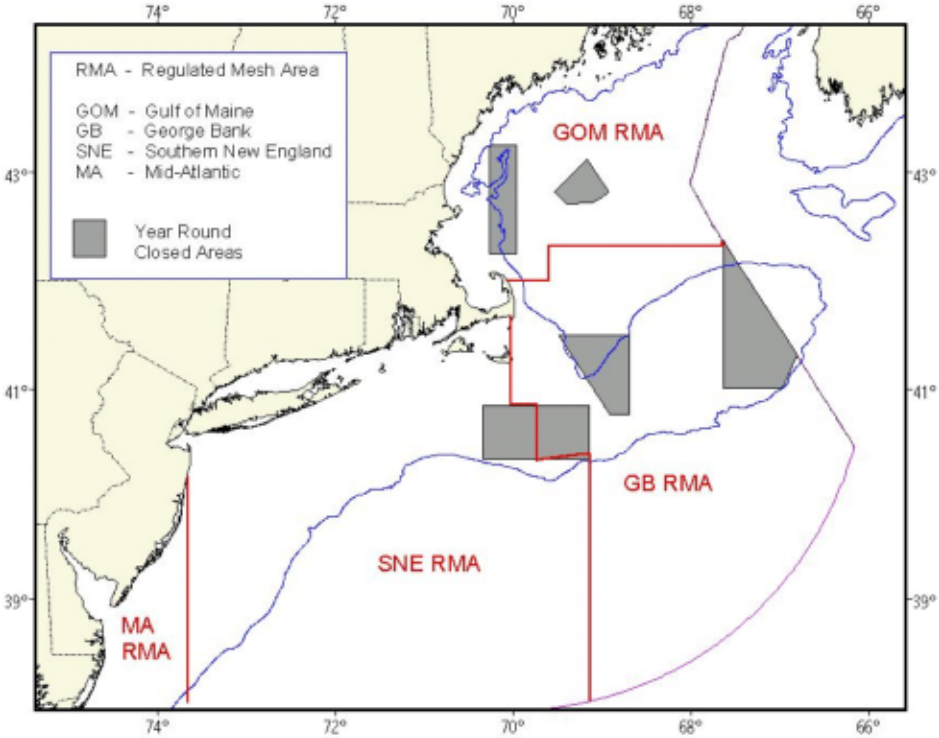
7.0 Affected Environment

The following section includes a brief description of the various resources and entities likely to be affected by the actions proposed by this action. This description borrows heavily from the affected environment sections of the Final Supplemental Environmental Impact Statement (FSEIS) prepared for Amendment 13 and the EA prepared for FW 40-B to the FMP (NEFMC 2003 and NEFMC 2005a, respectively). The affected environment information in these two NEFMC documents was extracted from a NOAA Technical Report which was available in draft form in 2003 and which will be completed in 2006 (Stevenson et al. 2004). There has been little change in the biological or physical components of the environment since the implementation of Amendment 13, other than changes in stock status. For additional information on the affected environment, the reader is encouraged to refer to the Amendment 13 FSEIS, which may be accessed through the internet at the following address: http://www.nefmc.org/nemulti/index.html. Although this section deals with the affected environment, it does not present the affects of the proposed management program. This section presents the baseline against which the alternatives are compared.

7.1 Physical Environment

The physical environment affected by the NE multispecies fishery includes waters off the coast of Maine through North Carolina out to the edge of the Exclusive Economic Zone (EEZ), or approximately 200 miles from shore, encompassing most of the continental slope out to a depth of 2,000 meters and a large area of even deeper water in the North Atlantic Ocean. A complete description of the continental shelf and slope environments of the Northeast Region can be found in Section 9.1.1 of Amendment 13. This area includes several distinct sub-regions that consist of a range of physical and oceanographic conditions. These sub-regions include the GOM, GB, SNE, the MA Bight, and the continental slope (NEFMC 2005a). For the purposes of managing the fishery and designing measures to specifically affect distinct portions of the NE multispecies complex, these sub-regions are grouped into RMAs, as depicted in Figure 2 below.

Figure 2: RMAs used to define management sub-regions of the NE multispecies fishery that closely resemble those defining the physical environment.



The GOM is a glacially-derived "enclosed coastal sea" bordered on the west by the coast of New England, on the east by Nova Scotia, and on the south by the shoaling waters of GB. It is comprised of a number of small banks and ledges separated by several deeper basins, resulting in a highly irregular topography and a variety of substrate types. Mud dominates the sediment types of this area – especially in deeper water – although areas of sand, gravel, and rocky bottom are also present (see Figure 3 below). Rocky ledges interspersed with muddy bottom are very common along the coast. This area is characterized by flux of relatively cold low-salinity water from the north and warmer higher-salinity water from the continental slope (NEFMC 2003). Ongoing research indicates that seasonal variation in salinity may affect primary productivity in the GOM (NEFMC 2005a). Extreme diurnal tides create strong coastal currents and vertical mixing, especially in eastern Maine, and the residual surface current along the coast flows to the southwest. Circulation patterns in offshore waters of the gulf are more complex and seasonally variable (NEFMC 2003)

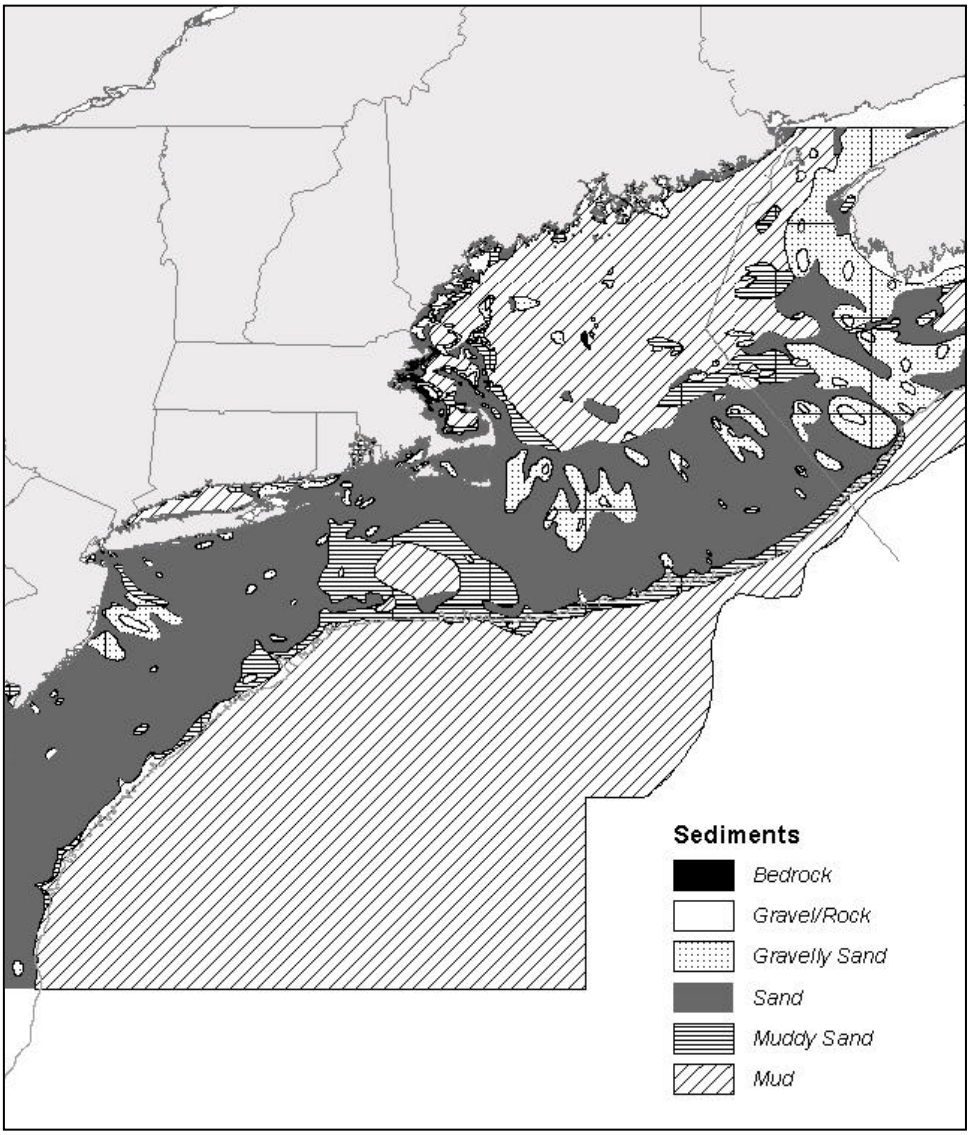
Georges Bank is a shallow (3-150 m depth), elongate (161 km wide by 322 km long) extension of the continental shelf. Bottom topography is diverse, with relatively flat shoals on the western portions of the bank, a gradual slope along the northern edge, and a series of deep canyons along the southern edge of the bank. The primary sediment is sand, with areas of gravel, gravelly sand, and rocky bottom (see Figure 3). There are high energy areas where sand is transported on a daily basis by tidal currents, and low energy areas affected only by storm currents. Oceanographic frontal systems occur between water masses from the GOM and GB. These water masses differ in temperature,

salinity, and nutrient concentration, and planktonic communities which influence productivity and may influence fish abundance and distribution. Currents on Georges Bank include a weak, persistent clockwise gyre around the bank, a strong semidiurnal tidal flow predominantly in a northwest and southeast direction, and very strong, intermittent storm-induced currents.

The SNE-MA Bight sub-region is comprised of sandy, relatively flat, gently sloping continental shelf from CC, MA to Cape Hatteras, NC. Sediment types in this area include mostly sand, with pockets of mud, muddy sand, gravelly sand, and gravel. A large area of mud and muddy sand is located on the outer continental shelf south of CC (see Figure 3). Shelf and slope waters of the MA Bight have a slow southwestward flow that is occasionally interrupted by warm core rings or meanders from the Gulf Stream (NEFMC 2003).

The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. Bottom sediments are fairly homogenous and composed of silt and clay, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom (NEFMC 2003). Further seaward, the seafloor gradually levels off, except for a chain of seamounts that rise to relatively near the surface. Four of these seamounts are inside the EEZ.

Figure 3: Map showing distribution of surficial sediments in the GOM, GB, and the MA Bight (Figure 221 of the Amendment 13 FSEIS (NEFMC 2003), modified from original map by Poppe *et al.* 1989).



7.2 Biological Environment

The biological environment for the NE multispecies fishery is described in Section 9.2 of Amendment 13 (NEFMC 2003). Life history and habitat characteristics of the stocks managed by this FMP can be found in the EFH series published in a NOAA Technical Memoranda and available at http://www.nefsc.noaa.gov/nefsc/habitat/efh/. This section describes stock status for the regulated groundfish stocks, which are the species most likely to be affected by the proposed management measures. Updated stock status information has been incorporated into the biological environment description below based on the results of GARM II (Mayo and Terceiro 2005).

7.2.1 Stock Status

7.2.1.1 Groundfish Stock Status

Section 3.1.6.1 of the Amendment 13 FSEIS defined the status determination criteria for each groundfish stock managed under the FMP. As discussed previously, a groundfish stock is considered overfished when a stock's SSB is determined to be below ½ SSB_{MSY} or its proxy, while overfishing is considered to be occurring when the F of a particular stock is greater than F_{MSY} (see Table 2 of Amendment 13). Numerical estimates of the status determination criteria for species targeted by this action are listed in Table 7 below.

Stock	Biomass Target (mt)	Biomass Threshold (1/2 SSB_{MSY}) (mt)	Maximum Fishing Mortality Threshold	Fishing Mortality Target	MSY (mt)
GOM Cod	82,800	41,400	0.23	0.17	16,600
CC/GOM Yellowtail Flounder	12,600	6,300	0.17	0.13	2,300
White hake	14,700	7,350	0.29	0.22	4,200
GB Yellowtail Flounder	58,800	29,400	0.25	0.19	12,900
GB Winter Flounder	9,400	4,700	0.32	0.24	3,000
SNE/MA Yellowtail Flounder	69,500	34,750	0.26	0.20	14,200

Table 7: Estimates of status determination criteria for the species targeted by this action as identified in Amendment 13 (adapted from NEFMC 2003).

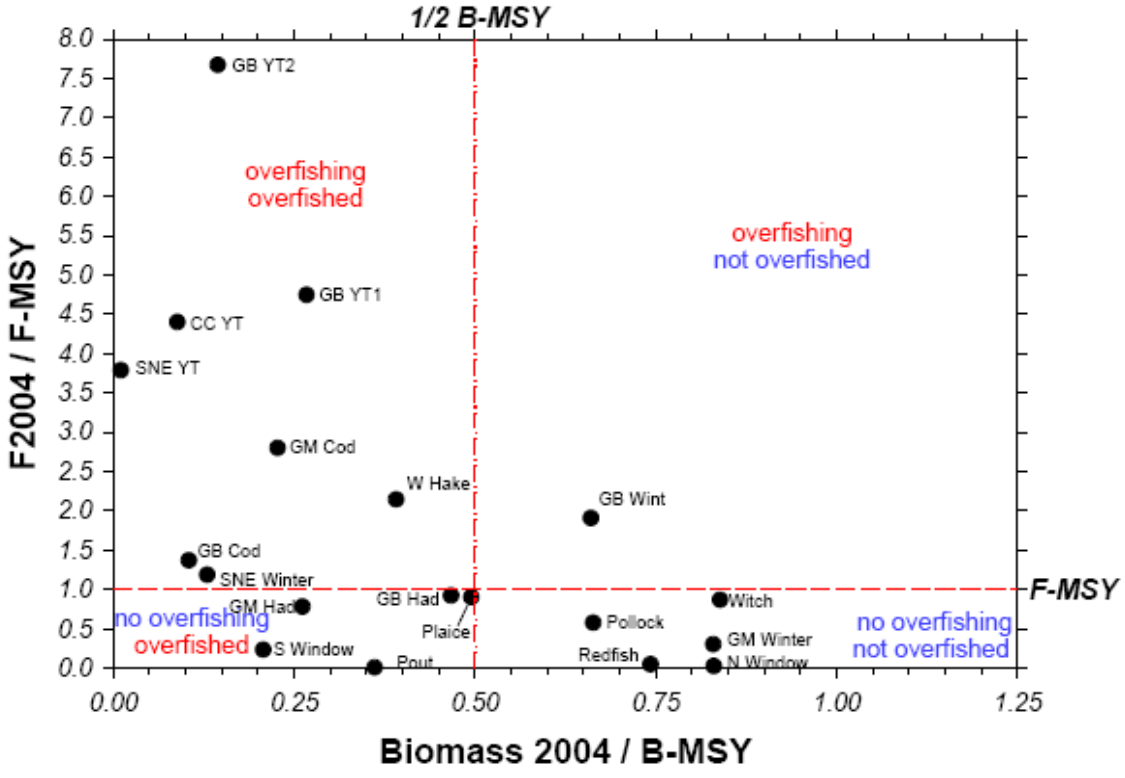
As described in Section 3.0 above, the status of groundfish stocks was most recently assessed as part of GARM II. Detailed information on the status of each groundfish stock is available in the GARM II document, which may be downloaded from: http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0513/. For GB yellowtail flounder, the GARM II document relied upon work conducted by the Transboundary Resource Assessment Committee (TRAC). The 2005 TRAC status report for GB yellowtail flounder may be downloaded from: http://www.mar.dfo-mpo.gc.ca/science/TRAC/TSRs/TSR_2005_03_E.pdf. See Table 8 below for a summary of the relevant information for groundfish stocks targeted by this action. Figure 4 depicts the status of all of the 18 groundfish stocks in 2004 relative to F_{MSY} and B_{MSY}.

Stock	F_{MSY}	F_{2004}	Biomass Threshold (1/2 SSB_{MSY}) (mt)	SSB_{2004} (mt)	Overfished	Overfishing
GOM Cod	0.23	0.58	41,400	20,549	Y	Y
CC/GOM Yellowtail Flounder	0.17	0.75	6,300	1,100	Y	Y
GB Cod	0.175	0.24	108,400	18,800	Y	Y
GB Yellowtail Flounder	0.25	1.19-1.75	29,400	8,500-15,700	Y	Y
GB Winter Flounder*	0.22	1.86	5,068	6,692	N	Y
SNE/MA Yellowtail Flounder	0.26	0.99	34,750	695	Y	Y

*The F_{2004} for GB winter flounder (1.86) actually represents the bias corrected ratio of F_{2004}/F_{MSY}.

Table 8: Current status of specific groundfish stocks targeted by this action with respect to the status determination criteria (adapted from NEFMC 2003 and Mayo and Terceiro 2005).

Figure 4: Status of 18 groundfish stocks in 2004 with respect to F_{MSY} and B_{MSY} (Mayo and Terceiro 2005). Note: GB YT1 and GB YT2 represent the results of two estimates of the status of the GB yellowtail flounder stock.



According to GARM II, GOM cod continues to be overfished and overfishing is still occurring. In 2004, SSB continued to be well below the biomass threshold, declining from 2003. Spawning stock biomass in 2004 (20,549 mt) was below that projected by Amendment 13, at just under 30,000 mt. Fishing mortality increased to 0.58 in 2004 and

is currently well above F_{MSY} (0.23) and the Amendment 13 projections (0.32 for 2004) (Mayo and Terceiro 2005). The 2003 year class is expected to be close to the size of the large 1987 year class and should help increase the SSB over the next few years. According to GARM II, a retrospective pattern in estimates of recruits could result in overestimating this year class and future estimates of biomass (Mayo and Terceiro 2005).

GARM II indicates that CC/GOM yellowtail flounder continues to be overfished and overfishing is still occurring. In 2004, SSB decreased to 1,100 mt, continuing a declining trend since the late 1990s. Spawning stock biomass in 2004 (1,100 mt) was substantially lower (approximately 25 percent lower) than that projected by Amendment 13 (approximately 4,000 mt). Fishing mortality in 2004 (0.75) decreased from that in 2003, but was still nearly three times higher than that projected by Amendment 13 (0.26). Although a retrospective pattern in F has been recently observed, analysis indicates improved consistency (Mayo and Terceiro 2005).

The results of GARM II indicate that GB cod is overfished and overfishing is still occurring. In 2004, SSB was estimated at 22,564 mt, a 25-percent decrease from 2001, but an increase from the record low in 1995. Fishing mortality on this species continues to decline from 1997 levels, despite a spike in 2001, to the lowest exploitation rate in the time series (Mayo and Terceiro 2005). However, F in 2004 (0.24) was still slightly higher than what was projected by Amendment 13 (0.21), despite lower catch levels than expected. GARM II indicates that recruitment of a strong 2003 year class is above the long-term average and should help increase SSB over the next few years.

For GB yellowtail flounder, the 2005 TRAC status report states that, while adult biomass has generally increased since the mid-1990's, biomass is still considered low (TMGC 2005). Recruitment continues to increase. However, F has also increased to above 1.0 in 2004, well above the 2006 target F of 0.25 and the Amendment 13 target F of 0.19. Two different models (base case and major change) were used to assess this stock and provide a bracketed range for the status of the stock (see points GB YT 1 and GB YT 2 in Figure 4 above). The base case model exhibited a retrospective pattern in which additional data have led to lower biomass estimates than previously calculated, while the major change model did not exhibit a retrospective pattern (Mayo and Terceiro 2005). Regardless of the model used, however, the TMGC concluded that reducing F is necessary for this stock. The TMCG recommends that a combined U.S. and Canadian TAC of 2,100 mt would provide a neutral risk of achieving the 2006 target F. A combined TAC of 3,000 – 3,500 mt would provide a low risk of exceeding the 2006 target F. Total allowable catch recommendations are derived from the base case model. Given the retrospective pattern exhibited by the base case model, catch quotas calculated directly from this approach for 2006 would be unlikely to achieve the F reference level. The TAC guidance for 2006 of 3,000 mt is based on adjusting the base case VPA TAC for 2006 by a factor of 0.65 to account for the past five year average retrospective of approximately 35-percent. The adjusted TAC from the base VPA is consistent with what would have been obtained from the major change VPA (TMGC 2005).

The GARM II results indicate that GB winter flounder is not overfished, but that overfishing is occurring. Mayo and Terceiro (2005) indicated that relative total biomass gradually increased since 1994, but has recently declined slightly. In 2004, relative biomass (6,692 mt) was above the biomass threshold of ½ SSB_{MSY} (4,700 mt). For calendar year 2004, F_{2004}/F_{MSY} was estimated to be 1.86, well above the Amendment 13

target ratio of 1.0. Once again, a retrospective pattern was observed, which suggested that absolute F was underestimated and absolute average biomass was overestimated during 2002-2004 (Mayo and Terceiro 2005).

SNE/MA yellowtail flounder data from GARM II indicate that this stock is overfished and that overfishing is still occurring. GARM II data indicate that SSB in 2004 declined to 695 mt, substantially lower than the Amendment 13 projected 2004 SSB of about 12,000 mt, and only 1 percent of SSB_{MSY}. Fishing mortality in 2004 (0.99) increased from 2003, and is more than twice that of the Amendment 13 target F for 2004 of 0.37.

7.2.1.2 Monkfish Stock Status

The following information was taken directly from the EA prepared for the measures proposed by the Council in FW 42 (NEFMC 2006). The Northeast Fisheries Science Center (NEFSC) held a monkfish stock assessment in the fall of 2004 (SAW 40). The data used in the 2004 assessment included NEFSC research survey data, data from the 2001 and 2004 Cooperative Monkfish Surveys, commercial fishery data from vessel trip reports, dealer landings records, and observer data. In summary, the Stock Assessment Review Committee concluded:

> *Based on existing reference points, the resource is not overfished in either stock management area (north or south). Fishing mortality rates (F) estimated from NEFSC and Cooperative survey data are currently not sufficiently reliable for evaluation of F with respect to the reference points.*

With respect to recruitment, the report noted evidence of increased recruitment in the NFMA during the 1990s, particularly for the 1999 year class. Conversely, the SAW 40 report noted that in the SFMA, recruitment appears to have fluctuated without trend during the 1990s. However, there are some indications that the 2002 year class in the SFMA may be above average.

In regards to estimates of stock biomass, the SAW 40 report noted that the current 3-year moving average (2001-2003) of the survey index was above $B_{threshold}$ in the NFMA and equivalent to $B_{threshold}$ in the SFMA. Due to the timing of data availability, the assessment was not able to use 2004 cooperative survey trawl efficiency analysis to calculate swept area biomass estimates. Assuming intermediate trawl efficiencies from the 2001 cooperative survey, however, and 2004 nominal tow distances, swept area biomass estimates for the NFMA from the 2004 cooperative survey were 25-percent less than the 2001 cooperative swept area biomass estimates for this survey, while swept area biomass estimates for the SFMA from the 2004 cooperative survey were 66-percent higher than the 2001 estimates.

<u>2005 Fall Survey Results</u>

The Monkfish FMP uses the NMFS fall bottom trawl survey to determine monkfish stock status (biomass) relative to management reference points. To smooth out year-to-year variability in the survey, a three-year running average is used to evaluate the stock against the MSY proxy target, and minimum biomass reference points. As shown in Table 9 both northern and southern stock components are below the minimum biomass

threshold, and are, therefore, overfished. This is a change of status from 2004 when both stocks were not overfished.

kg/tow	2000	2001	2002	2003	2004	2005	3-yr. Ave.	Bthreshold	Btarget
NFMA	2.495	2.052	2.103	1.925	0.638	1.078	1.214	1.25	2.5
SFMA	0.477	0.708	1.253	0.828	0.742	0.765	0.778	0.93	1.86

Table 9: 2000 – 2005 NMFS autumn bottom trawl survey indices of monkfish abundance and biomass reference points.

Framework 2, adopted in 2003, established a method for evaluating on an annual basis the rebuilding progress of the fishery. That method compares the three-year running average of the biomass index to annual biomass targets which are ten equal increments between the 1999 observed value (at the start of the 10-year rebuilding program) and the 2009 target (B_{target}). The relationship of the observed 3-year average to the annual target value is applied to the previous year's landings to set target TACs for the upcoming year. The annual targets and the 1999-2005 observed values are shown in Figure 5 and Figure 6 for the NFMA and SFMA, respectively. The northern and southern stocks are approximately 34 percent and 40 percent below their 2005 targets.

Figure 5: NFMA biomass index (2005 three-year running average) relative to annual rebuilding targets.

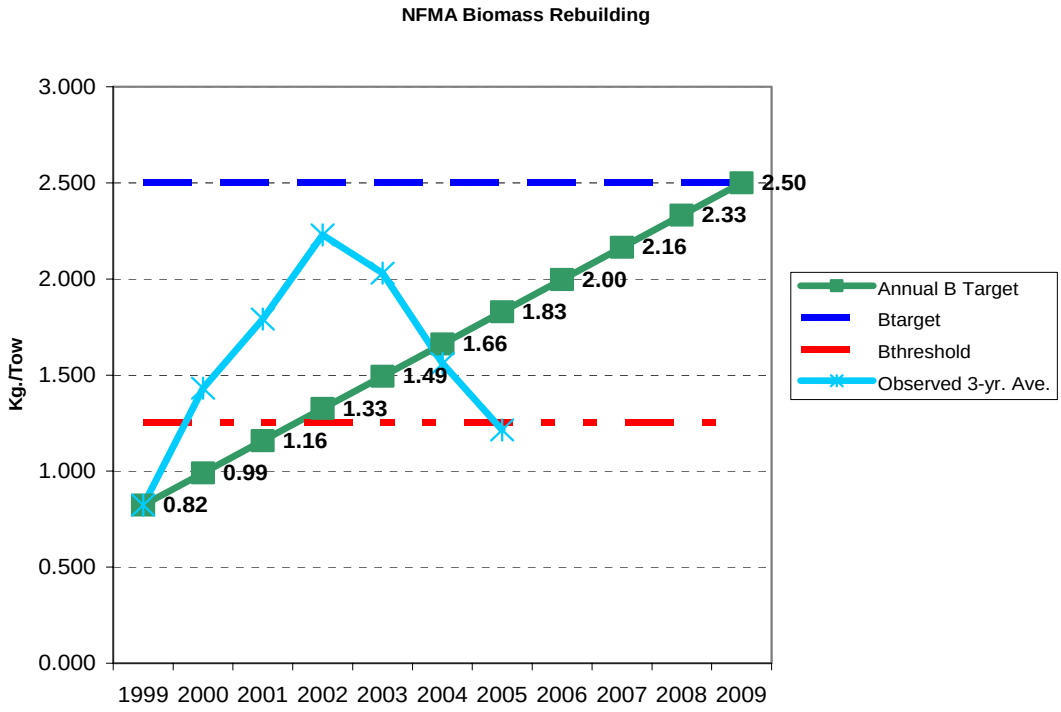
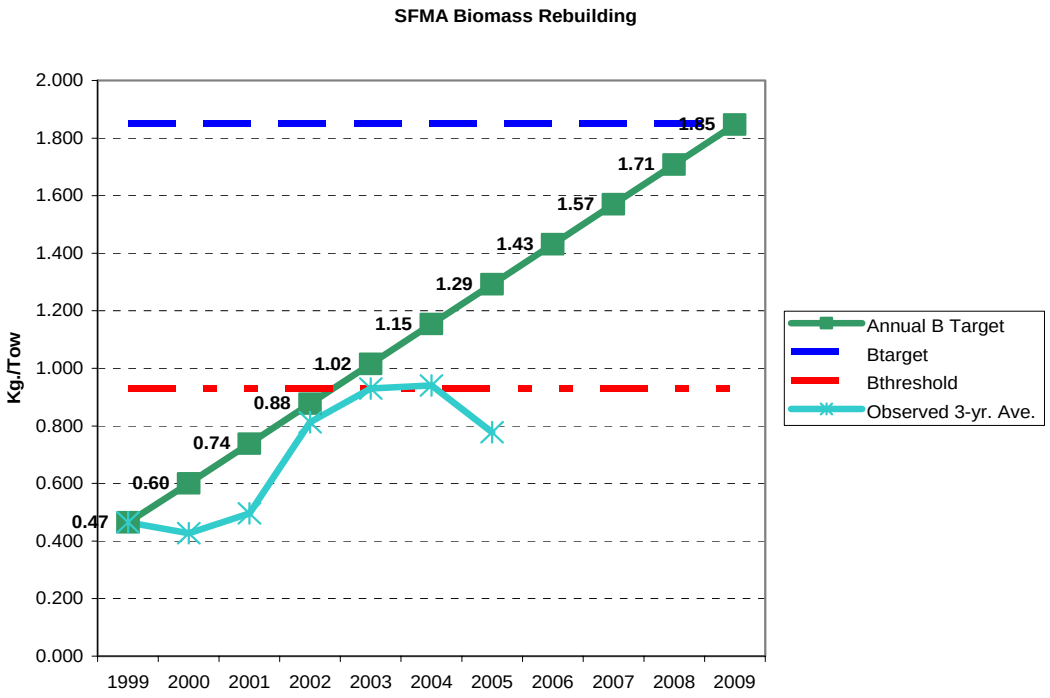


Figure 6: SFMA biomass index (2005 three-year running average) relative to annual rebuilding targets.

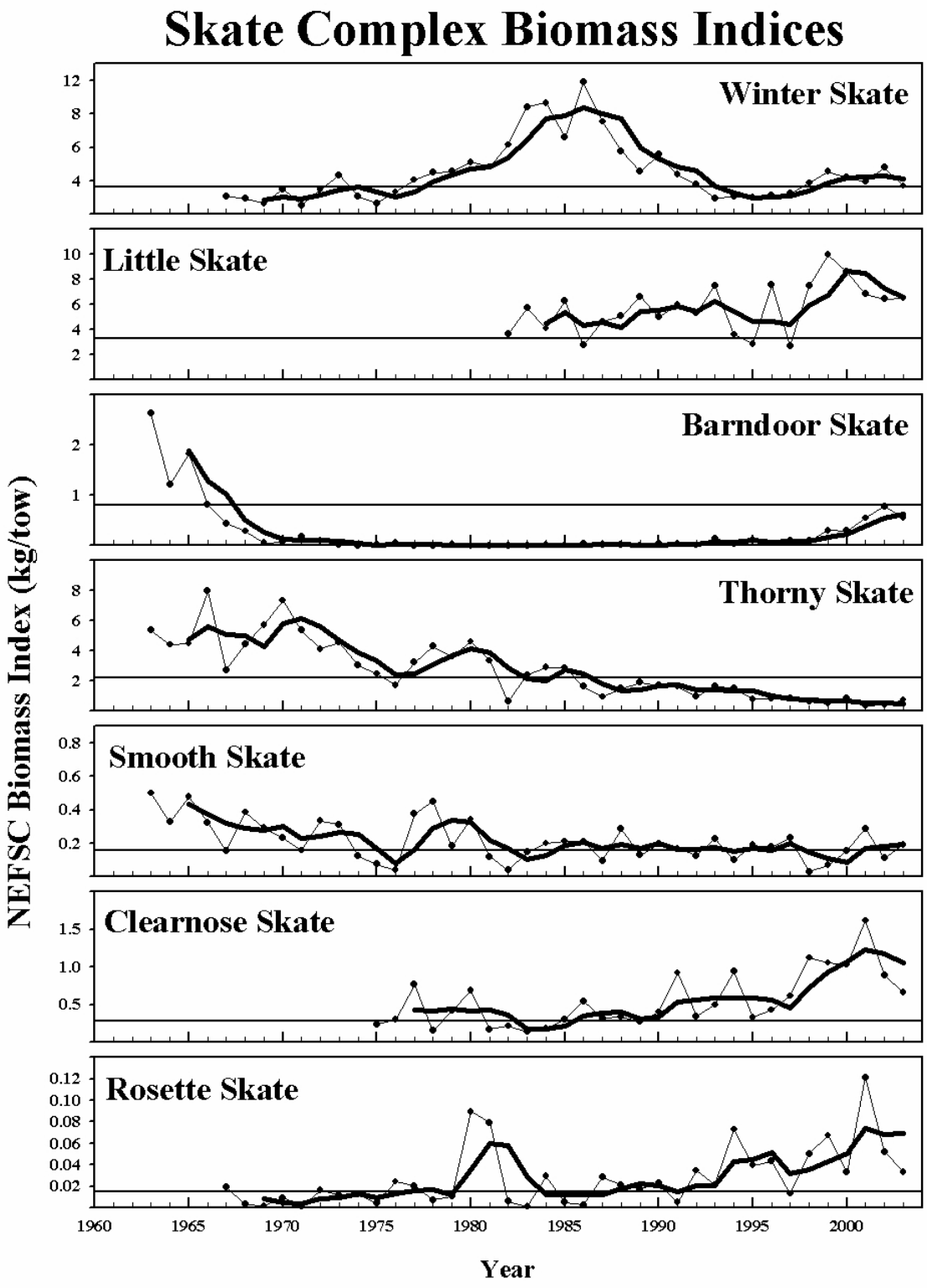


7.2.1.3 Skates Stock Status

The following information was taken directly from the EA prepared for the measures proposed by the Council in FW 42 (NEFMC 2006). The Category B (regular) DAS Pilot Program may be used by vessels to target several species of skates, which are managed by the Skate Fishery Management Plan. Skate life history and habitat characteristics are also described in an EFH source document available at http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

Figure 7 summarizes the status of seven skate species. Prior to the implementation of the Skate FMP, skate landings and bycatch were not reported by species, and 99 percent of skates landed were reported as "unclassified". Furthermore, because skates were not formally incorporated into a federal FMP, the fishery information was incomplete. Therefore, the benchmark assessment completed in 1999 concluded that there were insufficient data on age and growth to determine F rates or F reference points for most of the seven skate species (excluding winter and little skate). Therefore, the Skate FMP established overfishing definitions based on a percentage decline in the NEFSC trawl survey. The overfishing definitions vary for each species, but in general they are based on the three-year moving average of the survey mean weight per tow. The horizontal line for each species that is shown in Figure 7 represents the minimum biomass threshold (a stock is overfished below this line).

Figure 7: Status of seven skate species.



7.2.2 Habitat

A full description of the biological habitat features of the NE Region is found in Section 9.3 of Amendment 13 (NEFMC 2003). Physical habitat characteristics of the region are described in detail in Section 9.1.1 of Amendment 13, and in summary form in Section 7.1 of this document. A more succinct description of the biological environment affected by this action is offered in Section 6.2.3 of FW 40B (NEFMC 2005a). This document is available from: http://www.nefmc.org/nemulti/index.html. Seven benthic invertebrate assemblages have been identified in the area comprised by the GOM RMA. Four benthic invertebrate assemblages have been identified on GB, along with common epifauna in several different sedimentary provinces. Invertebrate species dominating the GOM assemblages include mollusks, annelids, crustaceans, echinoderms and other organisms. Benthic fauna found on GB include sessile organisms such as tube worms and brachiopods and free-living organisms such as amphipods, crustaceans, and polychaetes. Framework Adjustment 40B (NEFMC 2005a) also includes information on the demersal fish assemblages found in the GOM and on GB. Fish species assemblages on GB are primarily defined by changes in depth and salinity. Along with high levels of primary productivity, GB has been historically characterized by high levels of fish production. Three broad faunal zones related to water depth and sediment type were identified for the MA RMA. The primary factors influencing the distribution of fish species in the MA RMA were latitude and depth. The boundaries between fish assemblages were generally defined by changes in water temperature and depth (NEFMC 2005a).

7.2.3 Gear Effects

The primary gear types utilized in the NE multispecies fishery are otter trawls, sink gillnets, bottom longlines, and hook gear. The predominant gear used in the fishery as a whole is the otter trawl. A detailed description of these gears can be found in Section 9.3.1.2 of Amendment 13 (NEFMC 2003).

In accordance with the Sustainable Fisheries Act (SFA), Section 9.3.1.2 of Volume II of the Amendment 13 FSEIS contains an extensive discussion of the effects on fishing gear on essential fish habitat, and Section 9.3.1.8.4.2 contains a discussion of the potential adverse impacts of bottom trawls and dredges. Framework Adjustment 40B contains conclusions regarding the types of habitat modifications caused by trawls and dredges, as noted by a National Research Council Report (NRC 2002). The following summarizes the major conclusions of this report:

1. Trawling and dredging reduce habitat complexity;
2. Repeated trawling and dredging result in discernable changes in benthic communities;
3. Bottom trawling reduces the productivity of benthic habitats; and
4. Fauna that live in low natural disturbance regimes are generally more vulnerable to fishing gear disturbance.

A report by Morgan and Chuenpagdee (2003) on the effect of ten different commercial fishing gears on marine ecosystems in U.S. waters concluded that bottom

trawls have very high habitat impacts, bottom gillnets have low to medium impact, and bottom longlines have low impacts.

7.3 Endangered and Other Protected Species

Amendment 13 to the FMP contains a complete description of the endangered species and marine mammals found in the habitats in areas where the groundfish fishery occurs (Section 9.2.2). The Amendment 13 analysis lists protected species that are not likely to be affected by the FMP, as well as protected species potentially affected by the fishery. Endangered and other protected species potentially affected by management measures under Amendment 13 would also be affected in a similar manner by measures proposed by this emergency action.

The protected species that fishing operations under Amendment 13 and the preferred alternative may potentially affect through gear interactions are the northern right whale (*Eubalaena glacialis*), humpback whale (*Megaptera novaengliae*), fin whale (*Balaenoptera physalus*), sei whale (*B. borealis*), blue whale (*B. musculus*), sperm whale (*Physeter macrocephalus*), minke whale (*B. acutorostrata*), harbor porpoise (*Phocoena phocoena*), Atlantic white-sided dolphin (*Lagenorhynchus acutus*), pelagic Delphinids (i.e., pilot whales, offshore bottlenose and common dolphins), harbor seal (*Phoca vitulina*), gray seal (*Halichoerus grypus*), harp seal (*Phoca groenlandica*), leatherback turtle (*Dermochelys coriacea*), Kemp Ridley's sea turtle (*Lepidochelys kempii*), green sea turtle (*Chelonia mydas*), and loggerhead sea turtle (*Caretta caretta*). Amendment 13 contains a full description of possible causes of anthropogenic mortality and injury.

The Council made the assessment that NE multispecies fishing operations under Amendment 13 are not expected to affect shortnose sturgeon (*Acipenser brevirostrum*), Gulf of Maine DPS of Atlantic salmon (*Salmo salar*), roseate tern (*Sterna dougallii dougallii*), piping plover (*Charadrius melodus*), or hawksbill sea turtle (*Eretmochelys imbricata*), all of which are listed species under the ESA.

Several cetaceans protected under the MMPA are found in the waters fished by the NE multispecies fishery, namely Risso's dolphin (*Grampus griseus*), spotted and striped dolphins (*Stenella* spp.), and coastal forms of the Atlantic bottlenose dolphin (*Tursiops truncatus*). Although these species may occasionally become entangled or otherwise entrapped in certain fishing gear such as pelagic longline and mid-water trawls, these gear types are not used in the NE multispecies fishery. Right whale critical habitat has been designated in the Great South Channel and Cape Cod Bay, but the Council stated that it does not believe that the NE multispecies fishery will adversely affect such habitat.

7.4 Human Communities

The Affected human communities for the NE multispecies fishery was described in detail in Section 9.4 of Amendment 13 (NEFMC 2003). That discussion described the NE multispecies fishery from 1994 through 2002. The Affected Environment section of FW 40A (NEFMC 2004) included updated information on the fishery in FY 2002, but did not include any information about FY 2003. This section of the document provides a brief summary of the commercial and recreational fishing sector in Amendment 13, updated where possible with additional data through FY 2005.

Communities that would most likely be affected by measures contained in this preferred alternative are the communities with close association with the groundfish fishery. These communities were identified in the FSEIS prepared for Amendment 13 because they have an active and large NE multispecies fishing fleet with shoreside facilities that depend on groundfish for a substantial portion of their business (NEFMC 2003). The primary communities affected by this action are those with the most vessels and shoreside infrastructure dependent upon the groundfish fishery and include: Portland, ME; Portsmouth, NH; Gloucester, MA; Boston, MA; Chatham/Harwichport, MA; New Bedford/Fairhaven, MA; Point Judith, RI; and Eastern Long Island, NY (see Section 5.6 of the Amendment 13 FSEIS for further details).

7.4.1 Commercial Harvesting Sector

The commercial sector consists of a wide range of vessels of different sizes and using different gear types. These vessels are homeported in several coastal states, with most vessels claiming homeports in Maine, New Hampshire, Massachusetts, and Rhode Island. Gears that are typically used to prosecute the fishery include otter trawls, sink gillnets, bottom longlines, and hook gear. Detailed descriptions of these gears, and their impacts on EFH, are provided in Section 9.2.3 of Amendment 13.

Both limited access and open access permit are issued to vessels to harvest different species of groundfish. Limited access vessels target large mesh regulated species (e.g., cod, haddock, flounder, etc.), while open access vessels generally target small mesh species such as whiting and hake. Since the implementation of Amendment 5 in 1994, all vessels that land regulated groundfish for commercial sale have been required to have a permit. Permits are issued in different categories, depending on the activity and history of the vessel. Amendments 5, 7, and 13 all changed the permit category definitions. Limited access permits are divided into DAS permits (Category A – Individual DAS permit; Category D – Hook Gear permit; Category E – Combination permit, or vessels issued both a NE multispecies DAS and a scallop DAS permit; and Category F – Large Mesh Individual DAS permit) and non-DAS permits (Category C – Small Vessel Exemption permit and Category HA – Handgear A permit). Vessels issued a DAS permit are generally larger vessels capable of fishing farther offshore, while non-DAS permits are smaller vessels fishing in the near-shore waters mainly within the GOM. There are also several open access permit categories (Category HB – Handgear B permit, Category I – Charter/party permit, Category J – Scallop Multispecies Possession permit, and Category K – Open Access Multispecies permit) that allow vessels, with the exception of Categories HB and J permits, to target small mesh NE multispecies such as whiting. Currently, there are approximately 3,500 NE multispecies permits issued to vessels targeting regulated groundfish species, including: 1,346 limited access DAS permits; 178 limited access non-DAS permits; 1,520 open access HB permits; and 264 open access J permits. Many groundfish vessels have been issued permits, and participate in, other fisheries as well.

Amendment 13 created four types of DAS (Category A, Regular B, Reserve B, and C) that could be used in specific circumstances. Days-at-sea usage by limited access groundfish vessels increased from 1996 through 2001, but has gradually declined since. In 2004, vessels that used DAS fished approximately 32,973 Category A and B DAS out of the 84,398 Category A and B DAS allocated, for an overall DAS usage rate of just 30

percent. This is a decline from the previous fishing year where 42,118 DAS (59 percent) were used. In 2004, vessels used 29,974 Category A DAS (68 percent of those allocated), 1,705 Regular B DAS (6.5 percent of those allocated), and 1,294 Reserve B DAS (8.9 percent of those allocated). For the 2005 fishing year, as of October 2005, vessels have used 18,319 Category A and B DAS (22 percent of those allocated) which is slightly higher than what was used by October 2004 (16,239 Category A and B DAS, or 19 percent of allocated DAS). By far, vessels from Massachusetts used the most DAS, followed by Maine, Rhode Island, and New Hampshire. In 2002, information contained in FW 40B indicated that vessels from 30-50 feet length overall (LOA) used the most DAS, followed by vessels from 50-74 feet LOA and those greater than 75 feet LOA (NEFMC 2005a). Historical DAS use by limited access vessels was summarized in FW 40B in Table 32 (NEFMC 2005a).

Amendment 13 implemented a DAS Leasing Program in May 2004. During the 2004 FY, 6,280 Category A DAS were leased to other vessels. This accounts for 14 percent of the 2004 Category A DAS allocation and 21 percent of Category A DAS used in 2004. Most DAS were acquired by the vessels that have been the most active in the groundfish fishery between FY 1996 and 2001. Of the 160 vessels that leased and used DAS, forty-six (28.8 percent) also used either Category B (Regular) or Category B (Reserve) DAS. Participation in the DAS Leasing Program in FY 2005 has been higher than in 2004 with 4,897 Category A DAS being leased as of November 30, 2005. This corresponds to over 9 percent of the Category A DAS allocated in 2005.

Table 10 lists the landings of regulated groundfish from fishing year 2004 and compares these landings to that from the 2003 fishing year. Overall groundfish landings declined by 130 mt from 2003 to 2004. Some species experienced increased landings such as yellowtail flounder and pollock, while others experienced substantial reductions in landings such as cod and winter flounder. It is apparent that the measures implemented by Amendment 13 affected landings amounts compared to previous levels.

Species	2004 Landings (mt)	Change from 2003 Landings (mt)
Cod	6,667	-1,776
Haddock	7,826	895
Yellowtail Flounder	6,522	1,807
Pollock	5,456	1,159
Redfish	474	60
White Hake	3,109	-739
American Plaice	1,656	-406
Winter Flounder	4,481	-968
Witch Flounder	2,888	-178
Windowpane Flounder	78	16
Total	39,158	-130

Table 10: Regulated groundfish landings for 2004 and the change from the 2003 fishing year.

7.4.2 Recreational Harvesting Sector

Section 9.4.3 of Amendment 13 (NEFMC 2003) contained a detailed description of the recreational fishing sector. In summary, this sector consists of two main components: Recreational fishermen who access the resource either from shore or

through the use of privately-owned vessels, and recreational fishermen who access the resource by using a vessel that carries passengers for hire. The latter group is referred to as "party/charter" vessels. The distinction between the two is that party vessels carry large numbers of passengers and are generally licensed and inspected by the Coast Guard to carry passengers for hire, while charter vessels are usually smaller vessels that carry up to six passengers. Only party/charter vessels are required to have a permit issued under the NE multispecies FMP. Currently, approximately 823 NE multispecies party/charter permits have been issued for the 2005 fishing year. Recreational fishermen generally target cod, haddock, pollock, and winter flounder, though they catch other regulated groundfish species. The targeted stocks include GOM and GB cod, GOM and GB haddock, and GOM and SNE/MA winter flounder. The recreational groundfish fishery with access to these resources is concentrated between southern Maine and Rhode Island, though winter flounder is targeted by recreational fishermen as far south as New Jersey.

In general, recreational catch in the NE has declined since 1980, though the number of trips per participant has increased. Private recreational trips has remained steady, but trips aboard party/charter boats have declined since 1990 (NEFMC 2003). Amendment 13 indicates that since 1990, the combined recreational catch of regulated NE multispecies ranged from a high of 8.0 million in 1991 to a low of 2.8 million fish in 1999. Recent changes in catch levels is potentially influenced by the increasing abundance of non-groundfish species such as striped bass and fluke and the declining abundance of regulated groundfish stocks.

8.0 Environmental Consequences – Analysis of Impacts

This section summarizes and compares the impacts of the preferred alternative and the no action alternatives, including a brief discussion of the methods used to analyze proposed measures.

8.1 Preferred alternative

This section summarizes the impacts of the propose action. The preferred alternative includes the following management measures:

- Differential DAS counting at a rate of 1.4:1 for each Category A DAS used in all RMAs (see Figure 2);
- A reduction of the GOM cod trip limit to 600 lb/DAS, up to 4,000 lb/trip;
- A reduction of the CC/GOM and SNE/ MA yellowtail flounder trip limit, as follows: 500 lb per DAS, up to 2,000 lb per trip during July, August, September, December, January, February, March, and April; and 250 lb per trip during May, June, October, and November;
- A GB yellowtail flounder trip limit of 10,000 lb/trip;
- A delayed start date of August 1 for the Eastern U.S./Canada Haddock SAP;
- A provision to allow vessels to fish inside and outside of the Eastern U.S./Canada Area on the same trip;
- Incidental TAC amounts for GB winter flounder and GB yellowtail flounder;
- A modified Regular B DAS Program, restricted to the U.S./Canada Management Area;

- A prohibition on the use of Regular B DAS while on a monkfish DAS for limited access Category C and D monkfish vessels fishing in the NE multispecies Regular B DAS Program;
- Monkfish possession limits for limited access Category C and D monkfish vessels fishing in the Regular B DAS Program under a NE multispecies DAS;
- The continuation of the DAS Leasing Program;
- GOM cod prohibition for party/charter and private recreational vessels from November 1 – March 31; and
- An increase in the size limit for GOM cod to 24 inches for party/charter and private recreational vessels.

8.1.1 Biological Impacts on Groundfish

8.1.1.1 Commercial Measures

Methods

Management measures considered under this action include trip limits, differential DAS counting, seasonal area closures and an overall DAS reduction through changing the A/B day split (as part of the Amendment 13 default measures continued through this action). As with Amendment 13, one of the primary analytic tools used to analyze both the biological and economic impacts of the proposed alternatives to achieve mortality objectives is the closed area model (CAM). The CAM projects changes in mortality brought about by area closures, revised trip limits and changes in DAS through a non-linear programming model using the General Algebraic Modeling System (GAMS). The CAM allocates effort to specific block-month combinations for each vessel holding a valid year 2005 multispecies permit, and landing groundfish during the time period 2001-2004. A four year period is used to smooth out any peaks or valleys in the data. Data used by the model includes average catch per unit effort (CPUE) by species, gear type, block and month, prices by species and month, and effort by vessel and month. Vessels are assigned a specific gear type based on which gear they used to land the majority of their groundfish catch between 2001 and 2004. All prices were set to year 2000 levels in order to remove the influence of inflation from the analysis. The model attempts to maximize profit for each vessel by allocating their effort to the highest profit blocks. However, because the revenue functions embedded in the model are downward sloping, effort stops flowing to a block when marginal profit hits zero. The model can also be modified to incorporate changes in allowable days at sea, trip limits, differential days at sea and changes in CPUE by species and stock area.

Based on the economic and social science peer review which took place in January, 2004 (http://www.nefsc.noaa.gov/groundfish) several modifications were made to the original closed area model on the advice of the external reviewers. The first change was to incorporate costs in the model so each vessel would be maximizing profit, as opposed to revenue. The second change concerned choice of fishing location. Previously, vessels were restricted to fishing in block-month combinations where records showed they fished. Now, vessels are allowed to shift their effort to blocks where they hadn't fished previously based on the fishing locations of similarly configured vessels from their fishing ports. Thirdly, the total amount of effort available to a fishing vessel is

based on their fishing year 2005 allocation. This differs from previous models where vessels were allocated their average DAS over a four year period. By allowing vessels to fish up to their allocated effort, there is no longer an issue of latent effort being activated and not being incorporated in the model. Finally, the model was run 250 times for each option incorporating a stochastic CPUE for each species-block-month-gear combination. Thus, the median (50th percentile) outcome can be reported rather than relying on a single point-estimate. This is consistent with the percentiles that are reported for the rebuilding trajectories, and with the target that is used for reducing F.

An initial model run was made based on the status quo management regime. Two subsequent runs were made given the suite of management measures proposed under the No Action alternative, and the preferred alternative. The No Action alternative differs from the status-quo because of additional management measures that will occur on May 1st of fishing year 2006 under the default provisions of Amendment 13. The estimated catch stream from each option is compared to the status quo catch stream, and the percentage change in landings is calculated. These numbers should be interpreted as the percent change in exploitation brought about by the proposed management action. These estimates were then adjusted by the estimated impact of the DAS Leasing Program (Table 11). This final exploitation rate (Table 12) is then converted to an equivalent F rate.

Results

In order to be consistent with the projections made for Amendment 13, changes in exploitation at the 50th percentile from the CAM are used to calculate the projected F's after adjusting for the DAS Leasing Program. Therefore, the projected F should be considered a median value. Under the No Action alternative, F for all stocks is projected to decline, or stay constant, during the 2006 FY compared to the status-quo level, with the exception of Pollock during FY 2006. Pollock F is projected to increase to 3.56, compared with the current 3.51. Under the preferred alternative, F for all stocks is projected to decline, in all cases by substantially more than the No Action alternative (Table 13).

Under the No Action alternative, projected median F's are not adequate to meet the rebuilding schedule under Amendment 13 for GOM cod, white hake, CC/GOM yellowtail flounder, and SNE/MA yellowtail flounder. Although, there was no formal rebuilding program specified under Amendment 13 for GB winter flounder, the most recent estimated F of 1.86 was almost double the F_{MSY} level of 1.0 (see http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0513/garm2005k.pdf). Therefore, the projected F of 1.73 under the preferred alternative will not reduce mortality to the suggested level of 1.0 found in the GARM report.

Under the preferred alternative, projected F's are lower than the rebuilding F's specified under Amendment 13 for all stocks except for CC/GOM yellowtail flounder and SNE/MA yellowtail flounder. Additionally, projected mortality for GB winter flounder is still higher than the target of 1.0, although further reductions in mortality will occur through reduction of winter flounder mortality under the Regular B DAS program. This is because the declaration of GB winter flounder as a groundfish stock of concern and the resulting implementation of an incidental catch TAC for GB winter flounder would eliminate a directed winter flounder fishery under the Regular B DAS Program

proposed by this action. The estimated reductions from the Regular B DAS Program have not been incorporated into the projected F. Gulf of Maine cod F is projected to decline to 0.22, while the target is 0.23. The target F's for both CC/GOM yellowtail flounder and SNE/MA yellowtail flounder are 0.26. Under the preferred alternative, the projected F for CC/GOM yellowtail flounder is 0.31, and the projected F for SNE/MA yellowtail flounder is 0.34.

Based upon projections that the Council's proposed Alternative 1 would be adopted by the Council under FW 42, CAM runs were executed in order to determine the magnitude of a DAS reduction necessary to achieve all objectives. Note, the analyzed FW 42 alternative was more restrictive than the proposed measures under this emergency action, and included a GB winter flounder trip limit, the Amendment 13 default DAS reduction, and a higher differential DAS rate (1.5:1) in the SNE/MA RMA. Based on this run, it was estimated that a 33 percent cut in DAS in conjunction with the FW 42 Alternative 1, would achieve all objectives. The level of differential DAS counting of 1.4 to 1 was selected for the Secretarial action because it is equivalent to a DAS cut of approximately 33 percent (including the default DAS reduction). A similar magnitude of DAS reduction for the secretarial cut was selected in order to achieve a high degree of parity in the DAS regimes between the Secretarial action and what was anticipated under FW 42.

On February 2, 2006, the Council adopted Alternative B2 as the primary suite of measures to reduce F on groundfish stocks under FW 42. This alternative relies on differential DAS counting at a rate of 2:1 in a large area in the SNE/MA RMA and in a large area within the near-shore GOM, along with trip limits to reduce groundfish F. Since the CAM is not able to precisely simulate the conditions of the 2006 fishing year that are anticipated, it is difficult to precisely determine the expected biological impacts of the proposed Secretarial action, in combination with the measures proposed in FW 42. However, since Alternative B2 meets the mortality objectives on its own, the mortality objectives of the FMP will likely be met by a combination of the proposed Secretarial measures and those proposed under FW 42. However, if FW 42 is not implemented early in the 2006 fishing year as anticipated, implementation of additional management measures by the Secretary may be necessary to further reduce F and meet FMP requirements.

NMFS concluded that the proposed measures under the Secretarial action, in conjunction with FW 42, will achieve the full F reductions necessary for fishing year 2006. This conclusion is based upon the assumption that any alternative implemented under FW 42 would achieve all the required F reductions, the fact that analyses under the CAM are conducted on an annual scale, and the fact that the DAS regime proposed for the Secretarial action (i.e., differential DAS counting) is similar to that adopted by the Council under FW 42. The CAM is not able to precisely simulate the conditions of the 2006 fishing year that are anticipated, due to the fact the management measures will be somewhat different during two portions of the year given that the differential DAS counting rate is different between the Secretarial action (1.4:1 in all RMAs) and that proposed by FW 42 (2:1 in portions of the GOM and SNE/MA RMAs).

Stock Area and Species	Difference (mt live weight)	2001-2003 Average Landings (mt live weight)	Percent Average Landings
GOM Cod	131	4,182	3.1%
GOM Winter Flounder	14	633	2.2%
GOM Haddock	71	1,209	5.9%
CC/GOM Yellowtail Flounder	52	2,110	2.5%
GB & GOM Windowpane Flounder	-0.40	25	-1.6%
GB Cod	290	8,759	3.3%
GB Winter Flounder	50	2,177	2.3%
GB Yellowtail Flounder	16	3,200	0.5%
GB Haddock	332	5,508	6.0%
SNE/MA Yellowtail Flounder	0.53	740	0.1%
SNE/MA Winter Flounder	85	3,416	2.5%
SNE/MA Windowpane Flounder	-0.35	59	-0.6%
Redfish	28	363	7.6%
White Hake	169	3,728	4.5%
Pollock	295	4,162	7.1%
Witch Flounder	142	3,110	4.6%
Plaice	170	3,426	5.0%

Table 11: Estimated change in landings due to the DAS Leasing Program.

Stock Area and Species	No-Action Alternative	Preferred Alternative
	Change	Change
GB Winter Flounder	-6.89%	-30.43%
GOM Winter Flounder	-5.15%	-33.11%
SNE/MA Winter Flounder	-19.31%	-22.19%
GB Cod	-3.23%	-22.58%
GOM Cod	-2.94%	-36.47%
GB Haddock	-0.55%	-17.13%
GOM Haddock	-1.07%	-25.29%
American Plaice	-4.41%	-26.47%
Pollock	1.32%	-19.75%
Redfish	0.00%	-50.00%
White Hake	-2.24%	-24.27%
Northern Windowpane Flounder	-6.92%	-52.06%
Southern Windowpane Flounder	-37.81%	-27.98%
Witch Flounder	-2.99%	-25.37%
CC/GOM Yellowtail Flounder	-4.17%	-35.42%
GB Yellowtail Flounder	-5.47%	-55.22%
SNE/MA Yellowtail Flounder	-46.55%	-41.38%

Table 12: Median percent change in exploitation for No-Action and Preferred Alternatives.

Species	Current F (FY 2005)	Target F (FY 2006)	No-Action Alternative		Preferred Alternative	
			Projected F (FY 2006)	% Change	Projected F (FY 2006)	% Change
GB Winter Flounder	1.86		1.73	-6.9%	1.29	-30.4%
GOM Winter Flounder	0.13		0.12	-5.1%	0.09	-33.1%
SNE/MA Winter Flounder	0.347	0.32	0.28	-19.3%	0.27	-22.2%
GB Cod	0.155	0.22	0.15	-3.2%	0.12	-22.6%
GOM Cod	0.34	0.23	0.33	-2.9%	0.22	-36.5%
GB Haddock	0.181	0.26	0.18	-0.5%	0.15	-17.2%
GOM Haddock	0.18	0.23	0.18	-1.1%	0.13	-25.3%
American Plaice	0.136	0.17	0.13	-4.4%	0.10	-26.5%
Pollock	3.51		3.56	1.3%	2.82	-19.8%
Redfish	0.004	.01	0.004	0.0%	0.00	-50.0%
White Hake	1.18	1.03	1.15	-2.2%	0.89	-24.3%
Northern Windowpane Flounder	0.04		0.04	-6.9%	0.02	-52.1%
Southern Windowpane Flounder	0.44	0.98	0.27	-37.8%	0.32	-28.0%
Witch Flounder	0.134		0.13	-3.0%	0.10	-25.4%
CC/GOM Yellowtail Flounder	0.48	0.26	0.46	-4.2%	0.31	-35.4%
GB Yellowtail Flounder	0.201	0.25	0.19	-5.5%	0.09	-55.2%
SNE/MA Yellowtail Flounder	0.58	0.26	0.31	-46.5%	0.34	-41.4%

Table 13: Current F, projected F and change in F based on Closed Area Model results (median results)).

Incidental Catch TACs for GB Winter Flounder and GB Yellowtail Flounder

Definition of incidental catch TACs for GB winter flounder and GB yellowtail flounder would strictly constrain the amount of fish caught under a Category B DAS. Implementation of these incidental catch TACs would represent a positive, but relatively small, biological impact to groundfish, with respect to the management measures as a whole. The analysis of the Regular B DAS Pilot Program indicates that the amount of GB winter flounder caught under that program would be dramatically reduced by the implementation of an incidental catch TAC for GB winter flounder.

Modified Regular B DAS Program

The preferred alternative would extend the Regular B DAS Pilot Program for FY2006, but would reduce the number of DAS allotted to the first quarter of the fishing year to 500 DAS. The preferred alternative would also limit the use of Regular B DAS to the U.S./Canada Management Area (statistical areas 522, 525, 561, and 562). Trawl vessels would be required to use a separator trawl and would include GB winter flounder and GB yellowtail flounder as species of concern with trip limits of 100 lbs per DAS.

The impact of these changes to the Regular B DAS Program is difficult to assess since the effectiveness of the separator trawl is uncertain not only regarding cod bycatch but regarding bycatch of species other than cod. Additionally, since neither GB winter flounder nor GB yellowtail founder were stocks of concern in FY2005, observed catch rates for these two stocks may not reflect fishery performance under more restrictive conditions. Keeping these caveats in mind, an estimate of potential biological impact was obtained using data from the Regular B DAS Pilot Program for quarters 3 and 4 of FY2004 and quarters 1 and 2 for FY2005.

Data

Using the VMS catch report data, trips that were both declared and finished as a Regular B DAS trip (i.e. the trip was not flipped) were matched to dealer records to ascertain the live weight of all species landed on that trip. Matching to dealer records was necessary to estimate impacts on other species since vessels were only required to report catches of groundfish species of concern while on a Regular B DAS trip. Note that the reporting requirements also include discards of stocks of concern, making it possible to calculate discard ratios and total catch for stocks of concern. Live weight for species not reported through VMS was obtained from the dealer reports, which also means that impacts on these species need to be based on landings rather than total catch. Trips that could not be matched to a dealer record were not retained. Since the preferred alternative would limit use of Regular B DAS to the U.S./Canada Management Area, the available data was filtered to exclude all trips not taken inside the area encompassed by statistical areas 522, 525, 561 and 562.

Method

Live weight by species was summed by quarter for all Regular B DAS trips that were matched to dealer records in the manner described above. Total DAS for these trips were also calculated. Dividing total live weight by DAS yields an estimate of catch per DAS for stocks of concern and landings per DAS for all other stocks. As a measure of central tendency the median value of CPUE for each stock was used to approximate the most likely catch rates that would prevail during FY2006. Mean catch per DAS was also calculated to provide an alternative estimate. Given an incidental catch TAC for a groundfish stock of concern, an estimate of the number of Regular B DAS that it would take to catch the TAC is obtained by dividing the TAC by the median catch per DAS. Since the Regular B DAS Program would be shut down when the TAC for any one of the seven stocks of concern has been reached, an estimate of total catch is obtained by multiplying the number of DAS required to take the most limiting incidental catch TAC by the catch per DAS.

Results

Total catch of stocks of concern over four consecutive quarters (Quarters 3 and 4 of FY2004 and Quarters 1 and 2 of FY2005) from trips assigned to the U.S./Canada Management Area included over 800 mt of GB yellowtail flounder, 623 mt of GB winter flounder, 78 mt of GB cod, 40 mt of witch flounder, 44 mt of American Plaice, and 25 mt of white hake (Table 14). In addition to these stocks of concern, almost 900 mt of haddock were landed, along with 282 mt of pollock and comparatively small quantities of

windowpane flounder (13 mt), Acadian redfish (38 mt), and Atlantic Halibut (0.3 mt) (Table 15). Among other species not regulated through the NE Multispecies FMP, the majority of landings were monkfish (890 mt), followed by winter skate (353 mt), Atlantic sea scallops (135 mt), American lobster (70 mt), and summer flounder (39 mt). Landed quantities of several other species (spiny dogfish, thorny skate, bluefish, cusk, and wolfish) were landed in amounts ranging from 0.3 mt to less than 2 mt.

Statistical Area	Cod	Yellowtail Flounder	American Plaice	Witch Flounder	Winter Flounder	White Hake	Haddock	Windowpane Flounder	Redfish	Pollock	Atlantic Halibut
522	45.1	194.4	25.8	30.3	249.5	22.6	602.5	2.4	37.6	280.0	0.2
525	11.1	322.7	11.0	8.7	112.7	1.5	205.3	10.1	0.4	1.3	0.0
561	1.4	20.8	0.0	0.1	21.8	0.0	2.7	0.0	0.0	0.1	0.0
562	20.3	312.7	3.5	4.7	239.4	0.4	74.5	0.3	0.1	0.7	0.0
Total	77.8	850.7	40.3	43.7	623.5	24.5	885.0	12.7	38.0	282.1	0.3

Table 14: Total catch (mt, live weight) of stocks of concern (cod, yellowtail flounder, American plaice, winter flounder, white hake) and total landings (mt live weight) of other regulated groundfish (haddock, windowpane flounder, redfish, pollock) on Regular B DAS trips inside the U.S./Canada Management Area (Quarter 3,4 of FY2004 and Quarter 1,2 of FY2005).

Statistical Area	Monkfish	Dogfish	Scallops	Fluke	Winter	Thorny	Bluefish	Cusk	Wolffish	Lobster	Other
522	626.4	0.3	73.6	18.8	253.6	0.5	1.0	1.6	1.6	37.9	0.1
525	211.2	0.1	47.1	17.0	99.8	0.0	0.2	0.0	0.1	9.9	0.3
561	2.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	1.7	0.0
562	50.2	0.0	14.3	3.1	0.0	0.0	0.0	0.0	0.0	20.3	0.0
Total	890.1	0.4	135.0	39.2	353.4	0.5	1.3	1.6	1.7	69.8	0.3

Table 15 Total catch (mt, live weight) of stocks of concern and total landings (mt, live weight) of species not managed under the NE Multispecies FMP on Regular B DAS trips Inside the U.S./Canada Management Area (Quarter 3,4 of FY2004 and Quarter 1,2 of FY2005).

Among stocks of concern, the catches of American plaice, witch flounder, and white hake were well below their incidental catch TAC's for 2004/2005 and would be below the 2006 TAC's as well. By contrast, both the GB yellowtail and GB winter flounder catches would exceed the 2006 incidental catch TAC's by several orders of magnitude (Table 16). Thus, the incidental catch TAC's alone would reduce incentives to target both of these stocks on a Regular B DAS. Given the fact that the majority of groundfish species on GB have been designated stocks of concern and that participating vessels will be required to use a separator trawl, the only likely groundfish species to be targeted on a Regular B DAS is GB haddock. For this reason, the impacts were estimated using data only from trips where haddock was at least 50 percent of total catch.

Stock	GB Cod	GB Winter Flounder	GB Yellowtail Flounder	American Plaice	Witch Flounder	White Hake
Quarter 1[1]	8.8	2.0	3.0	26.2	39.4	5.9
Quarter 2	17.5	4.1	5.9	52.4	78.7	11.7
Quarter 3	17.5	4.1	5.9	52.4	78.7	11.7
Quarter 4	17.5	4.1	5.9	52.4	78.7	11.7

[1]TAC's by quarter were prorated based on the proportion of allocated Regular B DAS in each quarter to the total allocated for the fishing year.

Table 16: FY2006 incidental catch TAC's (mt, live weight) by stock and quarter.

The trip limit for all stocks of concern is 100 pounds per DAS, or equivalently 0.045 mt per DAS. For Regular B DAS trips that targeted haddock, both median and mean catch per DAS was less than this threshold in all quarters for GB yellowtail, plaice, witch flounder, and white hake (Table 17). For GB cod median and mean catch per DAS was above 100 pounds per DAS in all but quarter 3 (November – January) while catch per DAS exceeded 100 pounds per DAS for winter flounder in both quarter 1 (May – July) and in quarter 3.

Quarter	GB Cod	GB Winter Flounder	GB Yellowtail Flounder	American Plaice	Witch Flounder	White Hake
Median Catch per DAS (mt/DAS)						
Quarter 1	0.0569	0.1497	0.0066	0.0035	0.0034	0.0000
Quarter 2	0.0629	0.0006	0.0000	0.0340	0.0453	0.0335
Quarter 3	0.0374	0.2026	0.0000	0.0021	0.0000	0.0000
Quarter 4	0.0664	0.0000	0.0000	0.0094	0.0386	0.0083
Mean Catch per DAS (mt/DAS)						
Quarter 1	0.0509	0.1906	0.0115	0.0086	0.0072	0.0050
Quarter 2	0.0543	0.0105	0.0179	0.0370	0.0418	0.0376
Quarter 3	0.0385	0.2340	0.0158	0.0104	0.0107	0.0025
Quarter 4	0.0798	0.0082	0.0343	0.0211	0.0405	0.0429

Table 17: Median and mean catch per DAS (mt live weight) on Regular B DAS trips with at least 50 percent haddock catch inside the U.S./Canada Management Area.

Dividing the calculated median and mean values of catch per DAS by the incidental catch TAC yields an estimate of the number of DAS that it would take to reach the TAC. For both plaice and witch flounders, a combination of comparatively high incidental catch TAC and low

catch rates would be sufficient to assure that the incidental catch TAC for these two species would not be expected to be exceeded in any quarter (Table 18). Given both median and mean catch rates for GB cod, the incidental catch TAC would be taken in about one-third of the allotted Regular B DAS in quarter 1 and less than half of the allotted days in quarters 2 through 4. Based on observed data, the most problematic stock would be GB winter flounder. In both quarters 1 and 3 catch rates exceeded 300 pounds per DAS resulting in an estimated shut-down of the Regular B DAS program in 20 DAS or less.

Across all stocks, the most limiting stock would be expected to result in a closure of the U.S./Canada Management Area to the use of Regular B DAS. Based on median estimates of catch per DAS catches of GB winter flounder would result in closure of the area after 14 DAS in quarter 1 and 20 DAS in quarter 3 (Table 18). For quarters 2 and 4, the incidental catch of GB cod would be expected to result in closure after 278 and 263 DAS in quarters 2 and 4 respectively. At these estimated DAS, just over half of the GB cod TAC would be taken; less than half of the GB winter flounder TAC would be taken; less than 30 percent of the white hake TAC would be taken; and less than 10 percent of the plaice, witch flounder and GB yellowtail flounder TAC would be taken.

Based on mean catch rates, GB winter flounder would still limit Regular B DAS to 11 and 17 DAS respectively for quarters 1 and 3, but the limiting stock for quarter 2 would be white hake and would be GB yellowtail flounder in quarter 4. The proportion of TAC that would be taken at these estimated DAS would similar to that estimated at median levels, except that the proportion of GB winter flounder that would be taken would be about 75 percent and about half of the GB yellowtail flounder TAC would be taken.

Quarter	GB Cod	GB Winter Flounder	GB Yellowtail Flounder	American Plaice	Witch Flounder	White Hake	Limiting DAS
DAS to Meet TAC based Median Catch per DAS							
Quarter 1	155	14	446	500	500	500	14
Quarter 2	278	1000	1000	1000	1000	349	278
Quarter 3	468	20	1000	1000	1000	1000	20
Quarter 4	263	1000	1000	1000	1000	1000	263
DAS to Meet TAC based Mean Catch per DAS							
Quarter 1	173	11	258	500	500	500	11
Quarter 2	322	388	330	1000	1000	311	311
Quarter 3	454	17	374	1000	1000	1000	17
Quarter 4	219	495	172	1000	1000	273	172

Table 18: Estimated DAS required to catch the incidental TAC by stock and quarter based on median and mean catch per DAS.

Caveats

The results described are likely to represent a conservative estimate of the Regular B DAS Program impact for both stocks of concern and on other species. As noted earlier, the haddock separator trawl would be expected to eliminate much of the flatfish catch in addition to reducing bycatch of cod. This means that calculated catch rates using data for trips that did not use a separator trawl would not be expected to accurately reflect realized conditions using the gear. Assuming the gear is fished properly, catch rates of stocks of concern (particularly flatfish) should be lower than estimated herein and a larger number of regular B DAS may be expected to be used. Just how many more Regular B DAS may be anticipated is uncertain. However, it

should be noted that even if the haddock separator trawl substantially reduces flatfish bycatch, the GB winter flounder incidental catch TAC could be exceeded in quarters 1 or 3 assuming full use of available DAS.

Observed data also include Regular B DAS trips where, even if neither GB winter flounder nor GB yellowtail flounder were targeted, vessels operators had no incentive to avoid them since they were not designated species of concern and had no trip limits. The preferred alternative would designate these species as stocks of concern meaning that fishing strategies are likely to change accordingly. This means, once again, that data from observed trips may not provide an accurate estimate of realized catch rates resulting in an overly pessimistic assessment of the number of Regular B DAS that may be used during FY2006.

Taken together, these two caveats mean that more Regular B DAS will likely be able to be used during FY2006 than estimated herein and the proportion of each species incidental catch TAC that will be taken will be higher. However, the results indicate that catch rates of GB yellowtail and GB winter flounder in particular would have to be reduced to about 10 pounds per DAS before these two species would no longer be expected to result in a premature closure to the use of the Regular B DAS Program. Similarly, catch rates of GB cod would also need to be reduced to less than 40 pounds per DAS. If these catch rates cannot be achieved then is seems likely that at least one of the incidental catch TAC's will result in a suspension of the program in one or more quarters.

DAS Leasing Program

The preferred alternative continues the provisions of the DAS Leasing Program, as originally implemented by Amendment 13 on May 1, 2004. Information on the DAS Leasing Program used in this analysis was compiled from the NMFS DAS database which tracks DAS allocations, transfers, and use. The dealer and vessel trip report (VTR) databases were used to estimate the impacts of the leasing program on mortality of specific stocks. Complete information regarding the performance of this program is only available for FY 2004.

The DAS Leasing Program was widely used in FY 2004, with nearly 15 percent of allocated Category A DAS changing hands through the leasing market. Most DAS were acquired by vessels that have been the most active in the groundfish fishery between FY 1996 and 2001. There is evidence that the leasing program is not conservation neutral, though the impacts differ among stocks.

During calendar year 2004, the top five species landed by lessee vessels were haddock, monkfish, pollock, cod and yellowtail flounder (Figure 8). For comparison purposes, landings by lessor and lessee vessels in calendar year (CY) 2003 were examined. This was the last full year before the implementation of the DAS Leasing Program. The top five species for lessor vessels were Atlantic herring, silver hake, loligo squid, monkfish and cod, while the top five species for lessee vessels were monkfish, cod, haddock, pollock and loligo squid (Figure 9 and Figure 10).

Figure 8: Top Five Species Landed by Lessee Vessels in 2004.

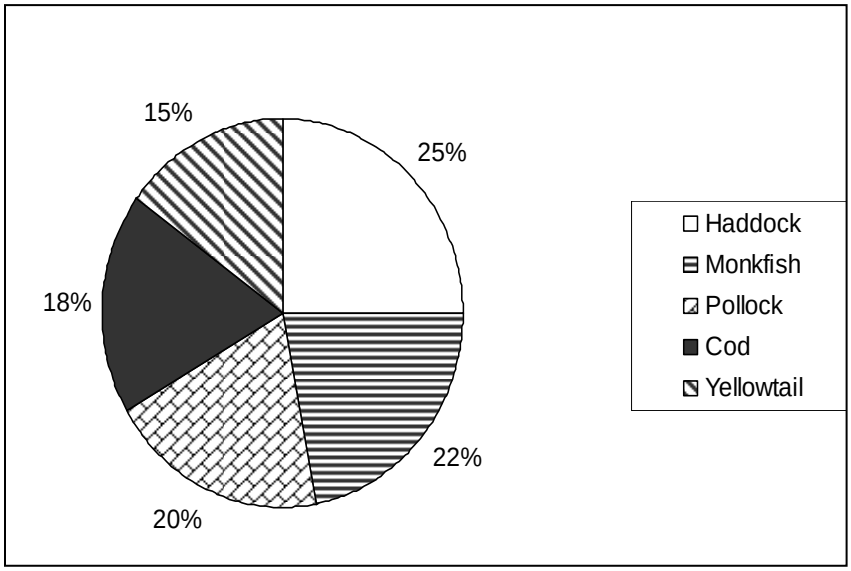


Figure 9: Top Five Species Landed by Lessor Vessels in 2004.

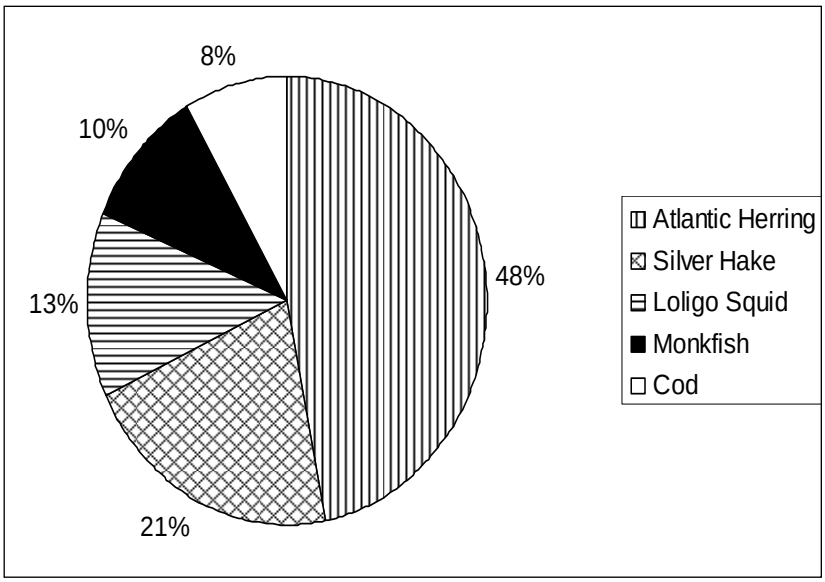
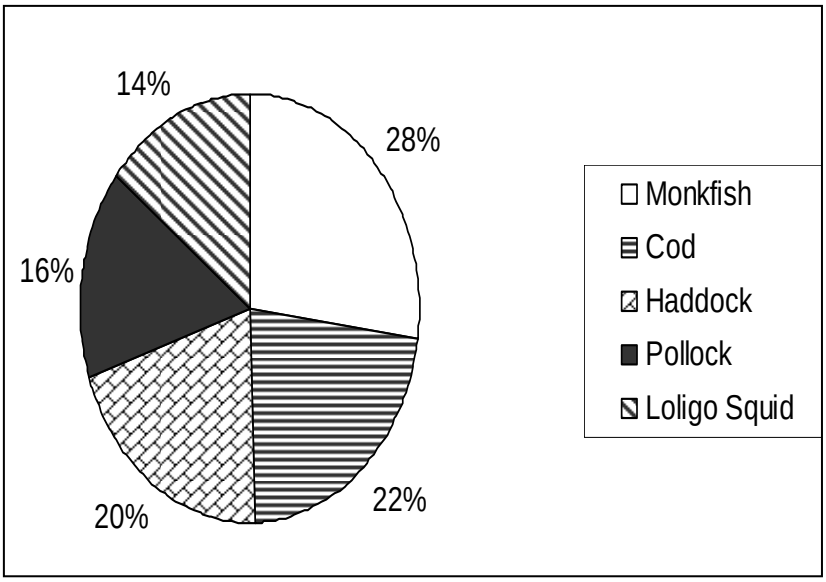


Figure 10: Top Five Species Landed by Lessee Vessels in 2003.



The biological impacts of the DAS Leasing Program were difficult to separate from the other management changes that took place. In order to characterize biological impacts, several steps needed to be taken. First, for each vessel with landings in the time period 2001-2003, the percent of their groundfish landings from each stock area, and their effort in those areas, was calculated based on VTR data. Landings from the dealer logbooks were then allocated to specific areas based on the percent landings calculated from the VTR data. All three years in the time period were combined, and average landings per DAS for each vessel in each area was calculated, as was percent time fished in each area. Total landings attributed to the DAS Leasing Program was then calculated for both lessors and lessees by multiplying the actual days leased by the landings per DAS in each area and by the percent time spent fishing in each area. Total potential landings by lessors was then subtracted from the totals by lessees to arrive at a difference in potential landings between the two groups. Results showed an increase in mortality for all stocks, with the exception of windowpane flounder (Table 19). There was a decline in mortality for the MA stocks. On a percentage basis, increases ranged from 0.1 percent (southern SNE/MA yellowtail) to 7.6 percent (redfish). It should be noted that the stocks for which the DAS Leasing Program contributed to the highest increase in landings (i.e., increased landings at least 4 percent) (GOM haddock, GB haddock, Pollock, redfish, white hake, witch flounder, and American plaice) are all considered healthy groundfish stocks that do not need F reductions as part of this action.

To summarize the biological impacts, it is unlikely that the DAS Leasing Program is conservation neutral. The biological impacts are not the same for every stock. It is difficult to separate the biological impacts of other management measures from the impacts of the DAS Leasing Program. The relative magnitude of the impacts, however, may be imperfectly described by the information in Table 19 because of the assumptions used and the difficulty in separating the impacts of the leasing program from the impacts of other management changes. While the DAS Leasing Program may have benefited some SNE and MA stocks, it may have contributed to increased catches of several GOM and GB stocks. A key assumption when estimating biological impacts is that all fishing activity of a lessee vessel takes place in the broad

management area (GOM/GB/SNE) where most of the vessel's trips occurred. This will bias the results. As additional data become available, it may be possible to refine this analysis.

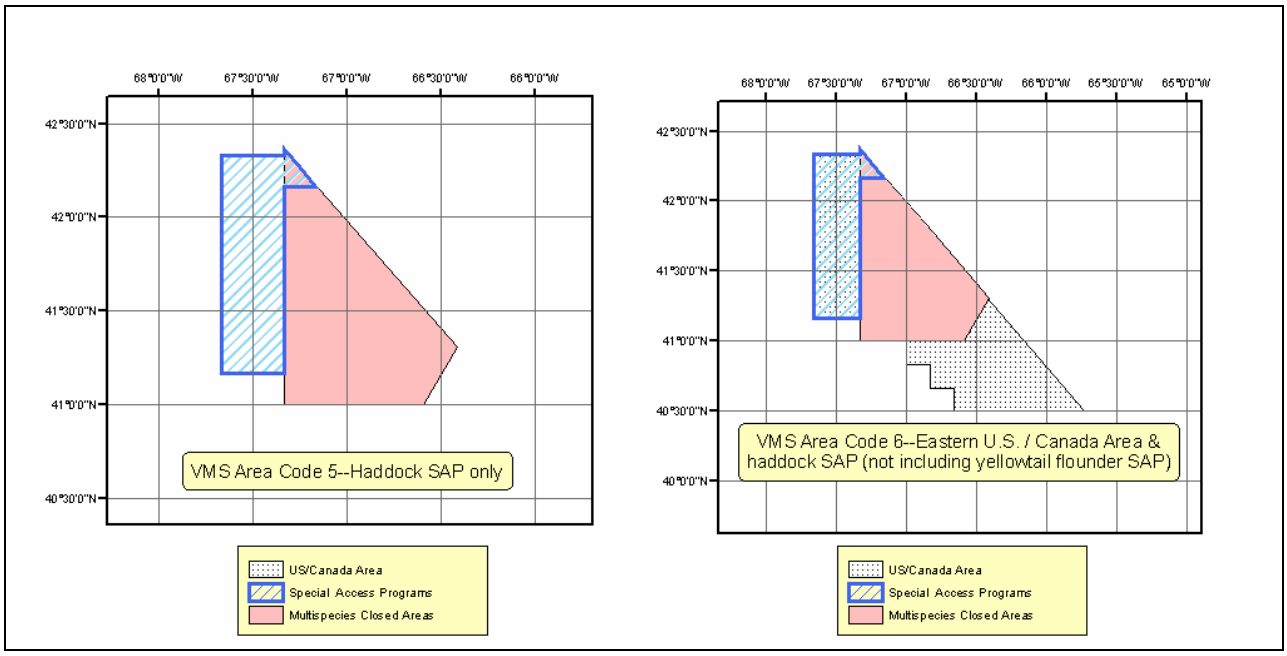
Stock Area and Species	Difference (mt, live weight)	2001-2003 Average Landings (mt, live weight)	Percent Average Landings
GOM Cod	131	4,182	3.1%
GOM Winter Flounder	14	633	2.2%
GOM Haddock	71	1,209	5.9%
CC & GOM Yellowtail Flounder	52	2,110	2.5%
GB & GOM Windowpane	-0.40	25	-1.6%
GB Cod	290	8,759	3.3%
GB Winter Flounder	50	2,177	2.3%
GB Yellowtail Flounder	16	3,200	0.5%
GB Haddock	332	5,508	6.0%
SNE/MA Yellowtail Flounder	0.53	740	0.1%
SNE/MA Winter Flounder	85	3,416	2.5%
SNE/MA Windowpane Flounder	-0.35	59	-0.6%
Redfish	28	363	7.6%
White Hake	169	3,728	4.5%
Pollock	295	4,162	7.1%
Witch Flounder	142	3,110	4.6%
American Plaice	170	3,426	5.0%

Table 19: Estimated difference in landings due to the DAS Leasing Program by stock area and species.

Eastern U.S./Canada Haddock SAP Measures

The preferred alternative would delay the start date of the Eastern U.S./Canada Haddock SAP from May 1, until August 1. The Eastern U.S./Canada Haddock SAP encompasses an area to the west of Closed Area II, including a small portion of the northernmost tip of Closed Area II (see Figure 11). A vessel may elect to fish exclusively in this SAP during a fishing trip (known as VMS Area 5), or it may elect to fish in a combination of other areas on the same trip. For the 2005 fishing year, vessels could only have elected to fish in one other area combination: VMS Area 6. This area includes the Eastern U.S./Canada Haddock SAP and the portion of the Eastern U.S./Canada Area to the southeast of Closed Area II. Data from the 2005 FY indicated that vessels took a total of 53 trips into either VMS Area 5 or 6, with 14 trips being taken in VMS Area 6.

Figure 11: Eastern U.S./Canada Haddock SAP, including VMS Area Codes 5 and 6.



Landings data from dealer electronic reports were linked to trip data from VMS to determine landings associated with trips in the Eastern U.S./Canada Haddock SAP (VMS Areas 5 or 6). Approximately 94 percent of the trips (i.e., 50 trips) were able to be linked in this manner. As a result, both trip data and landings data were prorated (i.e., multiplied by 1.06) to account for the missing landings and trip data.

According to this data, during the 2005 fishing year, a total of 37 trips were taken into this SAP between May and August. Vessels took more trips into this SAP (19 trips) and landed the most fish (802,000 lb of all species combined) in May than in either June (6 trips catching 189,000 lb of all species combined) or July (12 trips catching 399,000 lb of all species combined). Landings data for the primary regulated groundfish species landed from this SAP during this period are shown in Table 20. Other groundfish species were caught in the Eastern U.S./Canada Haddock SAP between May and July, but in lower amounts. These species include redfish, white hake, and halibut. In total, 5,730 lbs of Atlantic white hake were landed during this period, along with 1,958 lbs of redfish and 284 lb of Atlantic halibut.

Species	Cod	Yellowtail Flounder	American Plaice	Haddock	Winter Flounder	Pollock	Witch Flounder	Total
May	17,963	157,049	34,002	285,064	147,650	78,842	12,144	732,714
June	6,760	38,364	17,044	22,135	31,518	977	21,452	138,250
July	8,236	26,549	20,519	86,201	65,566	32,530	24,525	264,126
Total	32,959	221,962	71,565	393,400	244,734	112,349	58,121	1,135,090

Table 20: Landings (lbs, live weight) of regulated groundfish from vessels participating in the Eastern U.S./Canada Haddock SAP from May through July 2005.

Discard data for all groundfish species caught during this time period was not available at the time this analysis was being prepared. As a result, there was no information available to assess discard rates of a majority of the groundfish species caught between May – July. However, because discard information is collected for species managed by hard TACs for the U.S./Canada Management Areas, discard information is available for GB cod, GB haddock, and GB yellowtail flounder.

Aggregate discard rates based on data from the Observer Program is available for vessel operations in this program between May and October. During this time, vessels fishing under a Category B DAS in this SAP exhibited a discard to kept ratio for GB cod of 1.42, while those fishing under a Category A DAS exhibited a discard to kept ratio of 1.97. Averaging these two ratios together produces an average GB cod discard to kept ratio of 1.7. Vessels fishing under a Category A DAS in this SAP exhibited a discard to kept ratio of 0.16 for GB haddock and 0.05 for GB yellowtail flounder. Applying these discard to kept ratios to the amount of landings for each species produces a rough estimate of the total amount of discards of GB cod, GB haddock, and GB yellowtail flounder from this SAP, as illustrated in Table 21, and an estimate of the total amount of catch of groundfish from this SAP, as illustrated in Table 22, between May – July 2005.

	Cod	Yellowtail Flounder	Haddock	Total
May	30,537	7,852	45,610	84,000
June	11,492	1,918	3,542	16,952
July	14,001	1,327	13,792	29,121
Total	56,030	11,098	62,944	130,072

Table 21: Estimate of the amount of discard of GB cod, GB yellowtail flounder, and GB haddock (lbs, live weight) from the Eastern U.S./Canada Haddock SAP between May through July 2005.

	Cod	Yellowtail Flounder	American Plaice	Haddock	Winter Flounder	Pollock	Witch Flounder	Total
May	48,500	164,901	34,002	369,064	147,650	78,842	12,144	855,103
June	18,252	40,282	17,044	39,087	31,518	977	21,452	168,612
July	22,237	27,876	20,519	115,322	65,566	32,530	24,525	308,575
Total	88,989	233,060	71,565	523,472	244,734	112,349	58,121	1,332,291

Table 22: Estimate of the total catch (lbs, live weight) of regulated groundfish from the Eastern U.S./Canada Haddock SAP between May through July 2005.

Assuming that the landings and discard rates for regulated groundfish for FY 2006 would not substantially differ from that observed in FY 2005, the No Action alternative would result in similar amounts of groundfish catch from May through July of 2006. Accordingly, delaying the start of this SAP until August 1 under this preferred alternative would result in reductions in groundfish landings for each species approximately equal to that listed in Table 22. Haddock would see the greatest reduction in catch associated with this measure, followed by winter flounder, yellowtail flounder, pollock and cod. Although the amount of GB cod discarded under this program between May – July was greater than the catches of GB cod from vessels participating in this SAP, similar discard rates are not likely to continue under the preferred alternative based on anecdotal information that indicates that cod abundance decreases during the late summer/early fall. Such reductions in catch would loosely translate into proportional

reductions in F under the proposed measure. Therefore, the reduction in landings and discards, and therefore F, associated with the proposed delayed start date for this SAP until August 1 would likely be considerable, especially for GB winter flounder and GB yellowtail flounder, as these species require substantial reductions in F for the 2006 FY.

Although the haddock separator trawl is designed to allow for the selective targeting of haddock with minimal catch of cod or flatfish, the performance of the separator trawl in this SAP during the 2005 fishing year did not reflect this. From May through September, participating vessels caught an average of 18,361 lb of flatfish per trip using a separator trawl, including 6,890 lb of yellowtail flounder, 6,674 lb of winter flounder, and 2,200 lb of both American plaice and witch flounder per trip. As a result, the implementation of possession limits for flatfish (500 lb per trip) and incidental catch TACs for GB winter and yellowtail flounder will affect vessel operations in this SAP.

Once the proposed incidental catch TACs are caught, the use of Category B DAS in this SAP would be prohibited. Using the average catch per trip during 2005, the proposed 2006 incidental catch TACs for GB winter flounder (14.25 mt, or 31,416 lb) and GB yellowtail flounder (20.7 mt, or 45,635 lb) in this SAP would be caught within five and seven trips, respectively. However, combined with the restrictive flatfish trip limits, it is unlikely that these catch rates would be continued, as there would be fewer incentives to target or catch flatfish. This suggests that the incidental catch TACs would likely result in the closure of the SAP to the use of Category B DAS shortly after the opening of the SAP, although likely after more than the 5-7 trips it would take to catch these TACs based on the catch rates observed in 2005. Assuming that participating vessels catch 500 lb of only winter flounder per trip (the proposed possession limit), up to 62 trips would be able to be taken under a Category B DAS in this SAP before the GB winter flounder TAC would be caught.

When properly configured, the haddock separator trawl could effectively eliminate catches of American plaice and witch flounder (NEFMC 2004) and likely the other flatfish species previously caught in this SAP. As a result, the flatfish possession limits proposed by this action would substantially reduce catch of these species from this SAP. However, should the nets continued to be operated in the manner observed during the 2005 fishing year, the flatfish catch described above could result in any fish in excess of the trip limits to be discarded, resulting in decreased benefits from these possession limits. However, if utilized in the proper manner, as influenced by the incidental catch TACs and the low trip limits for flatfish, the haddock separator trawl could dramatically reduce flatfish catch from this SAP and allow the SAP to remain open longer and the fishery to more closely reach OY from the available haddock on GB.

Eastern U.S./Canada Area Trip Flexibility

This proposed measure would allow vessels fishing in the Eastern U.S./Canada Area to choose to fish outside the Eastern U.S. Canada Area on the same trip, provided the vessels declare through VMS their intent to fish in this manner. Cod, haddock, and yellowtail flounder caught outside the area would count toward the U.S./Canada Management Area TACs even if the fish are caught in another stock area. If a vessel remains in the Eastern U.S./Canada Area for the duration of the trip, it would not be charged steaming time to the area. However, if the vessel fishes inside and outside of the Eastern U.S./Canada Area on the same trip, the vessel would be charged for steaming time to/from the Eastern U.S./Canada Area. The primary intent of this

measure is to reduce economic risk (and therefore indirectly increase vessel safety) by allowing vessels to depart the Eastern U.S./Canada Area (presumably when there is bad weather), and fish outside the area. Allowing such a choice would reduce the chances of an economic loss for the trip and therefore reduce the economic incentive for a vessel operator to fish under unsafe weather conditions.

The measure would have little or no biological impact because it is not expected to result in increased fishing effort and the proposed associated restrictions would resolve potential issues related to the U.S./Canada Management Area hard TACs. The proposed measure would not result in additional fishing effort to the Eastern U.S./Canada Area because providing additional flexibility for vessels fishing in the Eastern U.S./Canada Area is not expected to be the determining factor for vessel owners in deciding whether to take such a trip (to the Eastern U.S./Canada Area). For vessels that chose to fish in the Eastern U.S./Canada Area, the incentive to fish outside the area on the same trip is greatly reduced by the fact that they would be charged Category A DAS for the time spent fishing outside the area. In doing so, this may, in fact, reduce fishing effort in the Eastern U.S./Canada Area, as vessels would be using fewer Category B DAS in the area. Vessels operators have a choice to fish exclusively in the Eastern U.S./Canada Area, and have DAS charged only for the time spent fishing inside the Area. Vessels would choose to fish outside the Eastern U.S./Canada Area only on trips where fishing inside the area is not profitable enough. In other words, on trips where bad weather cuts the trip to the Eastern Area short, or the trip is not expected to be profitable for some other reason, such as a lack of the target species. Furthermore, the proposed measure that requires any cod or haddock caught on trips both inside and outside of the Eastern U.S./Canada Area to be counted against the pertinent U.S./Canada Hard TAC, ensures that such flexibility does not undermine the management of the hard TACs. If the cod or haddock caught outside the Eastern Area were not counted against the hard TAC, there would exist an incentive for vessel owners to report (untruthfully) that fish caught inside the Eastern U.S./Canada Area were caught outside the area, in order to under-report the catch of Eastern U.S./Canada fish and prolong the duration the fishery.

Trip Limits

Under the preferred alternative, trip limits would be reduced for GOM cod and CC/GOM, GB, and SNE/MA yellowtail flounder. Trip/possession limits reduce mortality only if fishermen alter behavior because of the limits. If they continue to fish in a way that catches these species, and merely discard the overage, there is no benefit to a trip limit. It is not possible to predict how fishermen will react to changes in a trip limit. Previous analysis conducted in Amendment 13 suggests that a reduction of the GOM cod and SNE/MA yellowtail flounder trip limit may reduce F by an additional 5-percent, but would increase discards by approximately 10-percent (see Figures 143 and 145 of NEFMC 2003). The CAM described in Section 8.1.1.1 incorporated the proposed trip limits in order to estimate the impacts of the combined measures proposed by this action on F. However, due to the nature of the CAM and the interaction of the management measures proposed by this action, it is not possible to isolate the biological impacts of the proposed trip limits. As a result, precise estimates of the impact of the proposed trip limits on discard rates are not available at this time. Overall, the biological impacts of these trip limits is included in the results of the CAM and described in Section 8.1.1.1 above and is expected to be positive despite the likely increase in resulting discards.

8.1.1.2 Recreational Measures

Methods

Analysis of the impact of these measures on expected mortality of GOM cod required compilation of data on the seasonal and size distribution of recreational harvest of cod by mode. The Marine Recreational Fisheries Statistics Survey (MRFSS) represents the best available source of data to meet these requirements for several reasons. First, no other data are collected to estimate the needed relationships for the private boat mode. While VTR records do provide sufficient information on total harvested cod, no data are collected on the size of fish caught nor is it possible to ascertain numbers of fish caught by individual anglers.

Estimates of recreational harvest of GOM cod were obtained by combining intercept and household data collected through the MRFSS for the states of Maine, New Hampshire, and Massachusetts. All harvested cod (catch types A and B1) attributable to intercept sites in either Maine or New Hampshire were assumed to be harvested from the GOM. Massachusetts intercept sites border either the GOM or GB with Cape Cod (Barnstable County) being a dividing line between the two. Therefore, all cod landed at Massachusetts intercept sites in counties north of Cape Cod were assigned to the GOM while cod landed at intercept sites southward of the Cape were assigned to GB. Cape Cod itself was divided between the GOM and GB depending upon which stock area was immediately adjacent to the intercept site. In general, this meant that sites with immediate access to Cape Cod Bay were be assigned to the GOM while others on the South side of the Cape were assigned to GB. A post-stratified estimate of numbers of harvested cod was obtained by multiplying the estimated mean harvest (MRFSS intercept survey) by the weighted estimate of effort (MRFSS household survey) for each wave/mode strata and summing across all strata.

The MRFSS sampling design is based on six 2-month waves beginning with wave one in January-February and ending with wave 6 in November-December. In the New England states, the MRFSS is not conducted during wave one and is not conducted in either Maine or New Hampshire during wave six due to low levels of fishing activity. Although sampling is based on a 2-month wave, dates for both intercepted trips and for household interviews are recorded making it possible to calculate monthly estimates of recreational harvest. Note, however, that monthly estimates for November and December are based only on cod fishing activity from Massachusetts and no data were available to estimate cod harvest during January and February. The VTR records indicate that total cod retained in the GOM during the months of January and February averaged less than 2 percent of annual totals from 2001 to 2004 so the absence of data for wave 1 is not likely to have an appreciable affect on estimates of biological impact. The absence of MRFSS data for Maine and New Hampshire during the months of November and December may under-represent the total harvest of cod in the party/charter mode during these months by approximately 30 percent. However, November and December only account for a small proportion of total harvested cod such that the combined effect of missing wave one and wave 6 data amount to just over 2 percent of total harvested cod in the party/charter mode. The potential impact of missing information on MRFSS estimates for the private boat mode is not known since there are no other independent data sources to use as a basis for comparison. Given weather conditions prevailing during January and February it seems likely that private boat effort in the GOM would be very low. Similarly, private boat effort during the months of November

and December is also likely to be low, so the potential information loss during waves one and six seems likely to be even less than that of the party/charter mode.

With the exception of calendar year 2001, the monthly pattern of cod harvested in the party/charter mode is similar in all years with about half of all GOM cod landed from March through June (Figure 12a). In general the party/charter season begins in April, runs through the summer months and into September but starts to wind down in October through December. Note that the inter-annual differences in the proportion of cod (calculated by subtracting the cumulative percent from one month to the next) are greater during the spring and early summer (March through July) than they are in the late summer and fall. This means that potential impacts of measures effective during March-July may be more uncertain in a relative sense than estimated impacts for measures implemented from August-December.

The monthly pattern in MRFSS estimates for the private boat mode indicates that the seasonal distribution of harvested cod differs considerably from year to year (Figure 12b) although the fishing season appears to be similar to that of the party/charter mode. That is, most cod tends to be caught during the summer months (May through August) with the exception of 2004 where more cod were harvested in September than in any other month. It is notable that proportionally more cod are harvested in the GOM by private boat anglers during the late fall as compared to party/charter anglers. Given the observed inter-annual variability in monthly harvest of cod the potential impact of recreational fishing measures that involve a seasonal prohibition on possession of cod will be subject to uncertainty.

Figure 12a: Seasonal Distribution of Harvested GOM Cod in the Party/Charter Mode for Calendar Years 2001 – 2004.

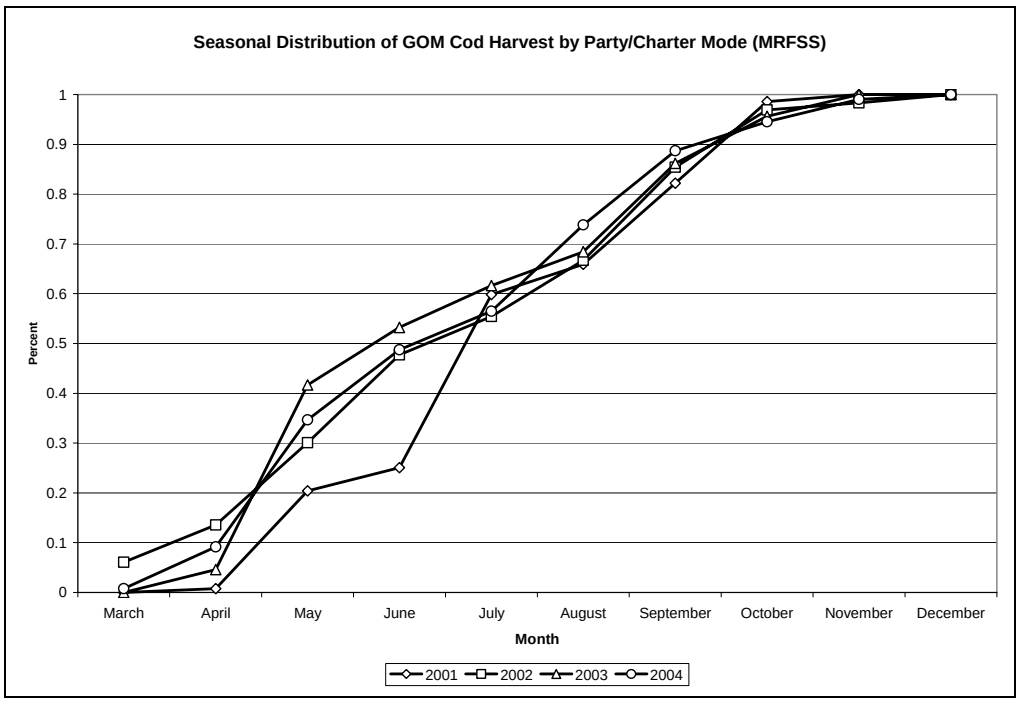
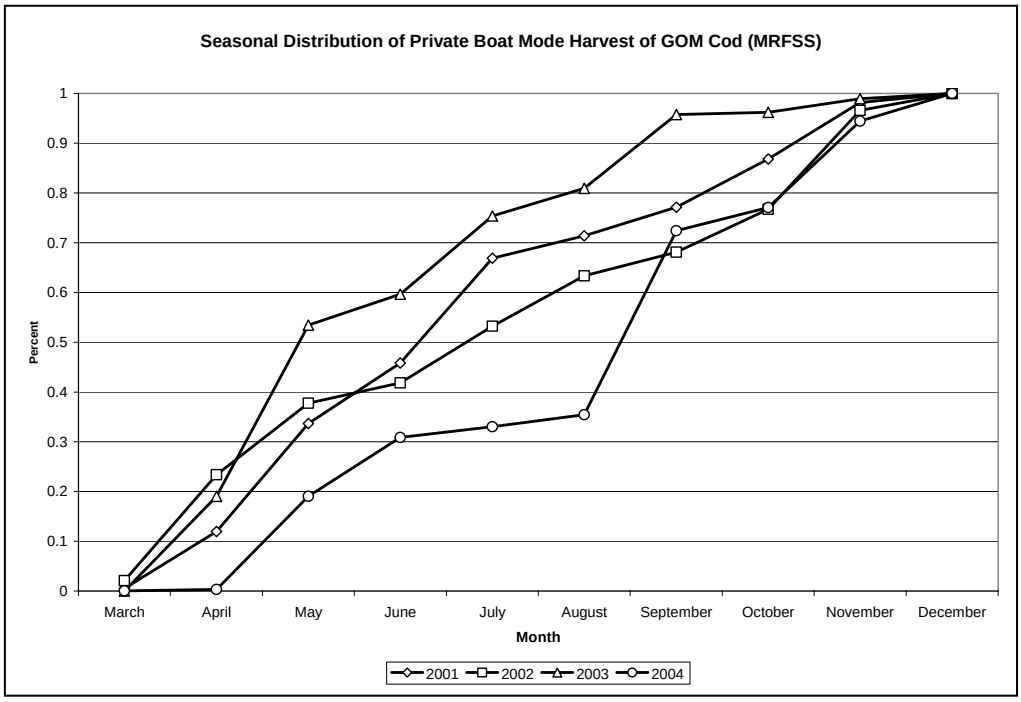


Figure 12b: Seasonal Distribution of Harvested GOM Cod in the Private Boat Mode for Calendar Years 2001 – 2004.



The MRFSS intercept survey collects data on numbers of fish kept per angler trip. Estimates of numbers of cod harvested when only one fish is retained or when only two fish are retained, and so on, are obtained by applying the estimated proportions for each catch class from the raw intercept data to the estimated number of trips taken by each wave/mode/state strata then summing across all strata. Due to known low sample sizes in the party/charter mode, beginning in 2003 in the Northeast region, the MRFSS changed its sampling strategy by using a captain call-back to estimate effort and placing samplers on-board party/charter vessels to monitor catch and to conduct biological sampling (lengths and weights) of the catch. This change has led to a significant increase in the sample sizes needed to estimate the characteristics of the party/charter mode harvested catch. For this reason, the distribution of recreational harvest of GOM cod by kept catch class was based on calendar year 2003 and 2004.

The distribution of GOM cod by kept catch class was nearly identical for both 2003 and 2004 in the party/charter mode (Figure 13a). The median number of fish kept per angler was three cod in both years. With full compliance with the bag limit that had been implemented during these years there should be no angler trips that retained more than 10 cod, but in both 2003 and 2004 some portion of the retained catch exceeded the bag limit. These occasions represented respectively, about 2 percent and 7 percent of kept catch in 2003 and 2004. Note that even for instances where the bag limit was exceeded the actual measure of non-compliance is the difference between the actual kept catch and the bag limit. That is, the proportion of party/charter mode kept catch that actually exceeded the bag limit was less than 1 percent in 2003 and just over 2 percent in 2004.

Retained GOM cod in the private boat mode in 2003 differed markedly from that of 2004 (Figure 13b) and show an increase in the proportion of harvested cod associated with higher

numbers of cod kept per angler trip. For example, in 2003 the median retained catch was about four cod, whereas the median number of cod retained in 2004 was six cod. Compliance with the bag limit was high at 99 percent or better in both years.

Figure 13a: Distribution of GOM Party/Charter Mode Harvest of Cod by Catch Class in Numbers of Cod.

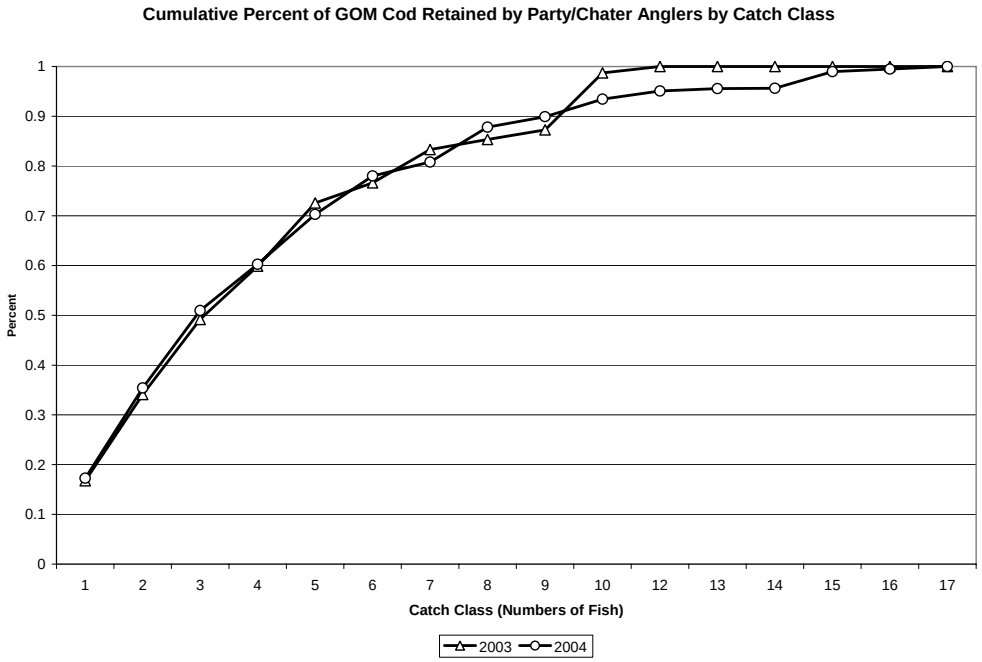
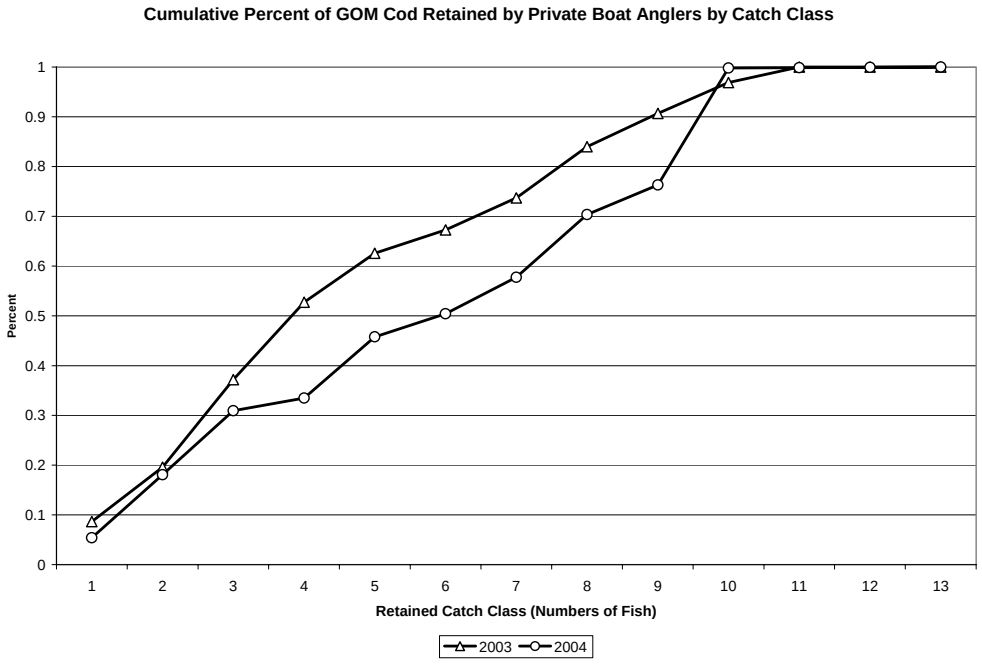


Figure 13b: Distribution of GOM Private Boat Mode Harvest of Cod by Catch Class in Numbers of Cod.



The size distribution of recreationally harvested cod was estimated by calculating the proportion of fish in each size increment (in inches) from measured fish on the MRFSS intercept survey. As noted previously, the MRFSS changed its sampling strategy beginning in 2003 in the Northeast by using a captain call-back to estimate effort and placing samplers on-board party/charter vessels to monitor catch and to conduct biological sampling (lengths and weights) of the catch. This change has lead to a significant increase in the sample sizes needed to estimate the size distribution of the party/charter mode harvested catch. For this reason, the size distribution of recreational harvest of GOM cod was based on calendar year 2003 and 2004.

The size distribution of GOM cod harvested in the party/charter mode was similar in both 2003 and 2004 (Figure 14a) although the cumulative distribution for calendar year 2004 lies everywhere to the left of 2003 which is indicative of a change in the size distribution in 2004 resulting in proportionally more fish harvested at smaller sizes than was the case in 2004. The size distribution of harvested fish (i.e. those fish that are actually retained by the angler) includes both legal (22" or greater) and sub-legal fish. The proportion of harvested cod that were below the minimum size was about 5 percent in 2003 and 7 percent in 2004.

Compared to party/charter mode, there were much greater differences in the size distribution for GOM cod harvested in the private boat mode between calendar years 2003 and 2004 (Figure 14b). Specifically, the size distribution for 2004 is shifted much more toward smaller size cod than was the case in 2003 as the median size cod was 25-inches in 2003 but was 23-24-inches in 2004. The proportion of cod below the minimum size was also larger in 2004 (17 percent) than it was in 2003 (14 percent). The larger apparent differences between the 2003 and 2004 cumulative length compositions for the private/rental mode vs. the party/charter mode may simply reflect the small sample sizes from the private/rental mode. There were only 104 and 81 fish measured in 2003 and 2004, respectively from the private/rental mode compared to 546 and 711 fish measured in 2003 and 2004, respectively from the party/charter mode.

Figure 14a: Size distribution of GOM cod harvested in the party/charter mode (MRFSS calendar years 2003 and 2004).

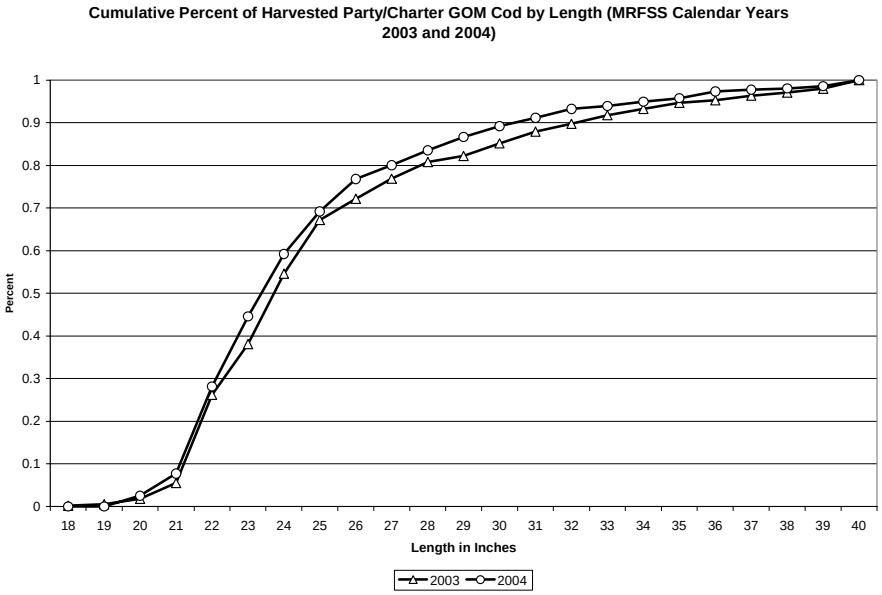


Figure 14b: Size distribution of GOM cod harvested in the private boat mode (MRFSS calendar years 2003 and 2004).

Data for calendar year 2004 were selected for purposes of analyzing the impact of the proposed recreational fishing measures. These data were selected because they represent the most recent available and should, therefore, reflect contemporary stock conditions such as abundance and size distribution of the GOM cod population exploited by recreational anglers. The impact of the recreational measures on harvested GOM cod was simulated by applying these measures to the observed harvest by mode. The underlying assumption herein is that trips taken during calendar year are representative of fishing trips in terms of catch and numbers of trips that would be taken in 2006 when the proposed measures would be implemented. This assumption may be more likely to hold for the party/charter mode since the seasonal pattern of landings, kept catch class, and size distribution of kept catch were reasonably stable from year to year. By contrast, inter-annual differences in private boat mode trips were considerably greater. Thus, at least in relative terms, the estimated impacts of the proposed recreational measures are likely to be more uncertain for the private boat as compared to the party/charter mode.

Since some portion of the 2004 harvest did not comply with existing minimum size or bag limits, the portion not in compliance was trimmed to avoid the possibility of double-counting these observed illegal harvests as either a conservation benefit or additional mortality. The trimmed data represent a benchmark against which the impact of changes to recreational regulations was measured. Procedurally, these changes were estimated by first identifying the portion of the 2004 harvested catch that may be affected by the regulations and the portion of the harvest that would not be affected. The latter was assumed to be harvested while the former was assumed to either be retained illegally or released where released cod were assumed to be subject to some mortality. The observed non-compliance rates for 2004 by mode (17 percent and 10 percent for minimum size for private boat and party/charter modes respectively) were assumed to apply to any new size limit. There have been no published studies of release mortality for recreationally caught cod. As part of a study by Farrington (1998) on survival of longline-

caught cod and haddock, 129 cod were caught using a jig on the third cruise and used as a comparison to longline caught cod. Fish were caught, kept in a tank with chilled and aerated seawater before they were placed in cages where they were held for 72 hours. Cages were set on the sea floor at depths equivalent to the depths in which the fish were caught. After 72 hours, cages were retrieved and dead and alive cod and haddock were removed. Forty-four percent of jigged cod were alive and 56 percent were dead. For fish over 38 cm (38 cm was the modal length in this experiment), 50 percent were alive/dead. For fish less than 38 cm, 27 percent were alive and 73 percent were dead. Researchers were uncertain whether to attribute this substantial mortality to the handling process or the fish capture process. Fish were brought to surface quickly and air bladders were distended. While this study may not duplicate recreational conditions it does indicate that release mortality for hook-caught fish may exceed 50 percent. To account for this uncertainty a sensitivity analysis was conducted using release mortality of from zero to 50 percent in increments of 10 percent.

Summing the three sources of mortality (legal harvest, illegal harvest, and release mortality) results in an estimate of the total mortality associated with the proposed measures. This estimate is then compared to the benchmark (calendar year 2004) to compute a percent reduction in exploitation by mode.

Analysis

The proposed measures would implement a seasonal GOM cod possession prohibition along with an increase minimum size for GOM cod. These measures would not prevent either private or party/charter passengers from fishing for groundfish (haddock in particular) which would likely result in some uncertain bycatch of cod. However, since the MRFS data is not adequate to estimate potential bycatch rates of cod when anglers are targeting haddock, it was assumed that a closed season would be equivalent to a prohibition on the possession of cod. This assumption is evaluated in a subsequent section.

The estimated reduction in GOM cod mortality of the combined preferred alternative measures ranged from a high of about 41 percent for both private and party/charter modes at zero release mortality to a low of 31 percent and 24 percent for private boat and party/charter modes respectively when discard mortality is assumed to be as high as 50 percent (Table 23). The estimated impacts between the two modes diverge as assumed release mortality increases because proportionally more 22 and 23-inch cod were in the party/charter mode total harvest in 2004 than was the case for the private boat mode. This means that as the release mortality increases the estimated biological impact declines more rapidly compared to the private boat mode.

The results in Table 23 demonstrate that the seasonal closure for possession of cod and the size limit change have very different impacts on the two recreational modes. A closed season alone reduces cod exploitation by 21 percent for the private boat mode, as compared to 6 percent for the party/charter mode. This is because a larger proportion of the private boat harvest of cod occurs during the closure months (the month of November in particular) as compared to the party/charter mode. This does not appear to be an artifact of the MRFSS calendar year selected for analysis since the selected closure months accounted for an average of 17 percent of total private boat harvest of GOM cod as compared to almost 7 percent for the party/charter mode for calendar years 2001-2004.

	Seasonal Closure Impact		Size Limit Impact		Combined Impact	
Release Mortality	**Private Boat**	**Party/Charter**	**Private Boat**	**Party/Charter**	**Private Boat**	**Party/Charter**
0%	-20.9%	-6.2%	-24.8%	-36.8%	-40.6%	-40.8%
10%	-20.9%	-6.2%	-22.4%	-33.2%	-38.6%	-37.3%
20%	-20.9%	-6.2%	-19.9%	-29.5%	-36.6%	-33.8%
30%	-20.9%	-6.2%	-17.4%	-25.8%	-34.7%	-30.4%
40%	-20.9%	-6.2%	-14.9%	-22.1%	-32.7%	-26.9%
50%	-20.9%	-6.2%	-12.4%	-18.4%	-30.7%	-23.5%

Table 23: Impact of recreational harvest of GOM cod by proposed measure and mode of fishing.

While the season closure had a comparatively larger impact on the private boat mode, the opposite would be true if the 24-inch size limit were the only measure. The size limit has a comparatively larger impact on the party/charter mode, because as noted previously, proportionally more 22-24 cod are landed in the party/charter mode than in the private boat mode.

The impact of both recreational measures implemented simultaneously is not equal to the sum of the individual measures. This is because the impact of the seasonal closure does not include the benefit of the increased size. Similarly, the impact of a size limit does not include the benefit from the closed season. Notably, the conservation objective for GOM cod cannot be met for both modes simultaneously by implementing either measure separately but would be met as proposed depending on the realized release mortality. The sensitivity test indicates that the conservation objectives would be met for both private boat and party/charter modes if release mortality is 30-percent, or less.

Assessment of By-Catch Rates of GOM Cod on Party/Charter Trips that Target Haddock

The proposed recreational measures include a seasonal prohibition on the possession of cod. A prohibition on possession of cod does not necessarily mean that no cod will be caught as long as private boat and party/charter vessels continue to take groundfish trips. According to estimates using MRFSS data the proportion of trips that targeted haddock across modes ranged from a low of 36 percent in the private boat mode in 2003 to a high of 80 percent in the party/charter mode in 2002 (Table 24). These data are suggestive that cod is frequently caught on trips targeting haddock but cannot be used to estimate a bycatch rate due to low sample sizes. Instead, the party/charter VTR's were queried for purposes of calculating an estimate of cod bycatch on directed haddock trips. Note that even these data may not completely reflect potential changed fishing practices in response to a zero possession of cod since cod possession was legal on all observed trips to date.

Year	Private Boat	Party/Charter
2001	0.44	0.48
2002		0.80
2003	0.36	0.56
2004	0.51	0.53

Table 24: Proportion of GOM trips that targeted haddock that also caught cod by fishing mode (MRFSS 2001-2004).

According to the Recreational Advisory Panel, party/charter vessels are able to target haddock with low bycatch of cod and went on to note that many trips have already switched over to targeting haddock instead of cod. To assess potential cod catch rates on targeted haddock trips the party/charter VTR were queried for FY2001 through FY2004.

During FY2001 only 8 trips (0.2 percent) reported keeping only haddock in the GOM and 2,028 trips (44 percent) only kept cod (Table 25). Of the remaining trips, the overwhelming majority (2,243 compared to 325) retained more cod than haddock. In FY2002 the relative importance of haddock increased and has increased in every year since such that only 807 of 4,280 trips (19 percent) retaining either cod or haddock kept only cod in FY2004. The number of trips that retained only haddock increased to 62 in FY2004 but still represented only 1.4 percent of the total.

Trip Type	FY 2001	FY 2002	FY 2003	FY 2004
More Haddock Than Cod	325	639	808	1621
More Cod Than Haddock	2243	2160	2309	1790
Only Cod	2028	1392	1205	807
Only Haddock	8	33	36	62
Total Trips	4604	4224	4358	4280

Table 25: Total trips by composition of cod and haddock on GOM Party/Charter VTR's reporting retention of either cod or haddock.

The number of trips where the number of haddock retained exceeded cod nearly doubled from FY2001 (325) to FY2002 (639); increased by about 25 percent from FY2002 to FY2003 (808) but doubled from FY2003 to FY2004 (1,621) (see Table 3). At a minimum, these trips represent occasions where haddock was strictly greater than 50 percent of total combined cod and haddock. Compared to FY2001 the distribution of the proportion of haddock retained has shifted in all other years toward higher retention of haddock for percentiles at the median or above (Table 26). For example, in FY2001 the proportion of haddock retained was 69 percent at the 75th percentile but increased to between 75 and 78 percent in FY2002 through FY2004. These data indicate that targeting of haddock has increased relative to FY2001.

Percentile	FY 2001	FY 2002	FY 2003	FY 2004
Maximum	0.96	0.98	0.99	0.99
0.99	0.93	0.96	0.97	0.96
0.95	0.85	0.92	0.91	0.91
0.9	0.78	0.88	0.87	0.88
0.75	0.69	0.78	0.75	0.78
Median	0.61	0.65	0.65	0.67
0.25	0.57	0.57	0.57	0.58
0.1	0.53	0.54	0.54	0.54
0.05	0.52	0.53	0.53	0.53
0.01	0.51	0.51	0.51	0.51
Minimum	0.51	0.51	> 0.50	> 0.50
N	325	639	808	1621

Table 26: Distribution of proportion of haddock to total combined cod and haddock for GOM party/charter trips retaining both cod and haddock.

Data reported in Table 26 represent trips where haddock was more than 50 percent of retained catches of cod and haddock; a level that, while high, may not be considered reflecting potential bycatch rates of cod while targeting haddock during a seasonal prohibition on cod retention. Instead by-catch rates of cod were estimated for trips where haddock was at least 75 percent of combined cod and haddock. The bycatch rate of cod for all trips in the GOM that retained at least 75 percent haddock was estimated to be 0.20 in 2003 and 0.21 in 2004 (no trips matching this targeting criterion were identified in either 2001 or 2002). Thus, approximately 1 cod may be expected to be discarded for every five haddock retained, regardless of which option is eventually selected.

The impact that such a discard rate would have on the conservation objectives for cod depends on the release mortality. Assuming a release mortality of 50 percent means that 1 cod may be expected to be killed for every 10 haddock retained while a release mortality of 10 percent would mean that 1 cod would be killed for every 100 retained haddock. For this reason, the impact on GOM cod mortality associated with fishing for haddock during a seasonal prohibition on cod possession is uncertain. However, some discard mortality may be expected which should be accounted for in assessing the conservation effectiveness of any proposed option.

8.1.2 Impacts on Other Species/Bycatch

The preferred alternative may have impacts on other species. The most probable impact is the result of catches of other species that result from groundfish fishing activity. The following section discusses the catch of non-groundfish species that may result from each proposed measure. Part of this catch may be discarded, generally described as bycatch by the MSA. For regulated groundfish species, bycatch is discussed in the previous section.

Differential DAS Counting

Differential DAS counting measure proposed in this action is likely to have a positive impact on other species, as it would reduce the number of groundfish DAS available to be used for the duration of this emergency action. In doing so, it is likely that catches of other species while operating under a groundfish DAS would be reduced proportional to the reduction in available DAS caused by differential DAS counting, assuming that catch rates of other species/groundfish DAS remain constant. This measure is unlikely to have any direct impacts on bycatch or bycatch mortality, as vessels would continue to operate in a manner that would maximize returns from available DAS.

Incidental Catch TACs for GB Winter Flounder and GB Yellowtail Flounder

The impacts on other species from the incidental catch TACs for GB winter flounder and GB yellowtail flounder proposed in this action have been assessed in the analysis prepared for a separate action currently being developed by NMFS. In summary, these incidental catch TACs will not have much of an influence on the amount of non-groundfish landed by other fisheries because these TACs do not limit the activity of these other fisheries. It is possible, however, that the proposed TACs may result in minor changes to the amount of non-groundfish species caught

by the groundfish fishery operating on GB. This is because the small incidental catch TACs and the associated small possession limits for these species may influence groundfish vessels operating on GB to catch and retain other species in order to cover the expenses associated with a fishing trip to GB. It is unclear, however, just how much these TACs will influence the catch and bycatch rates of other species.

Modified Regular B DAS Program

As noted in Tables 12 and 13 above, there are several species that may be presumed to be the primary targets or component catch on a regular B DAS trip. In addition to haddock, species that accounted for at least 30 mt included monkfish, summer flounder, American lobster, winter skate, pollock, and redfish. Potential impacts on these species were estimated by multiplying the calculated median and mean landings per DAS (Table 27) by the estimated number of Regular B DAS reported in the last column of Table 18 above. Since the preferred alternative would still permit the use of Regular B DAS to target monkfish landings inside the U.S./Canada Management Area, landings from these trips were assumed to remain constant. Adding landings from Regular B DAS monkfish trips to the estimated landings on multispecies Regular B DAS trips yields an estimate of total FY2006 landings.

Compared to the four-quarter period beginning in quarter 3 of FY2004 through quarter 2 of FY2005, landings of haddock would increase slightly in FY2006 while expected landings of all other species would be lower by at least one-third (Table 28). Haddock landings are estimated to increase slightly because all available Regular B DAS would be expected to be used to target haddock. In this manner, haddock landings would remain almost constant even though total estimated Regular B DAS used would be down considerably. Since catch rates of most other species would be lower on directed haddock trips, the lower level of Regular B DAS use would result in overall reductions for all species other than haddock. For example, using the median catch rate would result in monkfish landings of about 30 percent of FY04/05 levels. Similarly, redfish would be down to just 23 percent of the FY04/05 level and landings of all other species would be down to about 10 percent of their FY04/05 four-quarter period levels.

Quarter	Monkfish	American Lobster	Winter Skate	Summer Flounder	Atlantic Sea Scallops	Haddock	Pollock	Redfish
Median Live Weight (mt) per DAS								
Quarter 1	0.1065	0.0000	0.0000	0.0065	0.0000	2.5470	0.0000	0.0000
Quarter 2	0.2903	0.0000	0.0000	0.0000	0.0000	1.0227	0.0313	0.0272
Quarter 3	0.0904	0.0000	0.0000	0.0730	0.0000	1.1203	0.0015	0.0000
Quarter 4	0.0738	0.0041	0.0000	0.0000	0.0000	2.1234	0.0239	0.0000
Mean Live Weight (mt) per DAS								
Quarter 1	0.1887	0.0057	0.0000	0.0048	0.0000	2.5481	0.0097	0.0025
Quarter 2	0.4184	0.0063	0.0010	0.0020	0.0080	1.2916	0.1218	0.0418
Quarter 3	0.1007	0.0187	0.3935	0.0668	0.0356	1.3490	0.0248	0.0141
Quarter 4	0.4473	0.0198	0.1878	0.0063	0.0000	2.7358	0.2820	0.0599

Table 27: Landings (mt live weight) per DAS by species on trips with at least 50% haddock.

Species	Landings on FY06 Regular B DAS Haddock Trips	Landings on FY06 Regular B DAS Monkfish Trips	Total Landings on Regular B DAS	FY2004/05 Landings	Percent of FY04/05
Impacts at Median Landings per DAS					
Monkfish	103.5	155.3	258.8	890.1	29.1%
Lobster	1.1	5.3	6.4	69.8	9.1%
Fluke	1.6	2.3	3.9	39.2	9.8%
Scallops	0.0	14.8	14.8	135.0	11.0%
Haddock	901.1	12.7	913.8	885.0	103.2%
Pollock	15.0	10.9	25.9	282.1	9.2%
Redfish	7.6	1.3	8.9	38.0	23.3%
Impacts at Mean Landings per DAS					
Monkfish	211.1	155.3	366.4	890.1	41.2%
Lobster	5.8	5.3	11.1	69.8	15.8%
Fluke	2.9	2.3	5.2	39.2	13.3%
Scallops	3.1	14.8	17.9	135.0	13.3%
Haddock	924.6	12.7	937.3	885.0	105.9%
Pollock	87.1	10.9	98.0	282.1	34.7%
Redfish	23.6	1.3	24.9	38.0	65.5%

Table 28: Preferred alternative impacts on landings (mt, live weight) of other species on Regular B DAS.

Monkfish Category C and D Restrictions

The following analysis was taken directly from the draft EA prepared for FW 42 (NEFMC 2006). Monkfish DAS use for FY 2005 (first 6 months) is higher than in any previous fishing year. This is cause for concern for two reasons: (1) The FY 2005 trip limits for the SFMA are approximately 40 percent lower than the FY 2003 trip limits established for this area, yet DAS usage is approximately 17 percent higher, and (2) FY 2005 monkfish landings for the SFMA for the period May through August are at 48 percent of the target TAC for this management area, which is slightly higher than the percentage of the target TAC that had been harvested for the same time frame for FY 2004 (42 percent).

The proportion of monkfish landings from the Regular B DAS Program to total monkfish landings by management area, and coastwide, indicate increased usage of Regular B DAS to target monkfish during the months of June through September 2005 (Table 29). For example, the proportion of monkfish Regular B DAS landings in the NFMA increased from 2.5 percent in May to over 15 percent in June and July. The proportion of monkfish Regular B DAS landings in the NFMA decreased to 8 percent and 10 percent in August and September, respectively, but increased dramatically during these months in the SFMA to 24 percent and 45 percent, respectively. Furthermore, on a coastwide basis, the proportion of monkfish landings resulting from the Regular B DAS Program steadily increased from a 4.7 percent in May to just over 20 percent in September.

Month	NFMA Monkfish Landings on B-regular DAS (1)	SFMA Monkfish Landings on B-regular DAS (2)	Coastwide Monkfish Landings on B-regular DAS (3)=(1)+(2)	NFMA Monkfish Landings* (4)	SFMA Monkfish Landings* (5)	Coastwide Monkfish Landings* (6)=(4)+(5)	Proportion of NFMA monkfish landings from B-reg. DAS (7) = (1)/(4)	Proportion of SFMA monkfish landings from B-reg. DAS (8) = (2)/(5)	Proportion of coastwide monkfish landings on B-reg. DAS in NFMA (9) = (1)/(6)	Proportion of coastwide monkfish landings on B-reg. DAS in SFMA (10) = (2)/(6)	Proportion of coastwide monkfish landings from the B-Reg. DAS program (11) = (3)/(6)	NFMA proportion of B-DAS program landings (12) = (1)/(3)	SFMA proportion of B-DAS program landings (9) = (2)/(3)
Nov-04	2,354		2,354	2,361,975	1,562,192	3,924,167	0.1%	0.0%	0.1%	0.0%	0.1%	100.0%	0.0%
Dec-04	92,590	182,296	274,886	2,378,838	1,293,171	3,672,008	3.9%	14.1%	2.5%	5.0%	7.5%	33.7%	66.3%
Jan-05	173,667	89,617	263,285	1,684,332	1,123,671	2,808,003	10.3%	8.0%	6.2%	3.2%	9.4%	66.0%	34.0%
Feb-05	184,108	188,783	372,891	1,871,575	739,865	2,611,440	9.8%	25.5%	7.1%	7.2%	14.3%	49.4%	50.6%
Mar-05	127,548	12,341	139,888	1,973,209	773,379	2,746,588	6.5%	1.6%	4.6%	0.4%	5.1%	91.2%	8.8%
Apr-05	152,295	18,101	170,396	1,855,183	1,424,921	3,280,104	8.2%	1.3%	4.6%	0.6%	5.2%	89.4%	10.6%
May-05	26,188	186,935	213,123	1,044,022	3,446,521	4,490,543	2.5%	5.4%	0.6%	4.2%	4.7%	12.3%	87.7%
Jun-05	339,540	70,221	409,761	2,158,494	4,474,085	6,632,579	15.7%	1.6%	5.1%	1.1%	6.2%	82.9%	17.1%
Jul-05	298,969	37,892	336,861	2,087,507	1,972,774	4,060,281	14.3%	1.9%	7.4%	0.9%	8.3%	88.8%	11.2%
Aug-05	178,019	242,673	420,692	2,221,125	1,012,590	3,233,716	8.0%	24.0%	5.5%	7.5%	13.0%	42.3%	57.7%
Sep-05	212,147	376,495	588,643	2,105,677	833,319	2,938,996	10.1%	45.2%	7.2%	12.8%	20.0%	36.0%	64.0%
Oct-05	69,001	56,421	125,422	-	-	2,411,146							
Total	1,856,427	1,461,774	3,318,201	21,741,939	18,656,488	42,809,573	Average proportions (Dec-04 - Sep-05)						
Total Dec-04 - Sep-05	1,785,072	1,405,353	3,190,425	19,379,964	17,094,296	36,474,260	8.9%	12.9%	5.1%	4.3%	9.4%	59.2%	40.8%

*Data are preliminary and are the best available at the time this report was assembled. Management area landings are dealer weighout landings prorated by vessel trip reported landing locations. These numbers are, therefore, subject to continual updates as databases are updated. These numbers may not agree with reports assembled at different times.

Table 29: Monkfish landings (live lbs.) in the Category B (regular) DAS program and coastwide by management area.

The apparent increase in the proportion of monkfish landings from the Regular B DAS Program is cause for concern since it indicates a growing interest in use of Regular B DAS to target monkfish during the final months of the Pilot Program implemented by FW 40A. If the Regular B DAS Program continues unmodified, the use of Regular B DAS to target monkfish will likely increase; especially in light of potential additional restrictions on NE multispecies Category A DAS being considered in NE Multispecies FW 42, and the currently high ex-vessel price associated with monkfish tails (over $3 per pound). Considering the current status of the monkfish resource in both management areas, any additional effort in this fishery would undermine the stock rebuilding goals of the FMP, and, therefore, should be mitigated, such as by eliminating the opportunity to target monkfish on NE multispecies Regular B DAS.

The preferred alternative would prohibit targeting monkfish on a Regular B DAS, or using a Regular B DAS to satisfy the requirement to use a NE multispecies DAS when on a monkfish DAS (for Category C and D vessels that have a NE multispecies limited access permit). When fishing on a NE multispecies Regular B (regular) DAS, vessels would have a monkfish incidental catch limit as described in Table 6. Therefore, unlike the No Action alternative, where the entire Regular B DAS Program is eliminated, monkfish mortality would still come from the incidental catch on Regular B DAS as well as from the directed fishery (on monkfish/multispecies A DAS or monkfish-only DAS). The benefit to monkfish stocks would be the difference between their Regular B DAS monkfish landings on directed trips and their landings under the applicable incidental catch limit plus any reduction in overall Category B DAS used because of the reduce fishing opportunities.

While it is not possible to accurately predict future decisions by fishermen as opportunities and market conditions change, the activity under the Regular B DAS Pilot Program provides some insight into the potential impact of the options under consideration. The potential biological savings between allowing vessels to target monkfish on a Regular B DAS or not is depicted in Table and Table 31. The "savings" was calculated by examining trip level information for vessels that declared a NE multispecies Regular B DAS (VMS code NMS-BDP) or a joint monkfish/NE multispecies Regular B DAS (VMS code MNK-BDP). For trips coded only as a NE multispecies Regular B DAS, the savings was calculated based upon the possession limit for monkfish Category E vessels (incidental catch permit) fishing under a NE multispecies DAS for each management area. Therefore, for the NFMA, any trip where more than 400 lb tail weight per NE multispecies DAS were landed was reduced to 400 lb per DAS to determine what the landings would be if the preferred alternative had been in effect during the Regular B DAS Pilot Program. It is possible that this may over-estimate the mortality benefits of this option if vessel operators discard monkfish exceeding the incidental catch limit. This is more likely to be an issue for combined monkfish/multispecies trips, as it is unlikely that vessels would direct on monkfish under the low incidental catch limits.

A similar procedure was done for the SFMA, but applying the incidental catch limit of 50 lb tail weight associated with Category E vessels fishing under a NE multispecies DAS. The savings was then calculated based on the difference between the actual monkfish landings associated with vessels under only a NE multispecies Regular B DAS and the adjusted Regular B DAS landings. For vessels under a joint monkfish/NE multispecies Regular B DAS, it was assumed that these landings would not occur since vessels would not be authorized to fish under a joint monkfish/NE multispecies Regular B DAS under the preferred alternative. However, in reality, some of these vessels may choose to continue to fish for monkfish under a joint

monkfish/NE multispecies A DAS. Therefore, the savings associated with these joint monkfish/NE multispecies Regular B DAS trips will likely be less than projected.

While the "savings" as a proportion of the total monkfish landings during the Pilot Program period is relatively small, it is notable in the context of the proposed FY 2006 monkfish TACs, particularly in the SFMA. Furthermore, the apparent acceleration of landings and effort under the Pilot Program in its second half implies that the savings will be greater than the average over the entire Pilot Program should that trend continue. The overall Pilot Program savings represent about 5-percent of the FY 2006 TAC of 7,737 mt, and about 16-percent of the SFMA TAC of 3,667. As opportunities to target healthy stocks under the NE multispecies Regular B DAS Program are reduced, as proposed in this emergency action and in FW 42, and measures are taken to protect NE multispecies stocks of concern, the likelihood that vessels will avail themselves of any opportunity to target monkfish will increase.

Monkfish Management Area	DAS Fishery Code	Landings	Landings with NO B-regular DAS program	"Savings" by removing monkfish from B-DAS program
NFMA	MNK-BDP	127,593	-	127,593
	NMS-BDP	1,728,834	1,088,409	640,425
SFMA	MNK-BDP	763,678	-	763,678
	NMS-BDP	698,096	156,168	541,928
Total		3,318,201	1,244,577	2,073,624

Table 30: Monkfish landings and "savings" (live lbs.) in the Regular B DAS Program by monkfish management area and DAS system fishery code.

Month	NFMA			SFMA		
	Landings	Landings with NO B-regular DAS program	"Savings" by removing monkfish from B-DAS program	Landings	Landings with NO B-regular DAS program	"Savings" by removing monkfish from B-DAS program
Nov-04	2,354	2,354	-			
Dec-04	92,590	86,291	6,299	182,296	24,878	157,418
Jan-05	173,667	75,427	98,240	89,617	16,177	73,440
Feb-05	184,108	102,061	82,047	188,783	24,391	164,392
Mar-05	127,548	86,315	41,232	12,341	1,760	10,581
Apr-05	152,295	76,208	76,087	18,101	2,044	16,057
May-05	26,188	20,889	5,299	186,935	598	186,337
Jun-05	339,540	171,123	168,417	70,221	16,268	53,953
Jul-05	298,969	202,027	96,942	37,892	13,280	24,612
Aug-05	178,019	105,574	72,446	242,673	35,192	207,481
Sep-05	212,147	128,232	83,915	376,495	19,422	357,073
Oct-05	69,001	31,907	37,094	56,421	2,158	54,263
Total	1,856,427	1,088,409	768,018	1,461,774	156,168	1,305,606

Table 31: Monkfish landings and "savings" (live lbs.) in the Regular B DAS Program by monkfish management area and month.

Further benefit would derive from eliminating the opportunity for vessels to target monkfish on more DAS than is allocated by the monkfish FMP, and without a monkfish trip limit on those DAS in the NFMA for vessels with fewer Category A DAS than monkfish DAS. Under the Pilot Program, vessels could either fish all of their NE multispecies Category A and Regular B DAS in the NFMA with no monkfish trip limit, or use their Regular B DAS to meet the requirement to use a multispecies DAS when fishing on a monkfish DAS in the SFMA, and then fish the remaining Category A and B DAS as NE multispecies DAS (yet with no monkfish trip limit in the NFMA). Under the preferred alternative, directed fishing opportunity would be limited to the number of monkfish DAS allocated by the monkfish FMP except on those vessels fishing in the NFMA whose Category A DAS exceed the monkfish DAS allocation. Trawl vessels, which accounted for the greatest proportion of monkfish landings under the Pilot Program, would be further restricted by the lack of a monkfish exempted fishery in the NFMA (precluding their ability to fish on a monkfish-only DAS in that area) and by the increased minimum mesh size requirement on a monkfish-only DAS when fishing in the SFMA.

The preferred alternative, like the No Action alternative, would reduce the number of multispecies/monkfish DAS available to Category C and D vessels, and proportionally increase the number of monkfish-only DAS. Consequently, the preferred alternative would have a positive effect on minimizing bycatch, due to the requirements to fish in a NE multispecies exempted fishery and to use larger minimum mesh size when a vessel is fishing on a monkfish-only DAS. In terms of multispecies bycatch, both trawls and gillnets not on a multispecies DAS are limited to fishing in exempted fisheries that have been shown to have only a minimal (less than 5-percent) bycatch of multispecies. The shift from multispecies/monkfish DAS to monkfish-only DAS would also increase the minimum mesh size requirements on both trawl and gillnet vessels. Depending on area, minimum mesh sizes on multispecies/monkfish DAS are 6.5-7 inches for trawls and 6.5 inches for gillnet vessels, while on a monkfish-only DAS, those mesh sizes increase to 10 or 12 inches (square or diamond, respectively) on trawls, and 10 inches on gillnets. The total effect of this larger mesh cannot be quantified with available data, but is likely to be positive for all species.

DAS Leasing Program

The impacts on the bycatch of other species by continuing the DAS Leasing Program under this action are uncertain. In general, the DAS Leasing Program is expected to increase fishing effort in the short term. Section 5.2.8.2.8 of Amendment 13 analyzed the impacts of the DAS Leasing Program on bycatch, indicating that DAS leasing could affect bycatch if DAS were leased from inactive to active vessels and if DAS were leased from a vessel with a low bycatch rate (due to gear, target species, or area fished) to a vessel with a higher discard rate (NEFMC 2003). However, if the converse is realized, bycatch rates would decline. As a result, the Amendment 13 analysis concluded that since there are no limits on where a permit can fish, when it can fish, or what it targets and that permits are routinely transferred between owners, the impacts from the DAS Leasing Program are not significantly different than those that can occur under the No Action alternative, and that the DAS Leasing Program is not expected to increase bycatch.

Eastern U.S./Canada Haddock SAP

As highlighted in Section 8.1.1.1 above, landings data from dealer electronic reports were linked to trip data from VMS to determine landings associated with trips in the Eastern U.S./Canada Haddock SAP (VMS Areas 5 or 6) from May to July 2005. Isolating non-groundfish species landed during these months identifies the species that would be affected by the proposed delay in the start date of this SAP, as shown in Table 32. A total of 186,343 lbs of non-groundfish species were landed from this SAP between May and July 2005. This table illustrates that monkfish and skates were the two non-groundfish species most affected by vessel operations in the Eastern U.S./Canada Haddock SAP.

Species	May	June	July	Total
Cusk	30	116	853	999
Fluke	626	297	292	1,215
Monkfish	34,800	22,794	46,069	103,663
American Lobster	3,638	3,378	4,566	11,582
Atlantic Sea Scallops	185	2,967	0	3,152
Thorny Skate	1,020	371	2,218	3,609
Skates (undefined)	26,504	19,635	15,635	61,774
Wolfish	6	0	343	349
Total	66,809	49,558	69,976	186,343

Table 32: Landings (lbs, live weight) of non-groundfish species from vessels participating in the Eastern U.S./Canada Haddock SAP from May through July 2005.

Assuming catch rates for non-groundfish species during FY 2006 are similar to that observed during FY 2005, the likely impacts on non-groundfish from the proposed measure to delay the start date of the Eastern U.S./Canada Haddock SAP until August 1 would be similar to that detailed in Table 32. No discard data for non-groundfish species from the Eastern U.S./Canada Haddock SAP during this time period were available at the time this analysis was being prepared. As a result, the impact of the proposed measure to delay the start date of this SAP to August 1 would likely be greater than the reductions in landings listed in Table 32, as discards would also be reduced by this measure. Under the No Action alternative, it is likely that the landings observed in FY 2005 plus any discards would be observed during FY 2006, as vessels would be able to fish in this SAP beginning May 1, 2006. Accordingly, the preferred alternative would have less of an impact on non-groundfish species than the No Action alternative, particularly for monkfish, skates, and American lobster.

This action proposes a monkfish possession limit of 500 lb per trip and a prohibition on the possession of lobsters. During the 2005 fishing year, a total of 15,436 lb of lobsters, 206,135 lb of monkfish from 53 trips, and 69,828 lb of skates from 27 trips were landed from vessels participating in this SAP. At a minimum, the preferred alternative would reduce the impact on lobsters by eliminating landings of lobsters from this SAP in an amount similar to the 15,436 lb landed during 2005. During 2005, participating vessels landed 3,889 lb of monkfish and nearly 2,600 lb of skates per trip. With the 500 lb per trip possession limit on monkfish and skates proposed by this action, landings of monkfish would be reduced by 3,389 lb per trip and landings of skates would be reduced by 2,100 lb per trip. Using the landings totals from 2005, the

proposed monkfish and skate trip limits would result in a decrease of monkfish and skate landings from this SAP approaching 180,000 lb and 56,000 lb, respectively.

Eastern U.S./Canada Area Trip Flexibility

Vessels fishing inside and outside of the Eastern U.S./Canada Area on the same trip under this proposed measure could affect the species composition of the catch, resulting in changes to the amount of other species caught during such trips. However, the amount of other species caught by such trips depends upon where a vessel chooses to fish when exercising their option to fish inside and outside of the Eastern U.S./Canada Area on the same trip (see Section 5.2.8.2 of Amendment 13, NEFMC 2003). It is unknown where vessels would choose to fish on trips outside of the Eastern U.S./Canada Area or what species they would target. However, if a vessel would elect to fish outside of the Eastern U.S./Canada Area on the same trip, it would not be restricted to fishing in any other area or targeting any particular species. As a result, the impacts from this proposed measure are not significantly different than those that can occur under the No Action alternative, and that this measure is not expected to increase bycatch beyond that which would is estimated for vessels fishing under a Category A DAS.

Trip Limits (GOM cod and CC/GOM, GB, and SNE/MA yellowtail flounder)

Restrictive trip limits proposed by this action are intended to discourage the directed targeting of GOM cod; CC/GOM, GB, and SNE/MA yellowtail flounder. It is unknown what other species would be targeted by groundfish vessels should the proposed trip limits reduce incentives to target these stocks. There is the potential that inshore GOM vessels may chose to redirect effort into the high-value scallop fishery, as many groundfish vessels also possess a General Category scallop permit. It is unknown what impacts that would have on the scallop fishery. However, the Council is currently developing measures that would regulate fishing activity under the General Category scallop permit as part of Amendment 11 to the Atlantic Sea Scallop FMP.

Recreational Measures

There is not expected to be any impacts to other species from the recreational measures specified in the preferred alternative because these measures would primarily impact the bycatch of other groundfish species, as described in the Section 8.1.1.2.

8.1.3 Habitat Impacts

The impacts to habitat associated with each measure included in an alternative may be beneficial, adverse, or neutral. To the extent possible, the analysis in this section identifies whether the measure would be expected to be beneficial, adverse, or neutral, relative to existing practices, and the relative degree of that effect.

Some of the proposed measures are expected to benefit habitats in the region by reducing fishing effort, including the expansion of differential DAS counting to the GOM and GB RMAs, restricting fishing effort in the Regular B DAS Program to the U.S./Canada Management Area, and delaying the start of the Eastern U.S./Canada Area Haddock SAP on GB. Although the

preferred alternative does not explicitly include the Amendment 13 default measure to reduce the number of available Category A DAS, it is important to note that since this measure would become effective on May 1, 2006, the habitat impacts associated with the preferred alternative would also be influenced by the effort reductions of this default measure, resulting in additional habitat protection under the preferred alternative.

Effort reduction was an important tool employed by the Council under Amendment 13 to minimize the adverse effects of bottom-tending gear on EFH. According to FW 40B, significant effort reductions and changes to DAS categorizations assisted in not only rebuilding stocks, but also in reducing the number of DAS that a vessel can use (NEFMC 2005a). However, the main mitigation tool employed by the Council to minimize the effects of bottom-tending mobile gear on EFH was the creation of seven Habitat Closed Areas, covering an area of 2,811 square nautical miles. Under this action, these areas will remain closed and any additional short-term effort resulting from the Regular B DAS Program will be applied outside the Habitat Closed Areas, in areas that are currently being fished with mobile, bottom-tending gear.

The preferred alternative relies upon effort reduction in the form of differential DAS counting as the primary means of reducing F. This measure would improve habitat quality in the GB/GOM RMAs by reducing disturbance to the seafloor and benthic faunal communities, thus benefiting habitat compared to the No Action alternative, which would allow vessels to continue to fish their full allocation of Category A DAS.

The preferred alternative would also delay the start date of the Eastern U.S./Canada Haddock SAP to August 1, 2006. In doing so, the preferred alternative would provide greater protection to EFH in Closed Area II than the No Action alternative which would allow vessels to fish in this SAP, including the small portion of the SAP in the northern tip of Closed Area II where the use of mobile, bottom-tending fishing gear has been prohibited since December 1994 (see Figure 8), beginning May 1. Accordingly, the No Action alternative allows for three months of access to areas included within Closed Area II that would be closed under the preferred alternative. This would mean increased impacts to habitat caused by the use of bottom trawl gear within this area during May, June, and July under the No Action alternative.

Measures that would reduce incentives to target specific groundfish species (i.e., restrictive trip limits for GOM cod and yellowtail flounder) may provide marginal habitat benefits by minimizing incentives to target these species, thus reducing fishing effort in habitats which they utililize. Measures that redirect fishing effort out of certain areas and into other areas, such as the continuation of the DAS Leasing Program and the Regular B DAS Program in the U.S./Canada Management Area, may minimally increase the adverse impacts on EFH in specific areas (i.e., into the GOM for the DAS Leasing Program and into GB for the Regular B DAS Program) relative to the No Action alternative. However, it is important to note that current regulations allow vessels to fish with bottom tending mobile gear in these areas, so any increase in effort resulting from the preferred alternative would be minimal and already accounted for under the analysis presented in Amendment 13.

It is unclear how the continuation of the DAS Leasing Program will affect fishing effort. Data from the DAS Leasing Program seem to indicate that effort has shifted from vessels fishing in the SNE/MA RMA to vessels fishing in the GOM RMA. It is unclear how the other provisions proposed in this emergency action would affect how the DAS Leasing Program would shift effort, as different incentives may exist under the preferred alternative that may affect the choice of fishing location. If effort is shifted to the U.S./Canada Management Areas on GB, there is a potential for effort shifts from the DAS Leasing Program to increase adverse impacts to

EFH. The impacts to EFH from the continuation of the DAS Leasing Program depend on where this effort is applied, what gear is being used by vessels, and the habitat types of the areas experiencing increased effort from the DAS Leasing Program. Since it is unclear how the provisions of the preferred alternative would affect effort under the DAS Leasing Program, it is not possible to predict the impacts to EFH caused by continuing the DAS Leasing Program under the preferred alternative. However, should this increase in effort be observed in the U.S./Canada Management Area on GB, impacts to EFH from the preferred alternative would be minimized due to the hard TACs that limit effort in the U.S./Canada Management Areas on GB. In addition, while the continuation of the DAS Leasing Program could lead to the activation of latent effort over the short-term, any additional increases in effort caused by this program would be minimized due to the differential DAS counting included in the preferred alternative and described above.

The continuation of a modified Regular B DAS Program would increase effort and, therefore, increase the potential for adverse impacts to EFH, compared to the No Action alternative, as the Regular B DAS Pilot Program expired in October 2005. However, any adverse impacts that would result from this measure would be restricted to the U.S./Canada Management Area on GB. Furthermore, if trawlers using A DAS in the GOM, where there is more vulnerable, hard-bottom habitat, transfer some of their DAS into the Regular B DAS Program on GB, where the bottom is shallower and dominated by less vulnerable, sandy habitat, there may be no overall adverse impact of this measure on EFH at all. The severity of any adverse habitat impacts of this measure would be further limited by hard TACs for groundfish species targeted in the Regular B DAS Program and by the hard TACs for GB cod, GB yellowtail flounder, and GB haddock caught from the U.S./Canada Management Area. Therefore, any increased impacts to EFH resulting from the Regular B DAS Program would be minimal.

The preferred alternative and the No Action alternative would not affect overall effort allocations available to target monkfish (monkfish DAS), but may, in fact, reduce the amount of effort vessels, especially trawl vessels, are willing or able to use to target monkfish, due to the lack of a trawl exempted fishery in the NFMA. However, this may also cause trawl vessels to shift their monkfish effort from the NFMA to the SFMA where they can use monkfish-only DAS. Any potential adverse impacts on EFH resulting from a shift in effort to the SFMA would be, or is unlikely to be, more than minimal or temporary because the areas where increased effort is likely to occur are already being disturbed by bottom trawls and scallop dredges so that any additional trawling effort will have no significant additional effect. Secondly, these areas are primarily sandy and less vulnerable to fishing impacts. Furthermore, any shift in monkfish effort from the more vulnerable, complex hard-bottom habitat in the NFMA to the sandy bottom grounds of the SFMA would have an overall net benefit to EFH.

Because recreational fishing activities are not generally associated with adverse impacts to fish habitat, any changes to the regulation of recreational fishing would not be expected to have any positive impacts habitats in the GOM. Overall, it is expected that the proposed measures would decrease recreational fishing activities within the GOM, particularly for private recreational vessels operating between November through March.

A comparison of the impacts between the preferred alternative and the No Action alternative is summarized in Table 33 below. In summary, compared to the No Action alternative, the net effect of all the management measures included in the preferred alternative on benthic habitats and EFH in the Northeast region would be positive. Although specific measures

in the preferred alternative could increase effort and, therefore, also increase the potential for adverse impacts to habitat relative to the No Action alternative, the habitat impacts of these measures would be limited by other habitat protection provisions currently in place. Therefore, habitat benefits resulting from differential DAS counting in the GB and GOM RMAs, reduced fishing effort for monkfish, and a delayed start of the Eastern U.S./Canada Area Haddock SAP are expected to exceed the potentially adverse impacts associated with the continuation of the DAS Leasing Program and the renewal of the regular B DAS program in the U.S./Canada Management Area. In addition, since the preferred alternative would not affect the Amendment 13 default measure to revise the Category A/B DAS ratio, reductions in impacts to habitat associated with reducing Category A DAS (which can be used anywhere outside of a closed area) would also be realized by the preferred alternative.

Management Measure	Preferred alternative	No Action
Category A/B DAS Ratio	Positive	Positive
Differential DAS Counting	Positive	-
Modified Regular B DAS Program	Neutral or Minimally Adverse	Positive
Monkfish Restrictons	Positive	-
Continuation of the DAS Leasing Program	Neutral or Minimally Adverse	Positive
Recreational Fishing Measures	Neutral	-
Delayed Start Date for the Eastern U.S./Canada Haddock SAP	Positive	Neutral
Eastern U.S./Canada Area Trip Flexibility	Neutral	-
Possession Limit Reductions	Neutral to Minimally Positive	-

Table 33: Comparison of impacts to habitat between the preferred alternative and the No Action alternative.

8.1.4 Impacts on Threatened, Endangered, and Other Protected Resources

The impacts of the existing NE multispecies fishery on endangered and threatened whales, sea turtles, and fish have been discussed in the existing Biological Opinion on the NE Multispecies FMP dated June, 2001 and in subsequent Section 7 informal consultations conducted by NMFS in accordance with the Endangered Species Act.

In the Amendment 13 FSEIS (NEFMC 2003), the mortality and serious injury of protected species were assessed relative to the Potential Biological Removal (PBR) allowed under the Marine Mammal Protection Act (MMPA) for each species and were found to be below those levels. The FSEIS concluded that the Amendment 13 measures would not compromise the ability of the species protected by the MMPA to achieve their optimum sustainable population levels. The bulk of measures implemented under Amendment 13 were designed to achieve specific F reductions, and included effort reductions in all components of the groundfish fleet. Amendment 13 reduced, by some degree, the adverse impacts of NE multispecies fishing activity that existed at the time of implementation to all large whales, including the right whale. Interactions between sink gillnet gear used in the NE multispecies fishery and other marine mammal species (such as seals, dolphins, and small whales) were not expected to increase under Amendment 13 management measures. Amendment 13 concluded that the potential impacts to

sea turtles would likely decrease with implementation. The current fishing activities of the groundfish fishery were determined to have no affect on the endangered shortnose sturgeon and Atlantic salmon.

Amendment 13 anticipated that groundfish measures implemented in that action would have negligible and possibly even beneficial impacts on protected species. For instance, DAS reductions and additional gear restrictions are expected to significantly reduce effort in the groundfish fishery and consequently have positive impacts on reducing risks to protected species. Under Amendment 13, overall effort reductions are occurring as the result of reduced effort and other fishing restrictions on groundfish stocks, possibly reducing risks to protected species on the positive end of the spectrum.

The preferred alternative would result in a slightly lower risk of interactions with protected species than the No Action alternative, as the proposed measures would reduce overall fishing effort throughout the NE region beyond that provided by the No Action alternative. Because the preferred alternative would reduce groundfish fishing effort beyond that which was assessed and found to be acceptable for measures implemented by Amendment 13 and other subsequent groundfish actions, the proposed effort reductions and other measures proposed by this action would provide additional protection for threatened, endangered, and other protected resources.

8.1.5 Economic Impacts

8.1.5.1 Methods

Economic impacts of the preferred alternative were analyzed in a manner similar to that described in the Amendment 13 FSEIS. Specifically, an estimate of relative change in total fishing income was derived by prorating the reduction in groundfish revenues estimated with the CAM to a baseline data set that included earned revenue from other species on groundfish trips as well as fishing income from non-groundfish trips. Based on review comments provided by the Panel of Experts on the social science aspects of the Amendment 13 analysis, several changes were made to the procedures used to estimate economic impacts. The CAM was modified to permit consideration of stochastic catch rates and fishing costs. The CAM was also modified such that, under certain limitations, any given vessel was allowed to choose fishing locations (blocks) in a given month with no prior recent history of having been fished by that vessel. Last, the economic analysis was modified to incorporate impacts of changes in landings on specific ports. Formerly, port-level impacts were described based on a vessel's home port. This level of analysis has been retained as it relates to how individual vessels may fare under No Action and the preferred alternative. However, vessels typically land in several ports and in some cases vessels may tie-up in one location and sell their catch in others. Therefore, proportions of landings by vessel and landed port were estimated to capture the impact of a reduction in access to supplies groundfish and other species associated with groundfish trips would have on a given port.

In addition to the modifications noted above, all data were updated to reflect regulatory changes as well as changes in catch rates. That is, DAS allocations were set at Amendment 13 levels and catch rates were updated using data from calendar years 2001-2004. The time frame for estimating average revenues was adjusted to calendar years 2002-2004. Calendar year 2001 was not used for two reasons. First, 2001 revenues were considerably higher than more recent

years which would result in higher average revenue than may be appropriate to reflect contemporary conditions. Second, compared to 2001, most vessels have seen their opportunity to target groundfish reduced. For vessels that have attempted to offset these losses by increasing income from other fisheries the 2001 year would not reflect current activity.

Data

Data for this analysis included landings data from the VTR, price data from dealer records, and NMFS Northeast Regional Office permit data. The permit data for fishing year 2004 were queried to obtain homeport, homeport state, and vessel length for all vessels that were included in the CAM[1]. VTR data for calendar years 2002-2004 were used to estimate total landings of all species by trip and by year for each vessel. The VTR data were used to maintain consistency with the data used in the CAM and because it was the only way to maintain individual vessel information for vessels that may have landed in the states of Connecticut or Delaware. Total trip value was estimated by applying monthly average price, by species, to each trip record. Note that landed port was also included for each trip record.

Data for groundfish revenues and all other species revenues for trips where groundfish were landed and trips where no groundfish were landed were then summed by vessel and by port. These trip records were then aggregated into total annual income from trips where groundfish were landed and total income from trips where no groundfish were landed. Note that income from groundfish and income from all other species on trips where groundfish were landed were summed separately. In this manner, the dollar value of other species income per dollar of groundfish revenue was calculated and used to estimate changes in other species revenue on affected groundfish trips. This step was necessary because the CAM only includes landings and revenues from the ten regulated mesh groundfish species. Total income by vessel for calendar years 2002-2004 were then averaged to construct a final data set that included the vessel permit number, gear sector (consistent with that included in the CAM), home port state, home port group, vessel length, cost per DAS, 3-year average annual income from groundfish trips by landed port, 3-year average income from all other trips by landed port, and 3-year average days absent on groundfish trip and non-groundfish trips.

Procedures

The area closure model was designed to provide a relative measure of change in the exploitation of species included in the model. As such, a status quo or baseline is constructed by imposing a set of constraints on where and when vessels may fish, to observed fishing location data, where the constraints represent the selected management measures in place. By changing these constraints, an estimate of how effort may be redistributed and the resulting revenue and landings is produced. The percent change in exploitation and regulated groundfish revenue is then estimated relative to the status quo.

Given that the area closure model produces a relative measure of change, and that the baseline is dependent on the specified constraints, there is no direct mapping between the modeled baseline and landings data tabulated from either dealer or VTR records. However, in concept, the area closure baseline is designed to approximate the specified suite of management

1Even though the area closure model may not have included 100 percent of any given vessels activity, all vessels that did record landing of one or more pounds of regulated groundfish were included. Therefore, the area closure model should be a reasonable census of vessels that have landed regulated groundfish during calendar years 1998-2001 and that currently hold a valid multispecies permit.

measures in place over the same period of time. In fact, the CAM is calibrated to generate groundfish landings that approximate observed landings for the modeled time period and regulatory regime. For purposes of analysis these regulatory measures include DAS allocations, trip limits, and combinations of year-round and rolling closures that had been implemented in FY2004. The economic effects of the proposed alternatives were then estimated relative to this simulated FY2004 baseline in the following manner. For purposes of illustration, a sample vessel with a total baseline income of $120,000 is used. Further assume that this vessel earned $100,000 of which $85,000 was from regulated groundfish and $15,000 was from combined other species and used 50 DAS on groundfish trips and earned $20,000 while using 10 DAS on trips where no groundfish were landed. Last assume that the cost per DAS for this vessel is $600. These figures result in a net return of $84,000 an uncertain portion of which would go to fixed costs, crew and captain incomes, and owner profit.

Step 1: For a given option, the area closure model was used to estimate the expected change in large-mesh groundfish revenues and DAS by vessel. Assume that the estimated change groundfish revenue was -20 percent and the change in DAS used on groundfish trips was -25 percent.

Step 2: The change from Step 1 was then applied to baseline (i.e., the 2002-2004 average) groundfish revenues to estimate expected groundfish revenue under that option. For this illustration the estimated Amendment 13 revenue would be ($85,000)*(0.8) = $68,000 and the estimated DAS used would be (50)*(0.75) = 37.5.

Step 3: Changes in other species revenues on groundfish trips was estimated by multiplying the calculated average other species revenues per dollar of groundfish revenue by the resulting estimated groundfish revenue from Step 2. For the example vessel, assume that this average revenue rate were 0.25 (i.e. $0.25 in revenue from non-regulated groundfish per dollar of regulated groundfish). The change in other species revenues on groundfish trips would be ($68,000)*(0.25) = $17,000.

Step 4: Assuming revenues from trips where no groundfish were landed would not be affected, the revenue from these trips was added to the estimated revenue from Steps 2 and 3 to calculate a new level of total fishing income. Assuming $20,000 in revenue from trips where no groundfish were landed the total income under the option would be ($68,000 + $17,000 + $15,000) = $100,000.

Step 5: The change in fishing cost is estimated as the sum of the change in groundfish DAS (50)*(0.75) = 37.5 and the DAS on non-groundfish trips (37.5 + 10) = 47.5 multiplied by the cost per DAS (47.5)*($600) = $28,500.

Step 6: The estimated proportional changes in total net return from fishing was then calculated as estimated net return ($100,000 - $28,500) = $71,500) minus baseline net return divided by baseline net return ($84,000 - $71,500)/$84,000 = -14.9 percent.

There are likely to be several potential sources of bias associated with the method described above. One source of bias is associated with the treatment of revenue from species other than regulated groundfish. This potential bias has two sources. First, applying a constant

ratio of other species revenue to groundfish revenue may not be appropriate. Since the applied other species revenue rate was based on 2002-2004 data this rate could change (may increase for some vessels and decrease for others) as vessels change fishing strategies in response to changes in DAS, trip limits, or area closures.

The assumption that revenues earned on trips that do not land any groundfish would remain unchanged is the second source of bias. The extent that vessels adapt to any one or more of the proposed measures by increased targeting of species other than regulated groundfish, assuming no change in other species' revenues will result in an upward bias in the estimated economic impacts.

In addition to the aforementioned, there is a potential bias associated with the inability to account for possible improvements in catch rates with changing stock sizes. This bias will be more severe for stocks that respond quickly to management changes than for stocks that respond relatively slowly. In the former case, the estimated impacts will tend to be biased upward, while in the latter the economic impact estimates would not be affected. Note also that the extent of the bias will be greater the longer the time period associated with the projected impacts.

8.1.5.2 Analysis of Proposed Measures

Overall Impacts

The preferred alternative would implement differential DAS counting throughout all RMAs at a rate of 1.4:1, would implement a trip limits for GB yellowtail flounder, and would reduce trip limits for GOM cod and CC/GOM and SNE/MA yellowtail flounder. Although not proposed by this action, the economic impacts of this preferred alternative are also affected by the Amendment 13 default would reduce the category A DAS by 8 percent (this is also included in the No Action alternative), This action would affect any vessel with a limited access permit with a DAS baseline greater than zero. Total groundfish revenues landed by these vessels were approximately $78 million in FY2004 and combined revenue from all trips where groundfish were landed was $109 million. The preferred alternative would result in an estimated reduction of 32 percent in total groundfish revenue resulting in an estimate of $53 million in the landed value of groundfish for FY2006. The estimated proportional impact on total revenue on trips where groundfish were landed was slightly lower at 31 percent resulting in an estimate of $75 million in fishing revenue to limited access DAS vessels in FY2006. Compared to the landed value of all species landed in the Northeast region the reduction in combined groundfish trip value represents about 4 percent of the total.

Port-Level Impacts

With the exception of Chatham, with an estimated reduction in revenues of 22 percent, the reduction in total revenue from trips landing groundfish in each port did not differ substantially across ports, ranging between 30 and 34 percent (Table 34). However, even though proportional change in groundfis-h trip income was nearly uniform across ports, the total impact on each port differs substantially depending on its relative dependence on groundfish. That is, the estimated adverse impact for ports such as Boston (24 percent), Portland (18 percent), Portsmouth (23 percent), and Gloucester (16 percent) were at least twice that of all other ports or port groups. Ports with an estimated total adverse impact ranging between 5 and 10 percent included Chatham (8 percent), Provincetown (8 percent), New Bedford (6 percent) and the port

group of South Shore, Massachusetts (5 percent). Total impacts on all other ports ranged between three and less than one percent.

	Combined Value all Species	Combined Value of Regulated Mesh Groundfish Species by Multispecies DAS Vessels	Combined Value of All Species by Multispecies DAS Vessels on Trips Landing Groundfish	Change in Groundfish Revenue	Change in Groundfish Trip Revenue	Predicted Port Total Revenue	Total Change
Portland	32,922,325	13,373,375	18,951,932	-31%	-31%	27,047,226	-17.8%
Upper Mid-Coast ME	35,430,283	474,404	834,006	-30%	-30%	35,180,081	-0.7%
Other Maine	123,288,128	1,018,817	1,479,842	-30%	-30%	122,844,175	-0.4%
Portsmouth	4,015,765	1,556,509	2,915,572	-31%	-31%	3,111,938	-22.5%
Other NH Coast	30,867,883	2,271,908	2,739,270	-32%	-32%	29,991,317	-2.8%
Gloucester	39,087,050	15,968,279	20,160,713	-31%	-31%	32,837,229	-16.0%
North Shore MA	27,452,944	581,252	671,009	-30%	-30%	27,251,641	-0.7%
Boston	9,694,669	4,525,827	7,182,119	-32%	-32%	7,396,391	-23.7%
South Shore MA	9,558,477	1,463,831	1,719,296	-30%	-30%	9,042,688	-5.4%
Chatham	13,098,521	3,857,442	4,769,272	-22%	-22%	12,049,281	-8.0%
Provincetown	3,858,319	803,765	905,981	-33%	-33%	3,559,345	-7.7%
Other Cape & Islands	7955614	237698	288842	-34%	-34%	7,857,408	-1.2%
New Bedford	228,142,781	28,841,029	37,895,367	-34%	-34%	215,258,356	-5.6%
Rhode Island	65,154,921	2,268,352	4,246,935	-33%	-32%	63,795,902	-2.1%
Connecticut	18,055,971	83,712	223,480	-34%	-34%	17,979,988	-0.4%
Eastern Long Island	14,652,437	324,092	1,266,405	-34%	-33%	14,234,523	-2.9%
Other New York	8,743,703	87,849	612,519	-33%	-32%	8,547,697	-2.2%
New Jersey	113,467,589	570,445	1,631,838	-33%	-33%	112,929,082	-0.5%
Other	131,469,463	141	78,789	-31%	-30%	131,445,826	0.0%
Totals	916,916,843	78,308,727	108,573,187			882,360,095	-3.8%

Table 34: Preferred alternative impact on total revenues by port/port groups home port state.

The preferred alternative would have greater adverse impact of vessels from the home port states of Maine, New Hampshire, and Massachusetts. Among these states at least 90 percent of all vessels from Maine or New Hampshire would be adversely affected. In each of these states at least 75 percent of all vessels would experience some loss in total net return to fishing. However, the estimated adverse impact on New Hampshire vessels was higher than that of either Maine or Massachusetts at the median and above. At both the 25th and 10th percentile, the difference across these GOM states differed by no more than two percentage points indicating there were no disproportionate impacts among the most adversely affected vessels across these states. Among the remaining states, Rhode Island vessels may be expected to incur larger adverse effects on total net return followed by Connecticut, New York, and New Jersey vessels.

Home Port State	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Maine	-31%	-29%	-22%	-7%	-1%
New Hampshire	-32%	-29%	-24%	-17%	-7%
Massachusetts	-33%	-30%	-20%	-7%	0%
Rhode Island	-24%	-17%	-12%	-4%	0%
Connecticut	-16%	-15%	-9%	-2%	0%
New Jersey	-12%	-9%	-6%	-2%	0%
New York	-25%	-10%	-6%	0%	0%
Other	-31%	-21%	-6%	-2%	0%

Table 35: Preferred alternative impacts on total net returns to vessel owner and crew by home port state.

Home Port/Port Groups

In eight of the 19 home ports or home port groups considered in the analysis at least 90 percent of all vessels would be adversely affected (Table 36). These home ports include Portland, Upper Mid-Coast Maine, Portsmouth, Other NH Coast, Gloucester, North Shore MA, Provincetown, and New Bedford. With the exception of Provincetown and North Shore MA, 75 percent of all vessels from these home ports would be expected to incur a loss in total net return of at least 14 percent.

With the exception of Chatham and Provincetown all vessels in every home port from New Bedford northward would be expected to lose between 26 and 34 percent of total net returns at the 25th percentile and 10 percent of vessels may be expected to lose between 29 and 36 percent of total net return. Median estimated revenue losses for home ports in Rhode Island and southward were estimated to range between 4 percent in the Eastern Long Island home port group and 12 percent in Rhode Island home ports.

Home Port	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Portland	-32%	-31%	-25%	-19%	-3%
Upper Mid-Coast ME	-31%	-29%	-28%	-16%	-11%
Other Maine	-31%	-28%	-18%	-5%	0%
Portsmouth	-29%	-29%	-21%	-14%	-2%
Other NH Coast	-32%	-31%	-26%	-18%	-6%
Gloucester	-33%	-31%	-25%	-14%	-3%
North Shore MA	-34%	-28%	-19%	-7%	-1%
Boston	-32%	-29%	-20%	-7%	0%
South Shore MA	-31%	-26%	-11%	-1%	0%
Chatham	-20%	-17%	-9%	0%	0%
Provincetown	-23%	-20%	-19%	-5%	-1%
Other Cape & Islands	-32%	-31%	-15%	-1%	0%
New Bedford	-36%	-34%	-27%	-14%	-2%
Rhode Island	-24%	-17%	-12%	-4%	0%
Connecticut	-16%	-15%	-9%	-2%	0%
Eastern Long Island	-16%	-9%	-4%	0%	0%
Other New York	-27%	-12%	-7%	-3%	0%
New Jersey	-12%	-9%	-6%	-2%	0%
Other	-31%	-21%	-8%	-2%	0%

Table 36: Preferred alternative impacts on total net returns to vessel owner and crew by home port/port group.

Vessel Length

Over 90 percent of both medium (50 to 70 feet LOA) and large vessels (greater than 70 feet) would incur some adverse affect on total annual net returns (Table 37). However, at every percentile the estimated reduction in total net return from combined income from all fisheries was larger for vessels in excess of 70 feet LOA than for either medium or small vessels. Similarly, the estimated adverse impact on medium sized vessels exceeded that of small vessels at every percentile. Median adverse impacts across vessel length classes ranged from 14 percent for vessels less than 50 feet to 22 percent for larger vessels. Among the most affected vessels (i.e. at or below the 10th percentile) potential losses were estimated to be at least 36 percent for large vessels and 31 percent and 32 percent for medium and small vessels respectively.

Vessel Length	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Less than 50 Feet	-31%	-25%	-14%	-2%	0%
50 to 70 Feet	-32%	-28%	-17%	-6%	-1%
Greater than 70 Feet	-36%	-32%	-22%	-10%	-3%

Table 37. Preferred alternative impacts on total net returns to vessel owner and crew by vessel length class.

Gear

The preferred alternative would have larger impact on trawl vessels as compared to either hook or gillnet gear (Table 38). At least 90 percent of all trawl vessels would be adversely affected while less than 75 percent of hook vessels would incur a loss in net return and fewer

than 90 percent of gillnet vessels would be adversely affected. Median loss in net return was estimated to be 19 percent for trawl vessels, 13 percent for gillnet vessels, and 1 percent for vessels using hook gear. Even though proportionally more trawls vessels would be adversely affected, a subset of gillnet vessels would incur losses in net returns similar to that of trawl vessels. For example, 10 percent of gillnet vessels would lose at least 31 percent of annual total net returns while 10 percent of trawl vessels were estimated to incur losses of 33 percent or greater. Thus, while proportionally more trawl vessels would be adversely affected there would still be a number of similarly affected vessels regardless of what gear is used.

Gear	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Gillnet	-31%	-25%	-13%	-4%	0%
Hook	-22%	-16%	-1%	0%	0%
Trawl	-33%	-29%	-19%	-7%	-1%

Table 38: Preferred alternative impacts on total net returns to vessel owner and crew by primary groundfish gear.

Gear/Vessel Length

Among gillnet vessels, vessels less than 50 feet were estimated to incur larger losses in annual net return at each percentile compared to larger gillnet vessels (Table 39). The difference between gillnet vessels of different sizes is not large as median impacts differ by only three percentage points. Similarly, gillnet impacts at the 10th and 25th percentiles differ by only one to two percentage points between small and larger gillnet vessels.

Median adverse impacts were larger for large trawl vessels (23 percent) as compared to small or medium sized trawl vessels (18 percent for both). In general, estimated adverse effects were nearly identical between small and medium vessels with adverse impacts on large vessels being consistently larger at all percentiles of the distribution of estimated losses in total annual net return. Note that, as was the case for gillnet vessels, even though large trawl vessels may be disproportionately affected compared to smaller trawl vessels, the differences are not large ranging between four and five percentage points.

Gear/Length Class	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Gillnet Less than 50 Feet	-31%	-25%	-13%	-4%	0%
Gillnet 50 to 70 Feet	-29%	-24%	-10%	0%	0%
Hook Less than 50 Feet	-22%	-16%	-1%	0%	0%
Trawl Less than 50 Feet	-32%	-27%	-18%	-4%	0%
Trawl 50 to 70 Feet	-32%	-28%	-18%	-7%	-2%
Trawl Greater than 70 Feet	-36%	-32%	-23%	-10%	-3%

Table 39: Preferred alternative impacts on total net returns to vessel owner and crew by primary groundfish gear and vessel length.

Groundfish Dependence

The preferred alternative would have larger adverse impacts on annual net return as dependence on groundfish for total fishing income increases. Estimated adverse impact on vessels with high dependence (more than 80 percent) on groundfish ranged between 5 percent at the 90th percentile and 36 percent at the 10th percentile (Table 40). By contrast, vessels with less than 20 percent reliance on groundfish for fishing income would be expected to incur losses in

net return that range from less than 1 percent to 10 percent at the 10th percentile. Vessels with dependence ranging between 54 percent and 80 percent would be less affected than vessels with higher dependence on groundfish although the difference between the two groups differs by no more than four percentage points at any given percentile.

Dependence on Groundfish (Quartiles)	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Less than 20%	-10%	-6%	-2%	0%	0%
20% to 54%	-27%	-18%	-13%	-8%	-1%
More than 54% up to 80%	-32%	-30%	-26%	-18%	-9%
More than 80%	-36%	-32%	-28%	-21%	-5%

Table 40: Preferred alternative impacts on total net returns to vessel owner and crew by quartiles of dependence on droundfish (FY2004).

Gross Sales

Vessels with highest gross sales (more then $320,000) of all species were estimated to have the highest losses in annual total net return (Table 41). Ninety percent of vessels in this category would incur a loss in net return of at least 3 percent and 10 percent of these vessels would incur losses of 35 percent or more. At lower gross sales intervals the estimated impact is equivalent to, or less than, than the impact on the next highest interval. For example, median losses in net returns were estimated to be 19 percent, 16 percent, and 10 percent for vessels in the third, second, and first gross sales quartiles. Note that the difference from the median to the 10th percentile, or equivalently, the difference between the least and most impacted vessels in each sales quartile decreases. That is, at the median, the difference between the estimated impact on vessels in the highest and lowest sales quartile is 12 percentage points. This difference declines to 8 percentage points at the 25th percentile and only 5 percentage points at the 10th percentile.

Gross Sales (Quartiles)	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Less than $67K	-30%	-23%	-10%	0%	0%
$67K to $165K	-31%	-26%	-16%	-5%	0%
$165K to $320K	-31%	-28%	-19%	-7%	-1%
More than $320K	-35%	-31%	-22%	-9%	-3%

Table 41: Preferred alternative impacts on total net returns to vessel owner and crew by gross sales quartiles for FY2004.

Modified Regular B DAS Program

Assessment of biological impacts used data for Regular B DAS trips that could be matched to dealer records. This meant that data for approximately 15 percent of trips were not useable. Assuming there was no systematic reason why trips recorded in the VMS catch tables could not be matched, omission of these data would not affect an estimate of biological impacts since the retained data constitute a representative sample of Regular B DAS trips. Measuring economic impacts in aggregate would also be unaffected, but data loss would result in a potential underestimate of the importance of Regular B DAS to some vessels as well as an underestimate of the total revenue received by all vessels that used one or more Regular B DAS.

For the four-quarter period including quarters 3 and 4 of FY2004 and quarters 1 and 2 of FY2005 total revenues were at least $10.4 million. A total of 130 different vessels participated in the program that took 542 trips, including 163 monkfish trips and 379 multispecies trips. As a proportion of total earnings, Regular B DAS ranged from less than one percent to two-thirds of total fishing revenue. On average, vessels relied on Regular B DAS trips for 17.5 percent of total sales. Of the Regular B DAS trip income, about 71 percent was derived from trips taken within the U.S./Canada Management Area. The preferred alternative would eliminate the use of Regular B DAS outside the U.S./Canada Management Area and would effectively result in a directed haddock fishery since a separator trawl would be required.

Aggregate Impacts

Since about 30 percent of Regular B DAS fishing revenue came from outside the U.S./Canada Management Area, this change would result in about a $3 million reduction in fishing revenue unless vessels can make up for this loss by increasing the use of Regular B DAS used in the U.S./Canada Management Area. However, the results from the analysis of biological impacts suggest that total used Regular B DAS in FY2006 may be substantially less than what will be allocated as incidental catches appear likely to be met before all available DAS may be used. This means that substitution of Regular B DAS in the U.S./Canada Management Area for DAS outside of the area will be limited.

According to estimates of biological impacts, total Regular B DAS used during FY2006 would be between 575 and 511 DAS, respectively, depending on whether median or mean catch rates are used to calculate total DAS. Two analyses were conducted to assess the impacts of the Regular B DAS Program. One analysis was conducted without incorporating the restrictive trip limits on flatfish species, monkfish, and skates intended to ensure that the haddock separator trawl works as designed, while a second analysis incorporated these restrictive trip limits. While the performance standards for the separator trawl would not necessarily change total catch, they would change the amount of monkfish, flatfish, and skates that could be retained for sale and, therefore, the resulting aggregate economic impacts of this program.

Assuming that participating vessels would be able to harvest up to the current possession limits for all flatfish species, monkfish, and skates, the average revenue per DAS for Regular B DAS on haddock trips (i.e. at least 50 percent haddock live weight) inside the U.S./Canada Management Area was $5,600. This means that total revenues from Regular B DAS during FY2006 may be expected to be between $3.2 and $2.9 million; about 70 percent less than the four-quarter period including quarters 3 and 4 of FY2004 and quarters 1 and 2 of FY2005. Taking the separator trawl performance standards into account, the revised estimate of average revenue would be $4,800 per DAS. This means that total revenues from regular B DAS during FY2006 may be expected to be between $2.8 and $2.5 million; about 75 percent less than the four-quarter period between FY2004 and FY2005. Should fishing strategies change and, depending on the effectiveness of the separator trawl in reducing catches of stocks of concern, a larger number of Regular B DAS may be fished in FY2006 than estimated herein. If this is the case, then the estimated adverse economic impact would be lessened. However, the extent to which adverse impacts may have been overstated is uncertain given available information.

While the previously described analyses did not explicitly account for the proposed prohibition on the use of Regular B DAS to target monkfish, a portion of these impacts were subsumed in the estimated loss associated with the restricting the Regular B DAS Program to the U.S./Canada Management Area. Further, since almost all of the monkfish trips under the

Regular B DAS Program that were actually taken inside the U.S./Canada Management Area all used trawl gear, the use of Regular B DAS to target monkfish would be effectively eliminated under the preferred alternative, since the performance standards would not make targeting monkfish a profitable endeavor. For these reasons, the estimated aggregate impact on revenues is inclusive of the effect of the prohibition on the use of Regular B DAS to target monkfish.

Vessel-Level Impacts

Impacts on individual vessels are difficult to assess since it is not possible to determine which vessels may choose to participate, or may be able to participate, in the Regular B DAS Program during FY2006. The potential impacts are likely to depend on how vessels are able to adapt to fishing only inside the U.S./Canada Management Area and the ability/experience prosecuting a directed haddock fishery using a separator trawl. Under these conditions, the 130 vessels that participated in the Regular B DAS Pilot Program may be categorized into three different groups: 1) participating vessels that took no Regular B DAS trips inside the U.S./Canada Management Area; 2) participating vessels that took at least one Regular B DAS trip inside the U.S./Canada Management Area but did not target haddock on any one of those trips; and 3) participating vessels that fished inside the U.S./Canada Management Area on a Regular B DAS and targeted haddock on one or more trips. Vessels in each of these groups may have differing capabilities to adapt to the preferred alternative. For this reason the potential impacts for each group is discussed below.

Group 1: Vessels with no Regular B DAS Inside the US/Canada Management Area

Vessels in this first group may find it more difficult to adapt to the preferred alternative since they may not have the capability to fish inside the U.S./Canada Management Area due to its distance from shore or may be unable to bear the expense of purchasing the necessary gear or may not have the capability to fish the gear. A total of 24 vessels took no Regular B DAS trips within the U.S./Canada Management Area during the duration of the Regular B DAS Pilot Program. More than half of these vessels (14) had a Massachusetts home port (Table 42) while five were from Rhode Island, three from New Hampshire and one each from Connecticut and North Carolina. Based on principal port state, the ranking was similar to that of home port state except that there were two vessels with a Maine principal port state that took no Regular B DAS trips outside the U.S./Canada Management Area.

State	Home Port State	Principal Port State
ME	0	2
NH	3	4
MA	14	11
RI	5	5
CT	1	1
NY	0	0
NJ	0	0
NC	1	1

Table 42: Number of Group 1 vessels by home and principal port state. Group 1 is defined as vessels that took no Regular B DAS trips inside the U.S./Canada Management Area.

All vessels reporting at least one Regular B DAS trip that were less than 50 feet LOA took no trips inside the U.S./Canada Management Area (Table 43). Given the distance from shore of the U.S./Canada Management Area, it is likely that these smaller vessels would be unable to participate in the Regular B DAS Program, as proposed. About 75 percent of vessels from 50 to 70 feet did take at least one Regular B DAS trip to the U.S./Canada Management Area and 90 percent of vessels in excess of 70 feet also to one or more trips to the area. Thus, vessels above 50 feet may be able to adapt to the proposed changes in the Regular B DAS Program although it is not known whether they will choose to do so.

Vessel Length	Number of Vessels With No Trips inside U.S./Canada Management Area	Number of Vessels With at Least One Trip Inside U.S./Canada Management Area
Less than 50	7	0
50 to 70	8	25
Greater than 70	9	81

Table 43: Number of vessels by length class that fished a Regular B DAS inside or exclusively outside the U.S./Canada Management Area.

Assuming that vessels that took no Regular B DAS trips to the U.S./Canada Management Area are unable to adapt to the proposed changes, these vessels would lose, on average, about 8.7 percent of their fishing revenue. However, the impact on fishing revenue could be much larger for some vessels or smaller for others. Estimated revenue losses ranged from less than one percent to a high of 28 percent with an inter-quartile range (i.e. the difference between the impact at the 25th and 75th percentile) of 11.5 percent.

Group 2: Vessels that Fished Inside the US/Canada Management Area With no Directed Haddock Trips

Of the total 130 vessels that participated in the Regular B DAS Pilot Program, 65 took at least one trip inside the U.S./Canada Management Area but did not target haddock (defined as a trip that caught at least 50 percent haddock live weight) on any trip. The majority of these vessels (40) listed a Massachusetts home or principal port (Table 44) while 17 were from Rhode Island. Depending on home or principal state there were either four or five vessels from North Carolina and only one or two each in all other states.

Compared to vessels in Group 1, vessels in Group 2 may be more likely to be able to adapt to the changes in the preferred alternative but this would still require substantial changes in fishing practices and the use of a haddock separator trawl. Whether vessels that did not target haddock would change their fishing practices do so is uncertain. If they choose to, or are unable to do so, they would lose this source of revenue during FY2006 as well as any fishing income from Regular B DAS fished outside of the U.S./Canada Management Area. In this respect, the potential economic impacts on Group 2 vessels may be similar to that of Group 1 vessels. Assuming the 65 vessels that did not target haddock in any quarter over the duration of the Regular B DAS Pilot Program would not do so during FY2006, the average loss in total fishing revenue would be about 16 percent. The range of revenue loss would be between 1.5 percent and 51 percent while the median revenue loss would be 10 percent with an inter-quartile range of between 6.5 percent and 26 percent.

State	Home Port	Principal Port

ME	0	1
MA	40	40
RI	17	17
NY	2	1
NJ	2	1
NC	4	5

Table 44: Number of Group 2 vessels by home and principal port state. Group 2 is defined as vessels that took at least one regular B DAS trips inside the U.S./Canada Management Area but did not target haddock.

Group 3: Vessels that Fished Inside the US/Canada Management Area and Had One or More Directed Haddock Trips

A total of 41 vessels took at least one trip to the U.S./Canada Management Area during the four quarters, November, 2004 to October 2005. With the exception of 4 vessels, all listed a port in Massachusetts as a home or principal port (Table 45). Vessels that did participate in a directed haddock fisher may best able to adapt to the proposed changes to the Regular B DAS Program since they have prior experience in a haddock fishery and may be better prepared to increase their haddock fishing effort. However, these vessels may or may not have experience with a separator trawl so the extent to which they may adopt this gear is not known. Even if these vessels do continue to fish for haddock and/or increase their haddock effort on Regular B DAS, they would still be unable to make up for the loss of fishing income on Regular B DAS outside of the U.S./Canada Management Area. This revenue loss would be zero for 19 of the 41 Group 3 vessels because none of them had used any Regular B DAS outside the area. The average revenue loss for the 22 vessels that did fish a Regular B DAS outside the U.S./Canada Management Area would be 7.6 percent. The range of potential losses was estimated to be from less than one percent to just below 17 percent.

State	Home Port	Principal Port
ME	2	2
MA	37	37
RI	1	2
NY	1	0

Table 45: Number of Group 3 vessels by home and principal port state. Group 3 is defined as vessels that took at least one regular B DAS trips inside the U.S./Canada Management Area and targeted haddock on one or more regular B DAS trips.

Monkfish Restrictions

The extent and magnitude of economic and social impacts of proposed monkfish restrictions are contingent primarily on the vessel and community dependence on the Regular B DAS Program to access the monkfish fishery. The Regular B DAS Program was only in effect for one year under the Pilot Program, and, therefore, any impacts could be considered short-term relative to the overall impact of the multispecies and monkfish rebuilding programs on vessels and communities. Furthermore, the proposed measure would not affect the number of monkfish DAS allocated to limited access monkfish vessels, although some vessels, particularly trawl vessels fishing in the NFMA would have to re-locate their fishing activity to be able to use their monkfish-only DAS. The net effect of such an impact under the preferred alternative, however,

is moderated by the relatively high incidental catch limit that would apply on such vessels fishing on their Regular B DAS in the NFMA, that is, 400 lbs. tail weight per DAS.

Elimination of the Regular B DAS Program under the No Action alternative or prohibiting the use of Regular B DAS to target monkfish under the preferred alternative would affect Category C and D vessels with a limited access multispecies permit. Approximately 560 vessels, or about 74-percent of all monkfish limited access permit holders fall into this category, but only 132 vessels participated in the Regular B DAS Pilot Program. Furthermore, the overall impact on vessel revenues, and on subsequently on their communities would be mitigated somewhat by the fact that affected vessels would still have their full monkfish DAS allocation under either the preferred alternative or the No Action alternative.

Vessels using otter trawls to target monkfish on a Regular B DAS would be the most affected gear group under the preferred alternative and the No Action alternative, which would eliminate a vessel's ability to target monkfish on Regular B DAS, or eliminate the Regular B DAS program altogether, based on data from the Pilot Program (Table 46). Otter trawls in the NFMA and SFMA accounted for 90-percent and 63-percent, respectively, of the monkfish landings under the Regular B DAS Pilot Program. The overall impact of the preferred alternative and the No Action alternative, however, would be only a small fraction of that amount because, as noted, the landings of monkfish under the Pilot Program were less than 10-percent of the total monkfish landings during the period. Also, the calculated net reduction in landings from this table reflect the higher incidental monkfish catch limit that would apply in the NFMA, and does not account for any effort shift that might occur in the future.

Estimates of revenue impacts also appear in Table 46. These estimates were calculated using the lower landings quantities that would be allowed under the preferred alternative, but using the same prices as were seen with the higher observed landings. Thus, these estimates do not take into account potential price increases that could be observed with reduced landings. Furthermore, the possibility that a vessel may use a NE multispecies Regular B DAS or a monkfish-only DAS instead of a monkfish DAS and a Regular B DAS on the same trip is not included in the present analysis. Thus these estimates should be viewed as an upper bound on potential revenue losses, as vessels will likely change fishing behavior in order to mitigate revenue losses.

Under the preferred alternative, there would be an overall 63-percent ($1,783,632) reduction in revenues. Trawl vessels would experience the largest decreases, $648,301 (86-percent) in the SFMA and $566,024 (41-percent) in the NFMA. This is not surprising, since the majority of trips were taken by trawl vessels. Overall, there would be an average decrease of approximately $3,000 per trip. Table 47 summarizes the changes in landings and revenues by vessel length class. Vessels longer than 70 feet comprised 68-percent of the vessels in the Regular B DAS Program, and would experience a 63-percent ($1,128,485) decrease in monkfish revenue. However, due to the large number of trips taken by vessel in this length class, this translates into an average decrease of $3,067 per trip taken. Assuming that the fishing patterns of Regular B DAS Program participants do not change, trips landing monkfish on a Regular B DAS would not necessarily be impacted by the preferred alternative because they landed less monkfish than allowed under the incidental catch limit. In the Pilot Program, about 41-percent of trips landed less than the incidental limit, and would therefore be unaffected. The number of trips that would have lower landings and the associated revenue losses are shown in Table 48or each gear category. Overall, there would be roughly $5,000 decrease in revenue per affected trip.

Monkfish Management Area	Gear	No. of vessels	No. of trips	Category B-Day Landings		Landings with no Regular B DAS Program		Revenue Change	% Change	Avg. Trip Revenue Change	DAS
				Live lbs.	Revenue	Live lbs.	Revenue				
NFMA	Gill net, sink	5	18	54,131	51,091	33,865	30,663	-20,428	-40%	-1,135	36
	Otter trawl, bottom, fish	80	218	1,642,045	1,373,613	963,010	807,590	-566,024	-41%	-2,596	1,531
	Unknown/ other	26	33	127,594	111,141	73,235	64,196	-46,945	-42%	-1,423	198
NFMA Total		111	269	1,823,770	1,535,846	1,070,110	902,449	-633,397	-41%	-2,355	1,765
SFMA	Gill net, sink	7	81	222,001	268,849	0	0	-268,849	-100%	-3,319	98
	Otter trawl, bottom, fish	67	200	928,697	755,013	126,011	106,712	-648,301	-86%	-3,242	1,144
	Unknown/ other	29	45	307,047	256,737	28,801	23,652	-233,085	-91%	-5,180	291
SFMA Total		103	326	1,457,745	1,280,600	154,812	130,365	-1,150,235	-90%	-3,528	1,533
Totals*		214	595	3,281,515	2,816,445	1,224,922	1,032,813	-1,783,632	-63%	-2,998	3,298

*Number of vessels is higher than the number of permits in the CATEGORY B (REGULAR) DAS program as some vessels landed with multiple gear types and in multiple areas.

Table 46 Landings and "savings" of monkfish (live lbs.) in the Regular B DAS Program by monkfish management area and gear.

Vessel Length	Monkfish Management Area	No. of vessels	No. of trips	Regular B DAS landings		Landings with no Regular B DAS Program		Revenue Change	% Change	Avg. Trip Revenue Change	DAS
				Live lbs.	Revenue	Live lbs.	Revenue				
< 60	**NFMA**	3	21	57,374	52,890	37,577	34,025	-18,865	-36%	-898	46
	SFMA	8	84	220,621	266,814	0	0	-266,814	-100%	-3,176	103
< 60 Total		11	105	277,995	319,704	37,577	34,025	-285,679	-89%	-2,721	149
60 – 70	**NFMA**	14	47	115,049	94,404	75,884	62,724	-31,680	-34%	-674	280
	SFMA	17	75	429,341	371,290	39,295	33,502	-337,788	-91%	-4,504	407
60 – 70 Total		31	122	544,390	465,694	115,178	96,226	-369,468	-79%	-3,028	687
> 70	**NFMA**	42	201	1,651,347	1,388,552	956,650	805,700	-582,851	-42%	-2,900	1439
	SFMA	48	167	807,782	642,496	115,517	96,862	-545,633	-85%	-3,267	1023
> 70 Total		90	368	2,459,129	2,031,047	1,072,167	902,563	-1,128,485	-56%	-3,067	2462
Grand Total		132	595	3,281,515	2,816,445	1,224,922	1,032,813	-1,783,632	-63%	-2,998	3298

Table47: Landings and "savings" of monkfish (live lbs.) in the Regular B DAS Program by vessel length class and monkfish management area.

Gear	No. of vessels	No. of trips	Unchanged	Reduced	Revenue Change	Revenue Change per reduced trip
Gill net, sink	12	99	6	93	-289,277	-3110
Otter trawl, bottom, fish	147	418	203	215	-1,214,325	-5648
Unknown/ other	55	78	33	45	-280,030	-6222
Totals	214	595	242	353	-1,783,632	-5052

Table 48: Number of affected trips and associated revenue loss by gear type.

DAS Leasing Program

From May 1, 2004 – April 30, 2005, over 6,000 days were leased, at a value of $2.5 million. The average price per day per lease was $364, but as will be shown later, there was a large amount of variability in these prices. The average number of days leased was 24, and there were 174 lessors and 163 lessees. Additionally, there were at least 36 intra-company leases. Most days at sea were leased by trawl vessels, although there were some leases by gillnet vessels. In terms of port groupings, vessels from Portland leased 1,570 days (roughly 26 percent), New Bedford vessels leased 1,060 days (18 percent) and Gloucester vessels 800 (13 percent).

For this analysis, vessels were grouped into four classes based on length. The length classes are the same as those used in Amendment 13 to summarize fishing activity, and were developed in consultation with the Groundfish Oversight Committee. Most vessels leased days to vessels within their own size category (Table 49), although days were leased to both smaller and larger length classes (leasing to a larger class is possible since the restrictions on leasing DAS based on length are determined by permit baselines, and vessels are allowed to lease to vessels with a baseline that is 10 percent greater). The average length, gross tonnage and horsepower for lessee vessels were all slightly lower than for the lessor vessels (Table 50).

Lessor baseline length category	**Lessee baseline length category**				
	Less than 30	**30-50**	**51-75**	**Over 75**	**Total**
Less than 30					
30-50		1,522	88		1,610
51-75		487	1,548	233	2,268
Over 75	5	40	497	1,702	2,244
Total	5	2,049	2,134	1,935	6,123

Table 49: Number of days at sea leased by vessel baseline size category.

	Lessor	**Lessee**
Gross Tons	82	79
Length	62	59
Horsepower	489	441

Table 50 Mean physical characteristics of lessor and lessee vessels.

Days leased generally stayed in the same state, based on the vessel homeport as reported on permit applications (Table 51), although there was a slight gain in days by Massachusetts vessels (confidentiality prohibits releasing further details). Most DAS were acquired by vessels with homeports in either Maine (26.5 percent) or Massachusetts (62 percent). Vessels also list a principal port on a permit application, described as the city or state where most landings occur. The movement of DAS by principal port state is summarized in Table 52. Both Maine and Massachusetts show a slight gain in DAS as a result of the leasing program based on principal port state.

Lessor home port state	Lessee home port state						
	ME	NH	MA	RI	NY	DE	Total
ME	1,189	10	544			83	1,826
NH	94	251	99			20	464
MA	107	24	2,412				2,543
RI	44		245	117			406
CT		13	23				36
NY	25		212		56		293
NJ	169	19	130	106			423
PA			9				9
VA			53				53
NC			24				24
FL			46				46
Total	1,628	317	3,796	223	56	103	6,123
Net Change	(198)	(147)	1,253	(180)	(237)	103	

Table 51: Number of days at sea leased by vessel homeport state.

Lessor principal port state	Lessee principal port state					
	ME	NH	MA	RI	NY	Grand Total
ME	1,639	38	184			1,861
NH	124	261	89			474
MA	174		2,374			2,548
RI	44		232	130		406
CT		13	40			53
NY	67		153		56	275
NJ	169	19	113	106		406
VA			53			53
FL			46			46
Grand Total	2,216	331	3,284	236	56	6,123
Net Change	355	(143)	736	(170)	(219)	

Table 52: Number of days at sea leased by vessel principal port state.

In order to determine if the vessels likely to lease DAS are those that are most active in the groundfish fishery, vessels were divided into three quartiles based on FY 2004 DAS allocations. Under Amendment 13 regulations, the vessels that were most active in groundfish fishing during the period FY 1996 through FY 2001 were allocated the most DAS. The first quartile had zero baseline "A" days, while the second quartile had between 0.75 and 48.2 days, and the third quartile had 48.3 – 98.4 days. In FY 2004, vessels in the third quartile leased over 5,600 days (92 percent) of the total days leased (Table 53).

Lessor DAS Allocation Quartile	Lessee DAS Allocation Quartile			
	Lessee 1st DAS Allocation Third	Lessee 2nd DAS Allocation Third	Lessee 3rd DAS Allocation Third	Total
Lessor 1st DAS Allocation Third				
Lessor 2nd DAS Allocation Third		132	1,749	1,881
Lessor 3rd DAS Allocation Third	5	347	3,890	4,242
Total	5	479	5,639	6,123

Table 53: Number of days at sea leased by vessel DAS allocation quantile.

Prices peaked in June, and then declined gradually over the year, although there was a spike in the maximum price paid in December 2004 (Figure 15). When tracked together, both the mean days leased and the mean price declined between June 2004, and February 2005 (Figure 16). The prices paid for days ranged between $0 and $2,000 per day. Further examination of the prices paid for days leased show that nearly as many days were leased at less then $1 per day as were leased at $700 per day (Figure 17). Leases were then grouped into two price groups – less than or equal to $350 per day and greater than $350 per day and examined for price trends. The average price for leases greater than $350 per day peaked in June, and then gradually declined over the fishing year, while those between $1 and $350 slowly increased until November, and then stabilized (Figure 18).

Figure 15: Average Price per Day Leased FY2004.

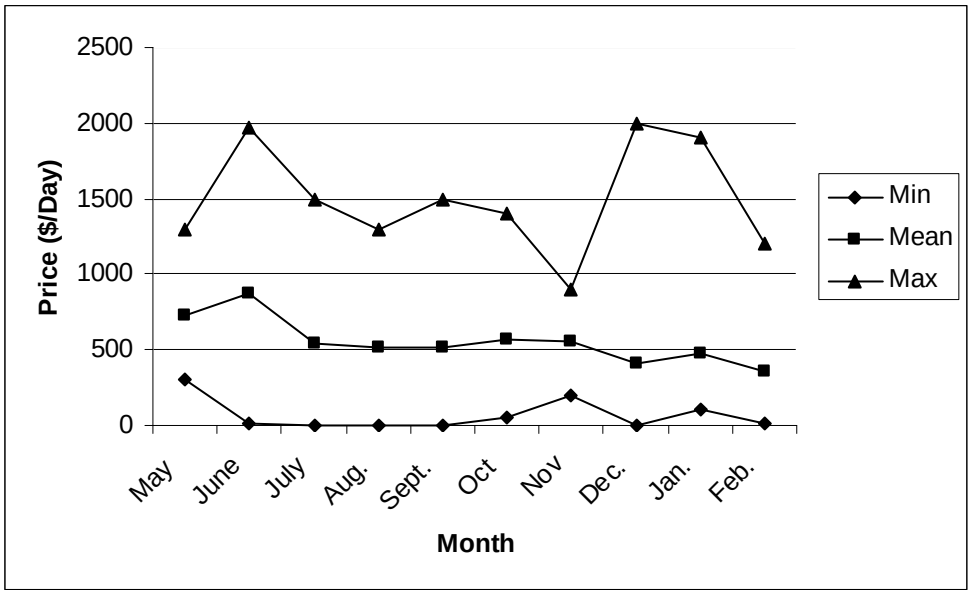


Figure 16: Mean Price and Mean Days Leased per Month FY2004.

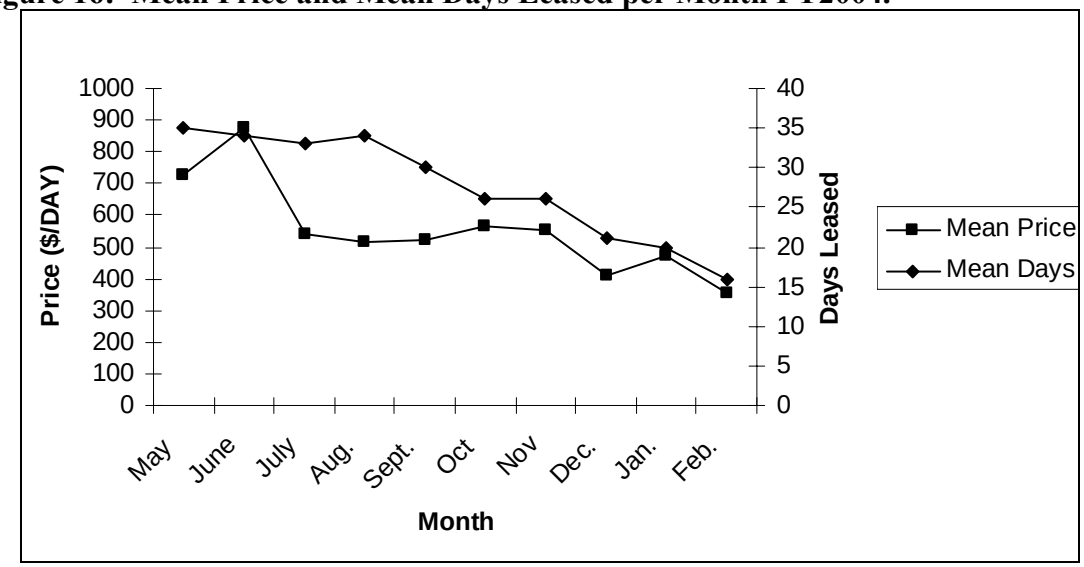


Figure 17: Number of Days Leased by Price Range.

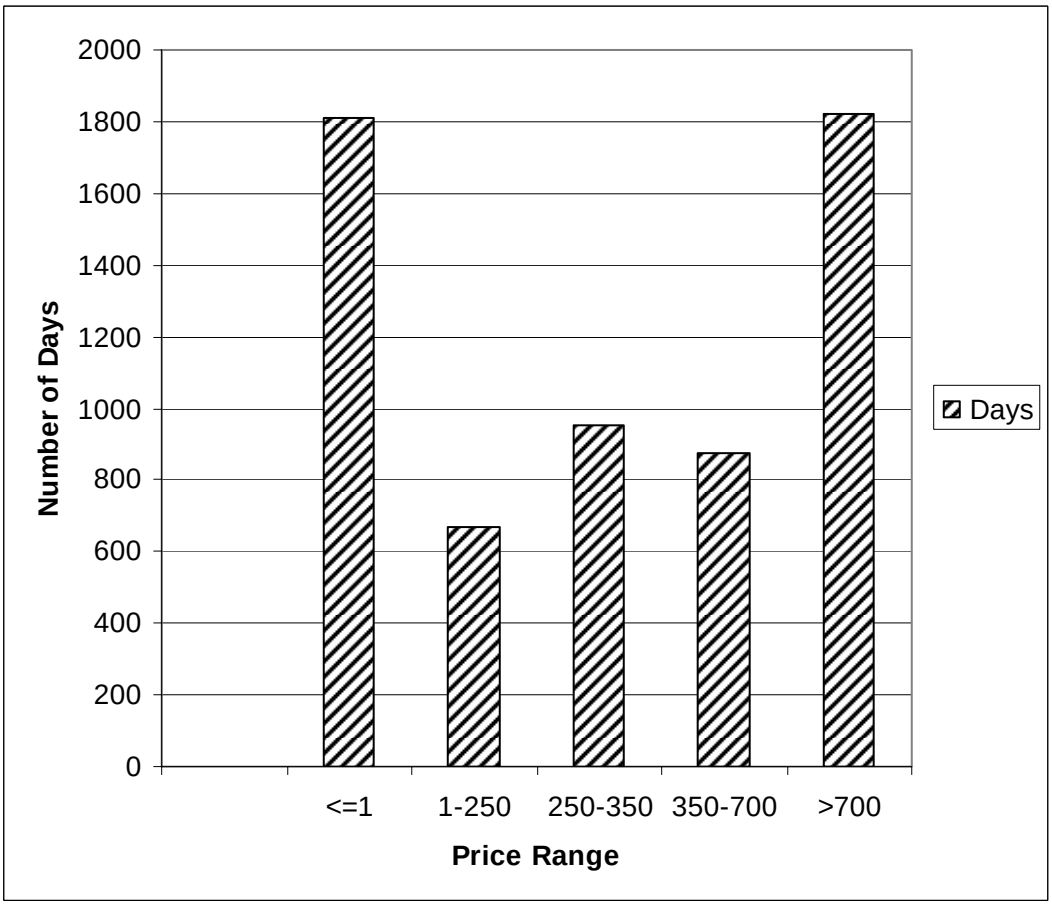
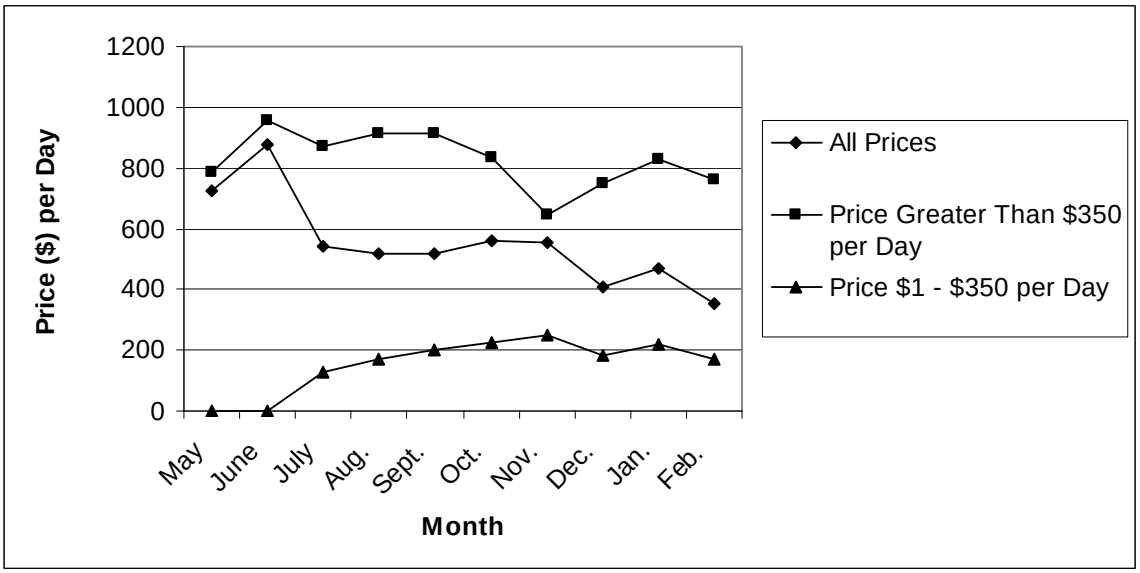


Figure 18: Average lease Price by Month for all leases > $1.



Price paid also depended on gear type (Figure 19). Lease prices above $1 were stratified into three groups -- $1-$350, $350-$700, and greater than $700. Otter trawl vessels leased the most days at sea at the higher prices, while at the lower prices gillnet vessels leased nearly as many days as otter trawl vessels. The three main ports leasing days at sea were Gloucester, Portland and New Bedford. On average, vessels in New Bedford paid the highest price, followed by vessels in Portland and Gloucester (Figure 20). This occurred because vessels in New Bedford were generally bigger and had greater fishing power than those in Portland and Gloucester, as shown by vessel horsepower and length (Figure 21).

Figure 19: Days Leased by Gear type in each price Range.

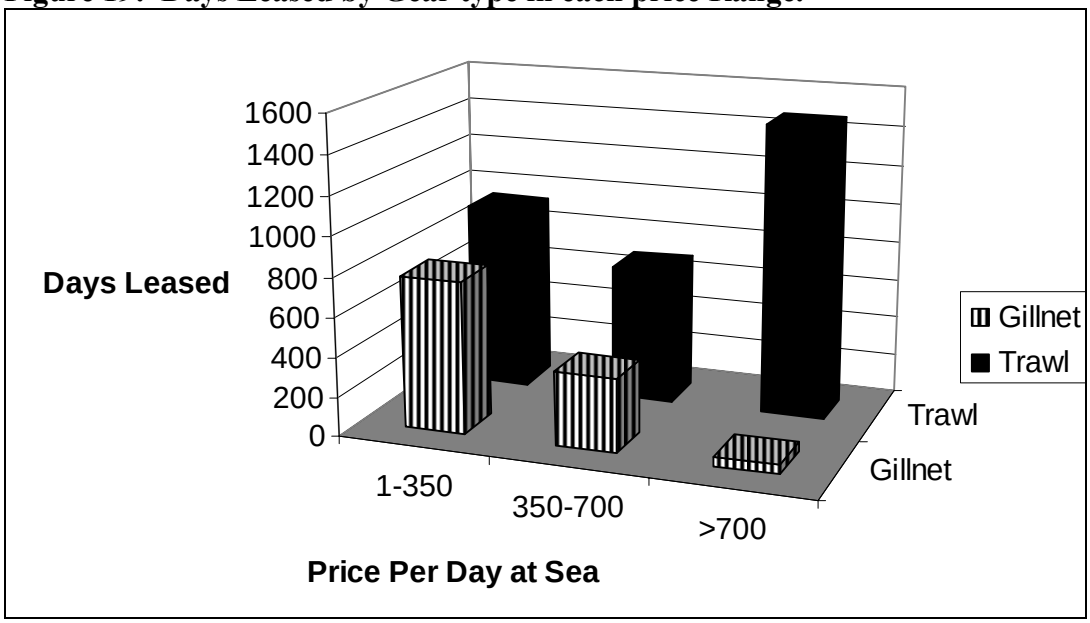


Figure 20: Average Price per Day in the Major Ports.

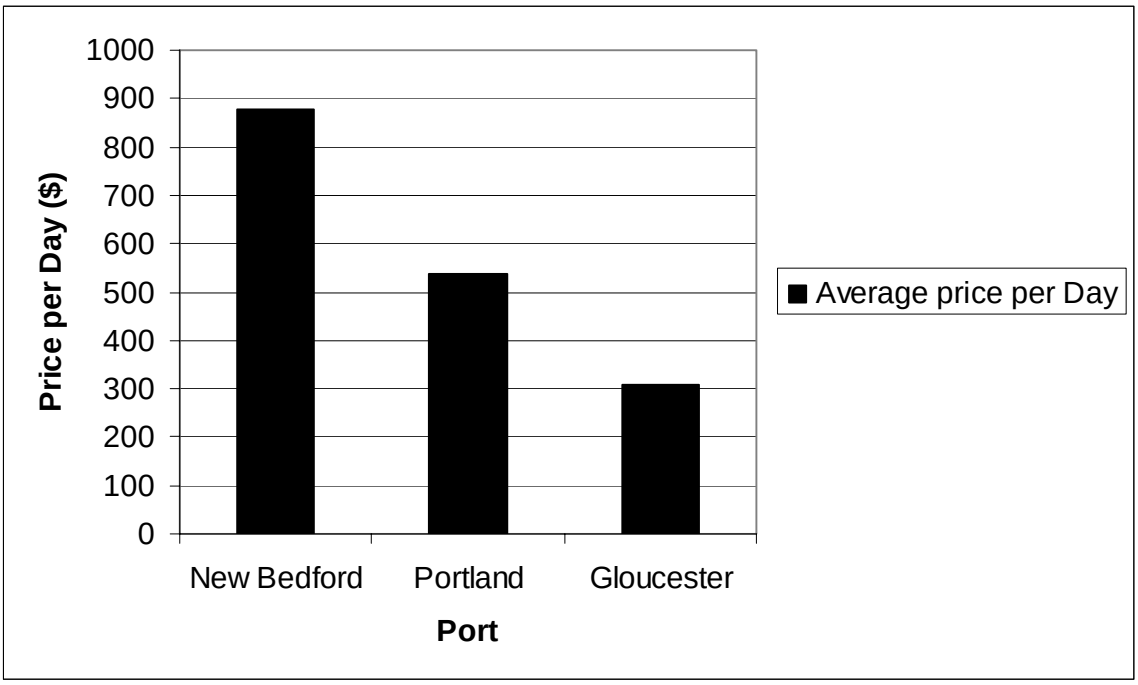
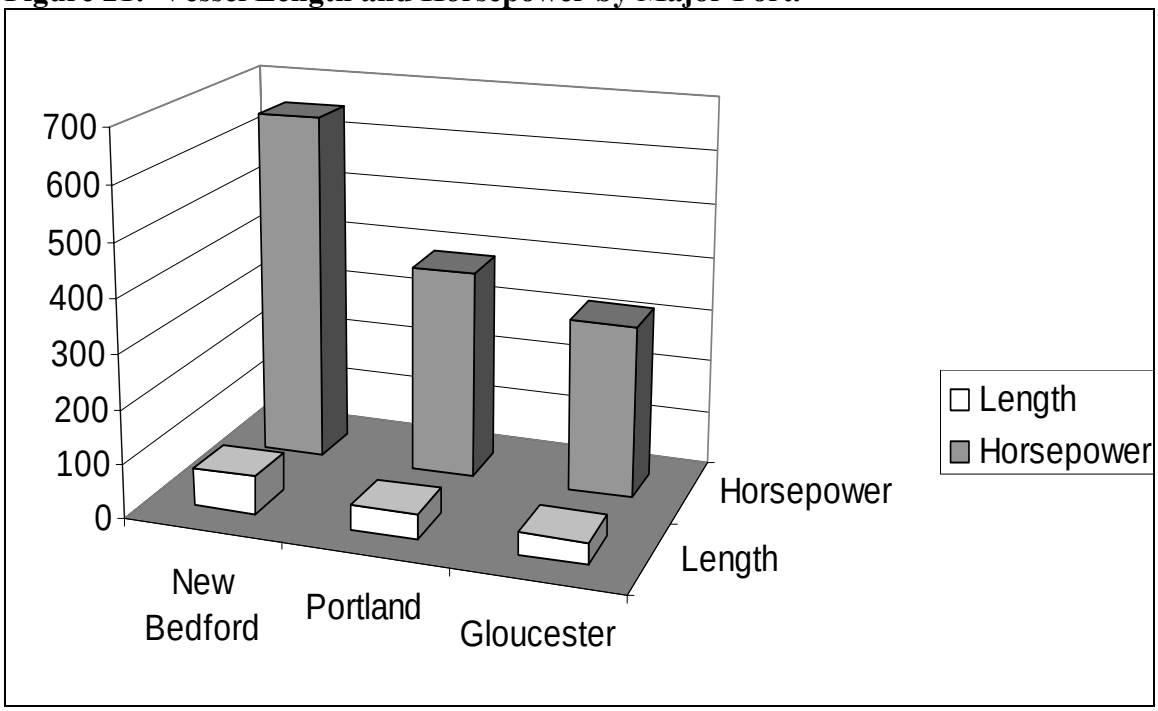


Figure 21: Vessel Length and Horsepower by Major Port.



Economic theory predicts that in a market setting prices paid for a productive asset are related to the potential income that would be generated over time from that asset. For a lease market, the potential income stream would be limited to the term of the lease. To examine the extent to which the performance of the DAS leasing market was consistent with expectations a simple linear regression was run where the dependent

variable was the average lease price per day leased (total lease price divided by days leased). Independent variables included the average revenue per day on groundfish trips and a monthly time trend. Note that average revenue per day was calculated from prices derived from dealer weighout and VTR reported landings for FY2003 by those vessels that leased days. The time trend was included to account for the declining trend in average prices noted above.

A total of 179 trades were included in the model where the reported lease price was greater than $1. The R-square value for the model was low at 0.24 (Table 54) reflecting the large amount in variability in the data. However, the F-test that all variables are insignificant was rejected, and each independent variable was found to be statistically significant. Groundfish revenue per day was found to be positively related to the average daily lease price indicating that lease prices were consistent with income potential of the lessee vessel. That is, vessels with higher groundfish income potential paid more for a lease than vessels with lower income potential.

Variable	Coefficient	Standard Error	t-Value	Probability > t
Intercept	328.26	95.13	3.45	0.0007
Groundfish Revenue per Day	0.103	0.016	6.31	<0.0001
Time	-32.66	9.58	-3.41	0.0008

Adjusted R-Square = 0.24
F Value = 29.51
Probability > F < 0.0001
N = 179

Table 54: Summary of Linear Regression of Lease Price on Potential Income.

Vessels that leased days to others (lessors) at a price of one dollar or less were identified, and their 2004 fishing activity summarized. There were 73 vessels in this category, and the majority (55) had no landings of any species in 2004. Eighteen vessels had landings of both groundfish and non-groundfish species, or only non-groundfish species.

The economic impact of Amendment 13 included a break-even analysis which showed the number of days required for vessels to meet overhead costs, and the additional days needed to meet a certain level of crew salary (Table 213, Page I-622 of NEFMC 2003). This level of days means the boat is just meeting their expenses, and does not include profit, or return to capital. In order to assess whether the leasing program provided some regulatory relief for the lessees, their allocation of "A" days plus the number of days they leased were examined. Vessels were first assigned a gear group based their 2004 landings history, and then stratified by length based on the same groupings used in the Amendment 13 analysis. There were two gillnet size classes, and three trawl size classes. Results showed that for all groupings on average, lessees were allocated enough "A" days to meet their overhead expenses, but not enough to meet their crew expenses given an annual crew salary of $35,000 (Table 55). Using the mean days leased in each category, the sum of the mean allocated "A" days and the days leased was enough to meet overhead and crew expenses, with the exception of under 50 foot trawl vessels. For the small trawl fleet, the difference between the sum of leased and allocated days, and breakeven days was small enough (seven days) that it is likely these vessels were also meeting their overhead plus crew expenses. The overall impact of the leasing

program provided regulatory relief for lessee vessels because it allowed them to lease enough days to continue to fish, meet their overhead expenses, and pay their crew.

Gear	Vessel Length (feet)	Number	Allocated "A" Days Mean	Leased "A" Days Mean	Total "A" Days Mean	Breakeven Days Overhead	Breakeven Days with $35k Crew Salary
Gillnet	<40	14	51	22	73	14	68
Gillnet	>=40	39	52	35	87	16	64
Trawl	<50	19	54	26	80	26	87
Trawl	>=50 and <70	43	59	37	96	37	94
Trawl	>=70	46	71	51	122	50	115

Table 55: Average "A" Days Leased and Allocated by Gear and Size Class Compared to Breakeven.

The number of DAS used by vessels that leased DAS was compared to the baseline allocation (allocation before leasing) and the net allocation (allocation after leasing, sanctions, transfers, etc.). The leasing program enabled 145 vessels to fish more than their baseline allocation of DAS. Some vessels that leased DAS did not use all the DAS they had available. Thirty percent of the vessels that leased and used DAS used only 80 percent of the DAS available or less, 57 percent used 90 or less, and about 43 percent used more than 90 of the DAS available. In addition, a small number of vessels that leased DAS did not use any groundfish DAS (Table 56). Of the 160 vessels that leased and used DAS, forty-six (28.8 percent) also used either Category B (regular) or Category B (reserve) DAS.

Percentage of Baseline DAS Allocations			Percentage of Net DAS Allocations		
% of Baseline Allocation	*Frequency*	*Cumulative %*	*% of Net Allocation*	*Frequency*	*Cumulative %*
0%	0	0%	0%	0	0%
10%	0	0%	10%	0	0%
20%	0	0%	20%	0	0%
30%	0	0%	30%	1	1%
40%	0	0%	40%	0	1%
50%	1	1%	50%	2	2%
60%	0	1%	60%	5	5%
70%	1	1%	70%	11	12%
80%	5	4%	80%	28	30%
90%	8	9%	90%	44	57%
100%	12	17%	100%	65	98%
110%	12	25%	More	3	1009%
120%	16	35%			
130%	12	42%			
140%	16	52%			
150%	13	60%			
160%	20	73%			
More	43	100%			

Table 56: DAS use by vessels that leased DAS, as a percent of baseline and net allocations.

There is an interest in determining whether leasing changed the use of DAS as a percentage of DAS allocations. The rate of DAS use bears on determining the number of DAS to allocate to achieve a particular level of DAS used. These rates have been routinely reported in Multispecies Monitoring Committee (MSMC) reports since 1996, and were updated in Amendment 13 through 2001. During the development of Amendment 13, the ratio of Category A and Category B DAS was adjusted to account for an increase in DAS. This adjustment assumed that 3,000 DAS would be used as a result of the DAS Leasing Program.

In order to compare FY 2004 to prior years, permits must be grouped into consistent categories. Permit categories have been used in the past, but Amendment 13 revised the permit categories for multispecies vessels. The most important change is that most vessels now possess individual DAS permits, whereas under Amendment 7 the largest permit category was the fleet permit category. These changes complicate comparing the use of DAS in FY 2004 to prior years. An additional complication is that it is not possible to separate the impacts of leasing on DAS use from other Amendment 13 measures.

This problem can be partially addressed by summarizing FY 2004 DAS use for permits based on the Amendment 7 permit category held by that vessel. Because of the structure of the databases, it is difficult to track every permit back to its earlier permit category and account for every DAS allocated and used. This is because permits are transferred during the course of a fishing year – sometimes more than once – making it difficult to prevent double-counting of allocated or used DAS. As a result, the following

tables due not represent a complete census of all DAS allocated and used in FY 2004, but is a snapshot of the data at a particular time. While 30,063 Category A DAS were used in FY 2004, the table accounts for only 27,731 used DAS – 92 percent of the actual total (Table 57). Similarly, this table only accounts for 98 percent of the Regular B DAS used in FY 2004 and 97 percent of the Category B (reserve) DAS used in FY 2004. Ninety-one percent of the allocated Category A DAS (44,126) are also reported. The table accounts for 674 of approximately 749 permits that used DAS in FY 2004.

Table 58 shows DAS use, by Amendment 7 permit category, based on the information in Table 57. There are three different rates shown. For FY 2004, the rate based on baseline allocations compares the DAS used to the original Amendment 13 DAS allocations, prior to any sanctions, transfers, or leases. The rate based on final allocations is based on allocations after taking into account all sanctions, leases, transfers, etc. Finally, the last category shows DAS use only for those vessels that actually used a DAS, based on final allocations.

A7 Permit Cate-gory	Number of vessels	Baseline Allocation (before leasing or transfers) with carryover			Final Allocation (after leasing or transfers)			Number of Vessels Using DAS			DAS Final Allocation to Vessels Using DAS			DAS Used		
		A	B1	B2	A	B1	B2	A	B1	B2	A	B1	B2	A	B1	B2
A	129	9,417	3,771	3,139	11,141	3,705	3,083	114	68	62	10,946	3,378	2,823	9,937	1,319	878
B	959	28,851	18,094	9,616	26,156	17,017	8,992	520	42	48	23,616	11,365	7,011	16,814	338	370
C	2	34	30	11	34	30	11	1	0	0	34	20	11	27	0	0
D	71	916	987	305	845	933	282	23	1	2	666	450	222	352	0	9
E	39	733	612	244	636	602	244	10	3	1	452	218	144	392	17	4
F	2	82	47	27	29	47	27	1	0	0	29	20	10	26	0	0
G	7	222	126	74	252	126	74	5	1	0	223	99	67	183	1	0
TOTAL	1,209	40,254	23,667	13,418	39,092	22,460	12,713	674	115	113	35,967	15,548	10,288	27,731	1,676	1,261

Table 57: Fishing Year 2004 DAS baseline and final allocations and usage by Amendment 7 permit category. Category B DAS include carry over.

A7 Permit Category	Percentage of Baseline Allocation Used			Percentage of Final Allocated DAS Used			Percentage of Allocated DAS (to vessels that called in) used		
	A	B1	B2	A	B1	B2	A	B1	B2
A	106%	35%	28%	89%	36%	28%	91%	39%	31%
B	58%	2%	4%	64%	2%	4%	71%	3%	5%
C	78%	0%	0%	78%	0%	0%	78%	0%	0%
D	38%	0%	3%	42%	0%	3%	53%	0%	4%
E	53%	3%	2%	62%	3%	2%	87%	8%	3%
F	32%	0%	0%	91%	0%	0%	91%	0%	0%
G	82%	1%	0%	73%	1%	0%	82%	1%	0%
TOTAL	69%	7%	9%	71%	7%	10%	77%	11%	12%

Table 58: FY 2004, percentage of DAS used by Amendment 7 Permit Category.

The overall use of DAS increased to 69 percent of the baseline allocations, compared to 59 percent in FY 2003 and the FY 1998-2003 average of 44 percent. The rate is 71 percent of the final allocations – this difference may be due in part to the previously described difficulty in tracking all permits, as well as the fact that only whole DAS can be exchanged in the leasing program. Note that the leasing program allowed Amendment 7 Category A vessels to use 106 percent of their baseline allocation. Clearly the leasing program is at least partly responsible since that is the only way vessels acquired additional DAS in FY 2004. Both Amendment 7 Category A and Category B DAS vessels increase DAS use compared to 2003 and the six-year average.

In summary, the DAS Leasing Program resulted in an active market in the exchange of DAS, with nearly 15 percent of the baseline allocations being transferred through the leasing program. The primary users of the program were those vessels that received the highest DAS allocations in FY 2004, showing that the leasing market was mainly used by active groundfish vessels, the group predicted to have the largest reduction in fishing revenues under Amendment 13. The DAS Leasing Program provided regulatory relief which allowed lessee vessels, on average, to fish enough to cover their overhead and crew expenses. Consistent with the analysis of Amendment 13, DAS tended to move to the primary groundfish fishing states of Maine and Massachusetts.

Eastern U.S./Canada Haddock SAP

Under this measure, the start date of the Eastern U.S./Canada Haddock SAP would be delayed until August 1. An assessment of the economic impacts of this measure was attempted using available landings and price data. Landings information was gathered from linking landings data from dealer electronic reports with trip data from VMS data sources. Price data was obtained by averaging monthly ex-vessel prices paid for species landed at the Whaling City Seafood Display Auction. However, since average monthly price data for FY 2005 was not available at the time of this analysis, average monthly price data was obtained for FY 2004 (see Table 59 below).

	Average Price		
	May	**June**	**July**
Cod (large)	$1.70	$1.48	$2.16
Haddock	$1.69	$1.60	$1.55
Pollock (large)	$0.58	$0.57	$0.31
American Plaice (large)	$2.13	$1.09	$1.02
Witch Flounder (large)	$3.61	$2.87	$2.34
Winter Flounder (large)	$1.00	$0.72	$1.20
Yellowtail Flounder (large)	$1.42	$0.54	$0.48
Halibut		$4.25	
Ocean Perch		$0.75	
Hake (large)	$0.72	$0.54	$0.27
Monkfish Tails (large)	$2.21	$2.14	$1.84
Skate Wings	$0.55	$0.48	$0.42
Cusk		$0.85	
Summer Flounder (jumbo)		$1.08	
Bluefish		$0.65	$0.23
Wolfish	$0.30	$0.27	$0.26

Table 59: Average monthly price for fish landed at the Whaling City Seafood Display Auction during 2004.

Revenues generated from groundfish landed from the Eastern U.S./Canada Haddock SAP between May and July 2005 are found in Table 60. For species that did not have an average price for a particular month, the average price paid between May through July was used for this analysis. Groundfish landings from this SAP from May through July 2005 accounted for over $1.5 million in ex-vessel revenue using FY 2004 prices. Haddock accounted for the most revenue generated ($650,786) followed by yellowtail flounder ($256,470), winter flounder ($249,022), witch flounder ($162,796) and American plaice ($111,932).

Species	May	June	July	Total
Cod	$30,537	$10,005	$17,790	$58,332
Haddock	$481,758	$35,416	$133,612	$650,786
Pollock	$45,728	$557	$10,084	$56,370
American Plaice	$72,424	$18,578	$20,929	$111,932
Witch Flounder	$43,840	$61,567	$57,389	$162,796
Winter Flounder	$147,650	$22,693	$78,679	$249,022
Yellowtail Flounder	$223,010	$20,717	$12,744	$256,470
Halibut	$650	$77	$480	$1,207
Ocean Perch (redfish)	$0	$584	$884	$1,469
Hake	$589	$616	$1,018	$2,223
Total	$1,046,187	$170,809	$333,609	$1,550,605

Table 60: Ex-vessel revenue from groundfish species landed from the Eastern U.S./Canada Haddock SAP during May through June 2005 (using average monthly prices from Table 26).

Revenues generated from non-groundfish species landed from the Eastern U.S./Canada Haddock SAP between May and July 2005 are found in Table 61. For species that did not have an average price for a particular month, the average price paid between May through July was used for this analysis. Monkfish landings from this SAP during this time period generated the most non-groundfish ex-vessel revenue, followed by skates. The other species were landed in low amounts and did not substantially add to vessel revenue from this SAP. It should be noted that no price information for this time period for thorny skate, Atlantic sea scallop, or American lobsters was available at the time of this analysis.

Species	May	June	July	Total
Cusk	$26	$99	$725	$849
Summer Flounder	$676	$321	$315	$1,312
Monkfish Tails	$76,908	$48,779	$84,767	$210,454
Skates (undefined)	$14,577	$9,425	$6,567	$30,569
Wolfish	$2	$0	$89	$91
Total	$92,189	$58,623	$92,463	$243,275

Table 61: Ex-vessel revenue from non-groundfish species landed from the Eastern U.S./Canada Haddock SAP during May through June 2005 (using average monthly prices from Table 26).

To assess the impact of this proposed measure on specific ports, the amount of the primary species landed from this SAP in each port was multiplied by the average monthly price. This produced the estimated ex-vessel losses associated with this measure for vessels landing in each port (see Table 62). The proposed delayed start date for this SAP would result in greatest economic impacts to the ports of New Bedford and Gloucester, as these ports experienced the highest level of landings from this SAP.

Species	Port			
	Gloucester	New Bedford	Point Judith	Portland
Haddock	$218,357	$359,892	$37,466	$35,073
Yellowtail Flounder	$16,667	$168,035	$71,766	$0
Winter Flounder	$43,194	$190,893	$12,333	$2,603
Monkfish	$134,192	$47,575	$28,309	$475
Witch Flounder	$88,279	$22,318	$52,134	$69
American Plaice	$87,529	$7,326	$16,957	$117
Total	$588,218	$796,039	$218,965	$38,336

Table 62: Ex-vessel revenue losses associated with a delayed start date of August 1 for the Eastern U.S./Canada Haddock SAP based on the primary species landed from this SAP in 2005.

The overall economic impact of this proposed measure to ex-vessel revenue can be estimated by adding together the ex-vessel revenues generated by the sale of all species caught in the Eastern U.S./Canada Haddock SAP between May through July 2005. Ex-vessel revenue losses from this proposed measure amount to $1,793,880 and would primarily affect vessels landing in New Bedford and Gloucester. This revenue would be available to vessels under the No Action alternative, however, as vessels would

be able to fish in this SAP beginning May 1, 2006. It should be noted, however, that the impacts of this measure may be offset by the potential for this delayed start date to prolong availability of the GB cod and GB yellowtail flounder TACs specified for the Eastern U.S./Canada Area and this program. In doing so, vessels may observe higher prices for these species throughout the year than they would if they were allowed to land larger amounts early in the fishing year, creating a glut in the market. This effect is enhanced, and the potential increases in ex-vessel prices, especially in conjunction with the proposed restrictive trip limits for flatfish (i.e., flounder) species. However, it is impossible to predict exactly how much any potential higher prices may offset revenue losses from the delayed start date.

The landing limit restrictions for flatfish, monkfish, and skates and the lobster landing prohibition proposed by this action would have a negative impact on vessel revenue. During the 2005 fishing year, vessels participating in this SAP landing 18,361 lb of flatfish on approximately 39 trips, 206,135 lb of monkfish on 53 trips, 69,828 lb of skates (all species combined) on 27 trips, and 15,436 lb of American lobster. Under the proposed rule, participating vessels could not land lobster, resulting in a loss of $64,677, using an average price of $4.19 per pound landed in 2004. In 2005, the average landings of flatfish, monkfish, and skates by participating vessels were 471 lb per trip for flatfish, 3,889 lb per trip for monkfish, and 2,586 lb per trip for skates. As a result, the proposed trip limits would reduce monkfish landings by 3,389 lb per trip and reduce skate landings by 2,086 lb per trip for an additional ex-vessel revenue loss of nearly $7,000 and $1,000, respectively. Note that this estimate uses the average prices for monkfish and skates listed in Table 59 and does not represent an average yearly price that would be observed. Although imprecise, this analysis indicates that the proposed landing limits for flatfish, monkfish, and skates is likely to result in overall negative economic impacts under the propose action on the order of $72,000. While the average landing of all flatfish species combined was less than 500 lb per trip, the average landings for trips that landed either GB winter flounder or GB yellowtail flounder exceeded 6,000 lb per trip for each species. As a result, there is the likelihood that there would be additional negative economic impacts due to sacrificed landings of flatfish due to the proposed trip limits.

To put these measures into perspective, under the No Action alternative, the SAP would begin on May 1, 2006. During the 2005 fishing year, the use of Category B DAS in this SAP constituted fully 83 percent of the DAS used in this SAP. Applying this proportion to the 2005 fishing year catch rates, it is estimated that nearly 27,000 lb of GB yellowtail flounder would be caught under a Category B DAS during the month of May. Accordingly, the proposed 2006 incidental catch TAC for GB yellowtail flounder (11.1 mt, or approximately 24,500 lb) would be caught before the end of May 2006. This would have required NMFS to prohibit the use of Category B DAS in this SAP for the duration of the fishing year. As a result, such an action would cause substantial disruptions in fishing behavior and would have likely resulted in equally substantial reductions in potential fishing revenue from this SAP. Such a closure may result in the loss of $544,068, or the ex-vessel value of both groundfish and non-groundfish species landed in June and July ($655,504) multiplied by 0.83 - the percentage of Category B DAS used in this SAP, assuming catch rates under Category B DAS remain the same in FY 2006 as they were in FY 2005. Therefore, the expected ex-vessel revenue losses associated with the proposed delay in the start date for this SAP beyond the No Action

alternative would be approximately $1,250,000, plus any impacts resulting from the landing limits for flatfish, monkfish, and skates and the lobster landing prohibition.

Eastern U.S./Canada Area Trip Flexibility

It is not possible to quantify to economic impacts of the proposed measure to allow flexibility on trips to the Eastern U.S./Canada Area because there is no data on the number of trips on which the profitability was marginal, and would have been improved by the vessel fishing outside of the Eastern U.S./Canada Area on the same trip. Although the profitability of all trips would not be increased, the profitability for some trips, and therefore for the fishery as a whole would be increased.

Recreational Management Measures

The preferred alternative would directly affect recreational anglers and have an indirect impact on party/charter operators through a potential change in passenger demand for party/charter fishing trips. The preferred alternative would increase the cod size limit from 22 to 24-inches in the GOM and would prohibit the possession of cod in the GOM from November 1 through March 30. The economic impact on recreational anglers of these measures is measured by the diminished value (consumer surplus) of a recreational fishing trip while the impact on party/charter operators is measured by the change in profit due to a potential change in sales of fishing trips. Due to these differences angler impacts and party/charter impacts are discussed separately.

Recreational Anglers

The economic value for any good or service is measured by consumer surplus which is defined as the difference between what individuals would be willing and able to pay and the market price. Even though market prices are generally not observed for recreational fishing, the concept of consumer surplus as a measure of economic value is still valid. A variety of non-market valuation techniques have been applied to valuation of recreational fishing. These techniques include variations of the travel cost model, contingent valuation, and contingent ranking. Each of these methods infer economic values from observed fishing site choices (travel cost) or from surveys of recreational anglers (contingent valuation/ranking). Unfortunately, no such studies have been conducted to estimate the economic value of recreational fishing for groundfish in general or cod in particular.

The value of a recreational fishing trip depends on a variety of factors that include individual attributes, motivations for fishing, fishing quality, and the cost of taking a fishing trip. The manner in which any given individual responds to a change in fishing regulation depends upon the interaction among these factors and the magnitude of the change. Regardless of how anglers would respond, it may be presumed that more restrictive regulation would result in some loss of economic value either because the value of a trip taken to target cod would be diminished since the preferred alternative would reduce retention rates or anglers may switch to less preferred species. Unfortunately, the magnitude of this loss cannot be estimated given available data. Nevertheless, some assessment of the potential differences in impact particularly due to

the change in size as compared to a seasonal prohibition and among different fishing modes is possible.

A change in size limit is likely to have lower impact on recreational fishing value than a seasonal prohibition on cod even though anglers would still be able to fish for other groundfish or other species. However, in the GOM, there are relatively few alternative species that may be available to recreational anglers during much of the duration of the proposed season. Compared to the party/charter mode, the economic impact of the season prohibition on cod is likely to be greater on private boat anglers because proportionally more of the private boat angler trips take place during late fall. In calendar year 2004 approximately 20 percent of private boat mode trips that caught cod took place between November 1 and March 30 as compared to only 6 percent for the party/charter mode. By contrast, a larger proportion of the party/charter catch in calendar year 2004 was 22-23 inches than was the case for private boat anglers. From a conservation perspective, the difference in seasonal and size limit impact resulted in a modest disproportionate impact on private boat anglers, but the disparity between modes is likely to be larger in economic terms.

While it is true that a prohibition on possession of cod does not mean that anglers may not fish for other groundfish species (principally haddock), however, only small quantities of haddock were caught by either fishing mode prior to 2003, and no haddock was landed by private boat anglers during the proposed cod seasonal prohibition until 2004. This suggests that opportunities to target haddock during the months cod possession will be prohibited will be limited. Further, since a much larger proportion of private boat trips take place during these months the adverse impact on benefits from fishing will be larger on private boat anglers as compared to party/charter anglers.

Party/Charter Operator Impacts

Impacts on party/charter operators depend on how their potential clients react to the proposed regulatory changes. Angler response to increased size limits is uncertain although guidance provided by the Recreational Advisory Panel suggests that party/charter anglers tend to be motivated more by expectations for catching and being able to keep fish than they are with the size of fish. Logbook data since fishing year 2001 tend to bear this out as the number of passengers taken party/charter trips in the GOM that landed cod has remained almost constant even though the size limit was increased from 21 to 22-inches in FY2002. Notably, a bag limit was also imposed in the same year for the first time on GOM cod party/charter anglers and passenger trips actually increased slightly in both FY2003 and FY2004. For this reason, the change in the size limit may not result in any significant change in demand for party/charter trips in the GOM.

The seasonal prohibition on cod is likely to have some impact on passenger demand. This impact is likely to be small, however, since the number of party/charter passengers taken during the November through March season averaged 2,100 passengers from 2001 to 2004; no more than 2 percent of total passenger load. According to an expenditure survey conducted in 1998 passenger fees in Massachusetts for party/charter trips averaged $78 for residents and $60 for non-residents (Steinback and Gentner, 1998) where approximately 75 percent of trips were taken by Massachusetts residents. Assuming the proportion of resident and non-resident passengers does not vary by season, the expected loss in passenger revenue would be $154,000. This estimate is

based on the Massachusetts data since at least 85 percent of anglers took trips that originated from a Massachusetts location during FY2001- FY2004 and assumes that passenger demand will fall to zero.

Due to differences in vessel safety equipment requirements the party/charter fleet is segmented into operations that only able to carry six or fewer passengers and those that may carry more than six passengers. In each of the past four years (2001-2004) almost all of the trips taken in the GOM during the months of November through March were on trips with six or fewer passengers. This means that the impact of the preferred alternative may differ considerably between operations that cater to a seasonal tourist demand and operations that cater to a more specialized clientele.

During FY2004 there were a total of 148 vessels that took at least one trip in the GOM that landed at least one cod. Of these vessels, 123 would not be affected by the seasonal prohibition on cod because they either took no party/charter trips at all from November through March or took no trips that landed cod in the GOM. Of the 25 vessels that would be affected by the proposed seasonal prohibition, two vessels carried passengers for hire exclusively during the months of November – March. These two vessels would be unable to operate at all without changing their season of operation or by finding passengers that would be willing to take a trip where species other than cod could be retained. Assuming vessels are unable to make up for the lost passenger demand, the loss in revenue from party/charter fees would range from less than 1 percent to 29 percent with a median loss of 9 percent.

If affected vessels are unable to compensate for the loss in party/charter revenue they may be able to increase some level of commercial fishing activity since the majority hold at least one other commercial groundfish permit. However, only 8 of the 25 affected vessels actually had reported commercial sales during FY2004. Thus, the majority of affected vessels do appear to rely exclusively on party/charter fees to sustain business operations.

8.1.6 Social Impacts

The need to assess social impacts emanating from federally mandated fishing regulations stems from the National Environmental Protection Agency (NEPA) and SFA (under National Standard 8) mandate that the social impacts of management measures be evaluated. It is important to note that the current interpretation of National Standard 8 requires the Council to consider the importance of fishery resources to affected communities and provide those communities with continuing access to fishery resources, but it does not allow the Council to compromise the conservation objectives of the management measures. The analysis that follows provides a brief context for understanding possible social impacts resulting from the proposed measures in this action.

Communities that would most likely be affected by measures contained in this preferred alternative are the communities with close association to the groundfish fishery. These communities were identified in the FSEIS prepared for Amendment 13 because they have an active and large NE multispecies fishing fleet with shoreside facilities that depend on groundfish for a substantial portion of their business (NEFMC 2003). The primary communities affected by this action include: Portland, Maine; Portsmouth, New Hampshire; Gloucester, Massachusetts; Boston, Massachusetts; Chatham/Harwichport, Massachusetts; New Bedford/Fairhaven, Massachusetts; Point Judith, Rhode Island; and

Eastern Long Island, New York (see Section 5.6 of the Amendment 13 FSEIS, NEFMC 2003).

Daily routines, safety, occupational opportunities, and community infrastructure are examples of social impacts that can be affected by changes in management measures. Modifications to daily routines can make long-term planning difficult. Changes in management measures that limit access to fishing may increase the likelihood of safety risks. Increased risk can result when fishermen spend longer periods at sea in order to minimize steam time to and from fishing grounds, operate with fewer crew, and fish in poor weather conditions. These issues were highlighted in Amendment 13 as the most important considerations for evaluating social impacts of management measures (NEFMC 2003). As a result, the social impact analysis for this action focuses on evaluating the following five social impact factors: Regulatory discarding; safety; disruption in daily living; changes in occupational opportunities and community infrastructure; and formation of attitudes.

Regulatory Discarding

Excessive regulatory discards cause fishermen to feel as if the fishery resource and their time are being wasted and that they are forced to shovel over dead fish at a loss to the resource, the market, and their revenue potential. The preferred alternative includes several measures that affect regulatory discarding. The preferred alternative includes incidental catch TACs and very small possession/landing limits for GB winter flounder and GB yellowtail flounder for vessels participating in the Regular B DAS Program. These TACs and possession limits provide incentives for vessels to avoid catching large amounts of these stocks of concern when targeting healthy groundfish stocks under this program, thereby minimizing regulatory discards associated with this program. In addition, the requirement to use the haddock separator trawl should provide some means of minimizing regulatory discards, if configured properly. The small possession limits for monkfish, flounders, and lobsters when using a haddock separator trawl should provide sufficient incentives to make sure the net is performing properly to minimize regulatory discards.

The preferred alternative reduces trip limits for GOM cod and CC/GOM, GB, and SNE/MA yellowtail flounder. The purpose of these reductions in trip limits is to reduce incentives to target these species without creating excessive discards. There is not expected to be any social impacts from regulatory discards associated with the GB yellowtail flounder possession limit. This possession limit was suggested by industry to reduce the harvest rate of this species such that available TAC remains available throughout the fishing year. This would eliminate any necessary regulatory discards should the TAC be reached prior to the end of the fishing year and the possession of this species prohibited for the remainder of the fishing year.

Reductions in available Category A DAS (as part of the Amendment 13 default measures) under the preferred alternative and differential DAS counting could provide incentives for vessels to high-grade their catch to maximize revenue from reduced DAS. If this practice were to be increased by the preferred alternative, regulatory discards would increase. However, it is impossible to predict with a high degree of certainty whether such behavior changes will result from this action. It should be noted that such

behavior could be reduced by the availability of additional DAS and opportunities to use Category B DAS provided by the DAS Leasing Program and the Regular B DAS Program included in the preferred alternative, as these programs attempt to provide additional fishing opportunities to increase revenue and decrease the need to high-grade catch.

Safety

National Standard 10 requires that the impact of proposed management measures on the safety of life at sea be considered during the development of an FMP. The preferred alternative continues to rely on DAS reduction as a primary management tool, yet provides opportunities for vessels to use additional DAS. DAS provide flexibility to fishing vessel operators to fish when they deem it safe to do so. Given that the preferred alternative would implement differential DAS counting in all RMAs, it is not expected that behavioral shifts caused by differential DAS counting would negatively impact vessel safety by forcing vessels to fish farther offshore or in different areas to avoid differential DAS counting. However, additional reductions in DAS caused by the change in the ratio of A:B DAS and the differential DAS counting rate increase incentives to maximize returns from DAS used. Therefore, there is the potential that these additional DAS restrictions would increase incentives to fish harder with, possibly, less crew to increase vessel revenue from reduced DAS. However, these risks are at least partially offset by the continuation of two programs in this preferred alternative that would help increase the DAS available for use. In general, the DAS Leasing Program is expected to improve the safety of life at sea by providing an opportunity for vessels to obtain additional DAS. This should result in increased revenues that vessels could use to maintain their vessels and safety equipment. The Regular B DAS Program included in this action provides limited opportunity to target healthy stocks on GB (primarily haddock) that could provide further revenue to vessels and offset some of the incentives to fish harder under a Category A DAS. Finally, the preferred alternative includes a measure that would allow vessels to fish inside and outside of the Eastern U.S./Canada Area on the same trip. This allows vessels the flexibility to fish closer to shore or move to deeper water should weather conditions worsen. This flexibility was seen as an important safety measure in recent safety meetings convened by the Council.

Disruption in Daily Living

Amendment 13 defines the disruption in daily living social impact factor as "changes in the routine living and work activities of affected fishery participants, including the potential for alteration in their regular social and work patterns to adapt to new management measures" (NEFMC 2003). The preferred alternative would cause disruptions in daily living, most notably, from the differential DAS counting measure. Vessels would be charged more DAS than actually fished, resulting in less DAS available to fish for groundfish during the fishing year. This will likely result in less time spent fishing for groundfish and more time spent pursuing other interests, including other fisheries. Since most groundfish vessels do not use all of the DAS allocated on a yearly basis, the preferred alternative may provide incentives to maximize the use of their DAS

allocations so that they can capitalize on the yearly DAS allocations. This may result in increased time spent fishing and away from home. This suggestion is supported by the increased rate of DAS usage exhibited in the 2004 fishing year and the beginning of the 2005 fishing year. However, it is unclear how fishing behavior would change based on the differential DAS counting. It is speculated that vessels would respond by fishing harder and with less crew to earn sufficient revenue to pay necessary expenses. Vessels may also adapt to the proposed measures by fishing in different areas to maximize returns on effort. Differential DAS counting could increase opportunities for groundfish vessels to pursue other fisheries, including the currently lucrative open access General Category scallop fishery. Pursuing this fishery with high ex-vessel prices could be a positive shift in work activities caused by the preferred alternative. However, it is unclear just how such responses would alter existing behavior.

The preferred alternative does include several measures to increase flexibility in vessel operations. The ability to fish inside and outside of the Eastern U.S./Canada Area would provide flexibility necessary to avoid adverse weather conditions and increase opportunities to maximize revenue from a particular trip. In addition, the continuation of the DAS Leasing Program and a modified Regular B DAS Program in the preferred alternative provide further opportunities to increase DAS available for use to ensure that vessels could continue to fish for groundfish and that disruptions to daily living are minimized.

Changes in Occupational Opportunities and Community Infrastructure

The social impact factor "Changes in occupational opportunities and community infrastructure" is defined as the degree to which the occupational profile of the affected communities would be affected by the preferred alternative (NEFMC 2003). The preferred alternative could alter the composition of the existing groundfish fleet and the fleets of other fisheries by indirectly providing incentives for groundfish vessels to pursue other sources of fishing revenue. It is unclear whether the preferred alternative will result in significant loss of employment opportunities, as the retention of the DAS Leasing Program and a modified Regular B DAS Program provides additional opportunities to continue fishing and earn revenue from the groundfish fishery. Compared to the No Action alternative, the proposed measures should not significantly affect the ability of shoreside infrastructure to maintain year-round operations, as effort reductions in the groundfish fishery may be offset by increased effort in other fisheries such as hagfish or scallops.

Formation of Attitudes

Attitudes typically refer to positions expressing support for, or opposition to, a proposed management measure. Negative attitudes regarding the constantly changing regulations may be reinforced by the preferred alternative because it would implement additional effort reductions after substantial effort reductions were implemented by Amendment 13 in 2004. Some members of the fishing industry believe that the Amendment 13 measures should be given more time to work before it is determined that they are not meeting the objectives of the FMP and further restrictions are implemented.

This action would counter that belief, suggesting that the Amendment 13 management measures are not, in fact, achieving the objectives of the FMP.

At least some of these negative attitudes towards the preferred alternative may be mitigated somewhat by the knowledge that this action attempts to mirror the measures adopted by the Council in FW 42 as much as possible without compromising the objectives of this emergency action. In attempting to maintain consistency with what has been adopted by the Council in FW 42, this action attempts to promote stability in the fishery and minimize any impacts caused by unanticipated management measures and the short duration of management measures in this action that are inconsistent with those of FW 42. Further, the continuation of the DAS Leasing Program provides some indication that the agency is attempting to maintain programs that mitigate some of the negative social and economic impacts of effort reductions. Moreover, the continuation of a modified Regular B DAS Program should create positive attitudes towards this action, as it signals attempts by NMFS to provide opportunities for the industry to proactively and selectively target healthy groundfish stocks while minimizing regulatory discards of stocks of concern.

In summary, negative attitudes toward this preferred alternative are anticipated. However, other measures proposed by this action may help to mitigate some of the concerns expressed by industry regarding these types of measures. There is the potential that such negative attitudes may influence some industry members to circumvent the strict possession limits implemented by this action, especially in the Regular B DAS Program.

8.1.7 Impacts on Other Fisheries

Impacts to other fisheries resulting from the preferred alternative would be limited to the potential for the proposed measures to increase incentives for groundfish vessels to pursue other fisheries. This is most likely to occur in the scallop fishery, as many groundfish vessels also possess an open access General Category scallop permit. The impact of potential effort shifts from the groundfish fishery to the scallop fishery would be limited, however, by the implementation of measures currently proposed under Amendment 11 to the Atlantic Sea Scallop FMP. This action would change the general category scallop permit from an open access fishery to a limited access fishery and is expected to be implemented shortly after the start of the 2006 groundfish fishing year on May 1, 2006. It is likely that at least some groundfish vessels that currently possess a General Category scallop permit would not qualify for the limited access General Category scallop permit under Amendment 11, thereby minimizing the impact of the proposed measures on the scallop fishery.

8.2 No Action

8.2.1 Impacts on Groundfish

Under the No Action alternative, Category A DAS would be reduced by 8 percent on May 1, 2006; Category A DAS used in the SNE/MA RMA would be charged at a rate of 1.5:1; the DAS Leasing Program would expire; the Regular B DAS Pilot Program

would not be renewed; the GOM cod trip limit would remain at 800 lb/DAS up to 4,000 lb/trip; there would be no trip limit for GB yellowtail flounder; and the trip limits for CC/GOM and SNE/MA yellowtail flounder would remain consistent with those implemented under Amendment 13.

The impacts of the No Action alternative, including the default DAS reductions and the expiration of the DAS Leasing Program and the Regular B DAS Pilot Program, were assessed using the CAM. The results of this analysis have previously been described in Section 8.1.1.1 above. In summary, under the No Action alternative, F for all stocks is projected to decline, or stay constant, during the 2006 FY compared to the status-quo level, with the exception of pollock. Pollock F is projected to increase to 3.56, compared with the current 3.51. Under the preferred alternative, F for all stocks is projected to decline, in all cases by substantially more than the No Action alternative (Table 63).

Under the No Action alternative, projected median F's are not adequate to meet the rebuilding schedule under Amendment 13 for GOM cod, white hake, CC/GOM yellowtail flounder, and SNE/MA yellowtail flounder. Although, there was no formal rebuilding program specified under Amendment 13 for GB winter flounder, the most recent estimated F of 1.86 was almost double the F_{MSY} level of 1.0 (see http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0513/garm2005k.pdf). Therefore, the projected F of 1.73 under the preferred alternative will not reduce mortality to the suggested level of 1.0 found in the GARM report.

Species	Current F (FY 2005)	Target F (FY 2006)	No-Action	
			Projected F (FY 2006)	% Change
GB Winter Flounder	1.86		1.73	-6.9%
GOM Winter Flounder	0.13		0.12	-5.1%
SNE/MA Winter Flounder	0.347	0.32	0.28	-19.3%
GB Cod	0.155	0.22	0.15	-3.2%
GOM Cod	0.34	0.23	0.33	-2.9%
GB Haddock	0.181	0.26	0.18	-0.5%
GOM Haddock	0.18	0.23	0.18	-1.1%
American Plaice	0.136	0.17	0.13	-4.4%
Pollock	3.51		3.56	1.3%
Redfish	0.004	.01	0.004	0.0%
White Hake	1.18	1.03	1.15	-2.2%
Northern Windowpane Flounder	0.04		0.04	-6.9%
Southern Windowpane Flounder	0.44	0.98	0.27	-37.8%
Witch Flounder	0.134		0.13	-3.0%
CC/GOM Yellowtail Flounder	0.48	0.26	0.46	-4.2%
GB Yellowtail Flounder	0.201	0.25	0.19	-5.5%
SNE/MA Yellowtail Flounder	0.58	0.26	0.31	-46.5%

Table 63: Current F, projected F and change in F based on Closed Area Model results (median results).

The No Action alternative would allow groundfish vessels to begin fishing in the Eastern U.S./Canada Haddock SAP beginning May 1, while the preferred alternative would delay the start of this SAP until August 1. Regulated groundfish landings from

vessels fishing in this SAP amounted to 1,332,291 lb between May and July 2005. Since these estimates do not include estimates of bycatch, this landing amount is a conservative estimate of the amount of groundfish and non-groundfish species that would be caught from this SAP between May and July under the No Action alternative. In contrast, these landings would not be realized under the preferred alternative because the SAP would not open until August 1, 2006.

Amendment 13 provided no default measures affecting recreational fishing for groundfish by private boat or party/charter vessels. This means that there would be no anticipated impact on harvest of GOM cod by recreational anglers. The number of recreationally harvested cod has been declining (about 6 percent per year in the private boat mode and 3 percent per year in the party/charter mode) over the past three years (2002-2004). Should this trend continue, then some reduction in cod harvest may be anticipated even in the absence of additional management action. However, the rate of decline in GOM recreational harvest of cod would not be sufficient to meet the overall conservation target for cod. As a result, overfishing on specific groundfish stocks by the recreational fishing sector could continue under the No Action alternative, causing the fishery to fail to meet the goals and objectives of the FMP.

8.2.2 Impacts on Other Species/Bycatch

The impacts to non-groundfish species and bycatch from the No Action alternative have been previously analyzed in earlier groundfish actions (see the cumulative impacts analysis presented in Section 6.5.4 the EA prepared for FW 41 in NEFMC 2005b). This section provides additional detail of the anticipated impacts of the No Action alternative, focusing on the impacts of the expiration of the Regular B DAS Pilot Program and the delayed start date of the Eastern U.S./Canada Haddock SAP. It is not expected that the other provisions included in the No Action alternative would substantially affect the impacts on other species/bycatch. In particular, the expiration of the DAS Leasing Program would not likely affect the impact to non-groundfish species, as it is assumed that vessels using leased DAS operate in a similar manner as they would under an allocated DAS.

The No Action alternative would not renew the Regular B DAS Pilot Program. This program was implemented in November 2004 and continued through October 2005. Catch from this program was estimated using dealer reports (adjusted to provide live weight). At the time of this analysis, only catch data through the end of July 2005 was available in tabular form. Using these estimates of catch from the Regular B DAS Pilot Program provides an estimate of the likely reductions in catch of non-groundfish species from the No Action alternative, as such landings would not be observed under this alternative. Overall, vessels operating under the Regular B DAS Pilot Program caught over 1,500,000 lb of monkfish and over 460,000 lb of skates (all species) between November 2004 and July 2005 (see Table 64). Atlantic sea scallops also comprised a large portion of non-groundfish species caught, followed by American lobster and summer flounder. During the period most likely affected by the Secretarial action (May through July), vessels operating in the Regular B DAS Pilot Program caught 704,687 lb of monkfish, followed distantly by American lobster at 85,344 lb. The amount of non-groundfish species caught during this period is likely to closely resemble the anticipated

impacts of this measure under the No Action alternative, as FW 42 is anticipated to become effective in August 2006. As a result, the catch of non-groundfish species between May and July listed in Table 64 would not be caught under the No Action alternative, resulting in benefits to these non-groundfish species, most notably monkfish and skates.

Species	Landings (lb, live weight)	
	May 2005 – July 2005	November 2004 – July 2005
Summer Flounder	10,839	92,473
Monkfish	704,687	1,581,908
American Lobster	85,344	125,678
Atlantic Sea Scallops	33,940	231,153
Skate (all species)	24,178	461,542

Table 64: Non-groundfish landings (lb, live weight) from the Regular B DAS Pilot Program.

As highlighted in Table 32 above, landings of non-groundfish species (predominantly monkfish and skates) from the Eastern U.S./Canada Haddock SAP amounted to 186,343 lbs between May and July 2005. This amount does not include bycatch amounts of non-groundfish species. As a result, the anticipated total catch from this SAP between May and July is expected to be greater than 186,000 lb. Since the No Action alternative would allow groundfish vessels to fish in this SAP as of May 1, 2006, these landings would likely be realized under the No Action alternative. However, these non-groundfish landings would not be observed under the preferred alternative, as the SAP would not open until August 1, 2006.

8.2.3 Habitat Impacts

Habitat impacts from the No Action alternative are expected to be similar to the cumulative habitat impacts specified in the latest management action, FW 41 to the groundfish FMP (NEFMC 2005b). This analysis concluded that the habitat impacts of recent management measures, specifically, management measures implemented by Amendment 13 and all subsequent actions, were expected to be minimal. Amendment 13 adopted a suite of measures that minimized, to the extent practicable, the adverse effects of fishing on EFH. These measures included areas closed to all bottom-tending mobile gear and benefits that accrue from the effort reductions and other provisions of the amendment. While actions subsequent to Amendment 13 (FW 40A, FW 40B, and FW 41) all increased, or at least modified, access to closed areas through the implementation of SAPs, any increases in fishing effort were expected to be minor relative to the effort reductions in Amendment 13 and would be restricted by hard TACs for target species and incidental catch hard TACs for bycatch species and other associated measures.

The No Action alternative would result in the expiration of the DAS Leasing Program (on April 30, 2006) and the Regular B DAS Pilot Program (this program expired on October 31, 2005), revise the Category A/B DAS ratio from 60/40 to 55/45, charge all Category A DAS used in the SNE/MA RMA at a rate of 1.5:1, and allow the Eastern U.S./Canada Haddock SAP to begin on May 1, 2006. The revision of the Category A/B DAS ratio would reduce the number of Category A DAS, DAS that could be used

through all RMAs, but increase Category B DAS that could only be used in specific programs. In doing so, the No Action alternative would reduce habitat impacts by decreasing effort that could be used throughout all RMAs and increasing effort that could only be used under the restrictions and limitations of approved SAPs. Because the preferred alternative would not change this provision, the benefits of this provision in reducing habitat impacts would also be realized by the preferred alternative.

The DAS Leasing Program and the Regular B DAS Pilot Program provided additional opportunities for vessels to obtain additional Category A DAS, and an additional opportunity to use Regular B DAS outside of SAPs, respectively. In allowing the DAS Leasing Program and the Regular B DAS Pilot Program to expire, the No Action alternative provides some protection to habitat by reducing the overall number of DAS that may be used during a fishing year. The No Action alternative would also charge DAS at a higher rate in the SNE/MA RMA than the preferred alternative, although it would not charge differential DAS in the GB or GOM RMA. As a result, differential DAS counting under the preferred alternative would provide greater habitat benefits in the form of reduced available Category A DAS in the GOM and GB RMAs than the No Action alternative, but fewer benefits in the SNE/MA RMA.However, the No Action alternative would allow the Eastern U.S./Canada Area Haddock SAP to begin on May 1, 2006. This would increase fishing effort, and therefore impacts to habitat, in Closed Area II compared to the preferred alternative by allowing vessels to access the northern tip of Closed Area II (see Figure 8) beginning May 1, 2006. Therefore, the No Action alternative would offer less protection to habitat within Closed Area II than the preferred alternative, which would delay the opening of this SAP until August 1, 2006. A comparison of the habitat impacts between the preferred alternative and the No Action alternative is shown in Table 33 above.

8.2.4 Impacts on Threatened, Endangered, and Other Protected Resources

Impacts on threatened, endangered, and other protected resources from the No Action alternative are expected to be identical to the impacts of the existing management measures. The impacts of the existing NE multispecies fishery on endangered and threatened whales, sea turtles, and fish have been discussed in the existing Biological Opinion on the NE Multispecies FMP dated June, 2001 and in subsequent Section 7 informal consultations conducted by NMFS in accordance with the Endangered Species Act.

The latest management action under the groundfish FMP, FW 41 (NEFMC 2005b), concluded that the management measures implemented after Amendment 13 (FW 40A, FW 40B, and FW 41) would have only a negligible impact because they do not appreciably affect effort beyond Amendment 13 levels in times and places where protected species occur and would not adversely affect the protected species conclusions discussed in the Amendment 13 FSEIS (NEFMC 2003). The Amendment 13 analysis concluded that the effort reductions and gear restrictions implemented by Amendment 13, coupled with existing area closures and Take Reduction Plan measures are expected to significantly reduce effort in the groundfish fishery and have positive impacts on reducing risks to protected species by reducing the risks to protected species inhabiting the NE multispecies management unit. Despite that risk reduction, however, the FSEIS

cautions that encounters between gear and protected species are still likely to occur, where gear and species overlap, particularly in marine mammal high use areas.

The No Action alternative would result in the expiration of the DAS Leasing Program and the Regular B DAS Program. In allowing these programs to expire, the No Action alternative provides additional protection to protected resources by reducing the overall number of DAS that may be used during a fishing year.

8.2.5 Economic Impacts

The methods used to assess the economic impacts of the No Action alternative are identical to those used to assess the economic impacts of the preferred alternative (see Section 8.1.5 above).

Even though the simulation results from the CAM provide some means for assessing the range of potential biological and economic impacts, aggregated outputs across realizations tended to fall within a narrow range. Note that this is also the case for each vessel even though the range of impacts may differ considerably across vessels. For this reason, the economic impacts reported herein will focus on median results as a measure of central tendency or those impacts that may be "most likely" to occur.

The No Action alternative would reduce the category A DAS by 8 percent and would implement differential DAS counting in the SNE/MA yellowtail flounder stock area at a rate of 1.5:1. This action would affect any vessel with a limited access permit with a DAS baseline greater than zero. Total groundfish revenues landed by these vessels were approximately $78 million in FY2004 and combined revenue from all trips where groundfish were landed was $109 million. The No Action alternative would result in an estimated reduction of 6 percent in total groundfish revenue resulting in an estimate of $73 million in the landed value of groundfish for FY2006. The estimated proportional impact on total revenue on trips where groundfish were landed was slightly higher at 7 percent resulting in an estimate of $101 million in fishing revenue to limited access DAS vessels in FY2006. Compared to the landed value of all species landed in the NE region the reduction in combined groundfish trip value represents about 0.7 percent of the total.

<u>Port-Level Impacts</u>

Across ports, the estimated reduction in groundfish trip revenue was highest in ports that are likely to be most affected by the differential DAS in the SNE/MA yellowtail founder stock area. Estimated impacts in these ports (ports in Rhode Island, Connecticut, Eastern Long Island, New York, and New Jersey) ranged from a 9 to 15 percent reduction in groundfish trip revenues (Table 65). However, groundfish revenue in these ports represents only a small fraction (about 1 percent) of the total value of seafood product sales. By contrast, even though the proportional reduction in groundfish trip income was lower (5 or 6 percent), the total impact on the ports of Boston, Gloucester, Portsmouth, and Portland were much greater; ranging between 3 and 4 percent.

Port/Port Group	Combined Value all Species	Combined Value of Regulated Mesh Groundfish Species by Multispecies DAS Vessels	Combined Value of All Species by Multispecies DAS Vessels on Trips Landing Groundfish	Change in Groundfish Revenue	Change in Groundfish Trip Revenue	Predicted Port Total Revenue	Total Change
Portland	32,922,325	13,373,375	18,951,932	-6%	-6%	31,785,209	-3.5%
Upper Mid-Coast ME	35,430,283	474,404	834,006	-5%	-5%	35,388,583	-0.1%
Other Maine	123,288,128	1,018,817	1,479,842	-5%	-6%	123,199,337	-0.1%
Portsmouth	4,015,765	1,556,509	2,915,572	-5%	-5%	3,869,986	-3.6%
Other NH Coast	30,867,883	2,271,908	2,739,270	-5%	-5%	30,730,920	-0.4%
Gloucester	39,087,050	15,968,279	20,160,713	-6%	-6%	37,877,407	-3.1%
North Shore MA	27,452,944	581,252	671,009	-6%	-6%	27,412,683	-0.1%
Boston	9,694,669	4,525,827	7,182,119	-6%	-6%	9,263,742	-4.4%
South Shore MA	9,558,477	1,463,831	1,719,296	-6%	-6%	9,455,319	-1.1%
Chatham	13,098,521	3,857,442	4,769,272	-4%	-4%	12,907,750	-1.5%
Provincetown	3,858,319	803,765	905,981	-6%	-6%	3,803,960	-1.4%
Other Cape & Islands	7955614	237698	288842	-6%	-6%	7,938,283	-0.2%
New Bedford	228,142,781	28,841,029	37,895,367	-6%	-6%	225,869,059	-1.0%
Rhode Island	65,154,921	2,268,352	4,246,935	-8%	-10%	64,730,228	-0.7%
Connecticut	18,055,971	83,712	223,480	-8%	-9%	18,035,858	-0.1%
Eastern Long Island	14,652,437	324,092	1,266,405	-11%	-12%	14,500,468	-1.0%
Other New York	8,743,703	87,849	612,519	-11%	-15%	8,651,825	-1.1%
New Jersey	113,467,589	570,445	1,631,838	-9%	-10%	113,304,405	-0.1%
Other	131,469,463	141	78,789	-6%	-7%	131,463,948	0.0%
Totals	916,916,843	78,308,727	108,573,187			910,188,971	-0.7%

Table 65: No Action alternative impact on total revenues by port/port groups.

Impacts on Vessels

With the addition of costs to the CAM, it is possible to estimate the economic impacts on net returns above operating costs where net returns represent trip income that is available to share among captains, crew, and vessel owners. The CAM's results were expanded in a manner similar to that described previously such that the resulting estimate of net return is equivalent to a change in total net return not just to groundfish. The CAM produces results for 250 realizations for each vessel. As noted previously, the range of results for each vessel is quite narrow but the No Action alternative has varying impact across vessels. Thus, the median realization for each vessel was retained for purposes of reporting.

Home Port State

At the median, the No Action alternative would result in a 3-4 percent reduction in net return from all source of fishing income across all home port states with the exception of Connecticut and vessels in Delaware, Maryland, Virginia, and North Carolina. The distribution of impacts was nearly identical for Maine, New Hampshire, and Massachusetts; ranging from a high of 5 or 6 percent to no impact at all. Note that a

zero impact would be associated with vessels whose DAS allocation exceeded estimated use by at least 8 percent as well as vessels that have allocated DAS but may not have fished in the baseline scenario. In the former case, sufficient latent DAS would be available to permit fishing at the same level as that in the baseline. By contrast, vessels from home ports that would most likely be affected by the differential DAS counting in the SNE/MA yellowtail flounder stock area were estimated to have net returns reduced by as much as 17 percent. These states include Rhode Island, Connecticut, and to a lesser extent New York and New Jersey.

Home Port State	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Maine	-6%	-5%	-4%	0%	0%
New Hampshire	-5%	-4%	-3%	0%	0%
Massachusetts	-6%	-5%	-3%	0%	0%
Rhode Island	-13%	-8%	-3%	-2%	0%
Connecticut	-17%	-16%	-11%	-2%	0%
New Jersey	-11%	-7%	-4%	-1%	0%
New York	-13%	-8%	-3%	-1%	0%
Other[1]	-6%	-3%	-1%	0%	0%
1 Includes vessels with a Delaware, Maryland, Virginia, and North Carolina home port state.					

Table 66 No Action alternative impacts on total net returns to vessel owner and crew by home port state.

Port Group

Across different ports or port groups the median impact as well as impacts at the 10th and 25th percentile was nearly identical for the home port of Boston and other ports to the North (Table 67). Among these, proportionally more (at least 90 percent) of vessels from home ports in the Upper Mid-Coast Maine port group were estimated to experience some level of adverse impact on net return (2 percent or greater). At least 75 percent of vessels with a Portland home port would be adversely affected as would vessels from New Bedford. Overall, the median impact was greatest for Connecticut vessels (a reduction of 11 percent), but 10 percent of vessels from New York home ports other than Eastern Long Island were estimated to incur a loss of net return of at least 23 percent. As noted previously, vessels from home ports in the SNE/MA yellowtail flounder stock area would be disproportionately affected by differential DAS counting in the No Action alternative.

Home Port	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Portland	-6%	-6%	-4%	-3%	0%
Upper Mid-Coast ME	-6%	-6%	-5%	-2%	-2%
Other Maine	-6%	-4%	-3%	0%	0%
Portsmouth	-5%	-4%	-3%	0%	0%
Other NH Coast	-5%	-4%	-3%	-1%	0%
Gloucester	-6%	-5%	-4%	0%	0%
North Shore MA	-6%	-4%	-3%	0%	0%
Boston	-6%	-6%	-4%	0%	0%
South Shore MA	-5%	-4%	-1%	0%	0%
Chatham	-4%	-3%	-1%	0%	0%
Provincetown	-4%	-4%	-3%	0%	0%
Other Cape & Islands	-6%	-4%	-2%	0%	0%
New Bedford	-6%	-6%	-4%	-2%	0%
Rhode Island	-13%	-8%	-3%	-2%	0%
Connecticut	-17%	-16%	-11%	-2%	0%
Eastern Long Island	-11%	-6%	-2%	0%	0%
Other New York	-23%	-9%	-6%	-2%	0%
New Jersey	-11%	-7%	-4%	-1%	0%
Other	-6%	-3%	-1%	0%	0%

Table 67: No Action alternative impacts on total net returns to vessel owner and crew by home port/port group.

Vessel Length

The impact on net returns did not differ substantially among vessels that were 50 to 70 feet LOA and vessels greater than 70 feet (Table 68). Impacts on net returns to vessels in these size classes ranged from a 2 percent reduction at the 75th percentile to 8 percent at the 10th. The estimated reduction in net return for vessels less than 50 feet LOA were lower at both the median and 25th percentile but were identical to that of larger vessels at the 10th percentile. The results do not indicate that the No Action alternative would have substantially different impacts across vessels based on vessel length alone.

Vessel Length	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Less than 50 Feet	-6%	-4%	-2%	0%	0%
50 to 70 Feet	-8%	-6%	-4%	-2%	0%
Greater than 70 Feet	-6%	-6%	-4%	-2%	0%

Table 68: No Action alternative impacts on total net returns to vessel owner and crew by vessel length class.

Gear

Net return for proportionally more trawl vessels would be adversely affected by the No Action alternative than any other gear (Table 69). That is, at least 75 percent of trawl vessels would be adversely affected (2 percent at the 75th percentile) while less than half of all hook vessels would be adversely affected, and the median impact on gillnet vessels (2 percent) would be about half that of trawl vessels (4 percent). The impact on both, gillnet and hook vessels would be similar at the 10th percentile (5 or 4 percent) while the adverse impact on trawl vessel net return would be 8 percent. This result is

likely due to the fact that trawl gear is the predominate gear used to fish for yellowtail flounder in the SNE/MA stock area.

Gear	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Gillnet	-5%	-4%	-2%	0%	0%
Hook	-4%	-2%	0%	0%	0%
Trawl	-8%	-6%	-4%	-2%	0%

Table 69: No Action alternative impacts on total net returns to vessel owner and crew by primary groundfish gear.

Gear – Length Class

The estimated adverse impact on total net return from all sources of fishing income was identical at all percentiles for both small and medium-sized gillnet vessels (Table 70). That is, the median impact was estimated to be 2 percent while at the 10th percentile the estimated reduction in net return was 5 percent. Among trawl vessels of differing sizes, proportionately more vessels 50 to 70 feet LOA would be adversely affected than either small or large trawl vessels. At least 90 percent of medium-size trawl vessels would be adversely affected (at least 1 percent). Proportionally more trawl vessels in excess of 70 feet would be adversely affected than small vessels although the impact at the 10th percentile would be lower (6 percent) as compared to small trawl vessels (9 percent).

Gear/Length Class	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Gillnet Less than 50 Feet	-5%	-4%	-2%	0%	0%
Gillnet 50 to 70 Feet	-5%	-4%	-2%	0%	0%
Hook Less than 50 Feet	-4%	-2%	0%	0%	0%
Trawl Less than 50 Feet	-9%	-6%	-4%	0%	0%
Trawl 50 to 70 Feet	-9%	-6%	-4%	-3%	-1%
Trawl Greater than 70 Feet	-6%	-6%	-4%	-2%	0%

Table 70. No Action alternative impacts on total net returns to vessel owner and crew by primary groundfish gear and vessel length.

Dependence on Groundfish

Based on sales data for each vessel during FY2004 dependence on groundfish as a proportion of total revenue was divided into quartiles. Estimated adverse impacts on vessels in the upper two quartiles (50-80 percent and "More than 80 percent") were nearly identical at all percentiles (Table 71). The median impact was estimated to be a 4 to 5 percent reduction in net return, while the impact at the 10th percentile was the same for both upper quartiles (6 percent). Further, the estimated adverse impact was greater for the upper two dependence quartiles at the 25th percentile and above. However, at the 10th percentile the estimated adverse impact on vessels in the lower two quartiles (20-54 percent and Less than 20 percent) was greater than that of vessels with higher groundfish dependence. Since each quartile represents the same number of vessels (190) this means that there were 19 vessels that depend on groundfish for less than 20 percent of total net return would be expected to have net return reduced by 8 percent or more. Similarly,

vessels that rely on groundfish for between 20 and 54 percent of total net return would be expected to lose at least 12 percent of total net fishing income.

Dependence on Groundfish (Quartiles)	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Less than 20%	-8%	-4%	-1%	0%	0%
20% to 54%	-12%	-4%	-2%	-1%	0%
More than 50% up to 80%	-6%	-5%	-4%	-3%	0%
More than 80%	-6%	-6%	-5%	-2%	0%

Table 71: No Action alternative impacts on total net returns to vessel owner and crew by quartiles of dependence on groundfish (FY2004).

Total Sales

Just as groundfish dependence was divided into quartiles for reporting purposes, gross sales by limited access DAS vessels were also divided into quartiles based on combined sales from all species landed during FY2004. Estimated adverse impact on total net returns for vessels with highest gross sales (more than $320,000) ranged from a loss of 2 percent at the 75th percentile to as much as 6 percent at the 10th percentile (Table 72). The impact on vessels in the second and third quartiles was quite similar to that of the highest quartile differing by no more than one percentage point at any given percentile. The impact on vessels with the lowest gross sales was lower than vessels with higher gross sales at the 25th percentile and above. However, the adverse impact on net returns was higher (8 percent) for 10 percent of the vessels with lowest gross sales as compared to the impact at the 10th percentile on vessels in the top three sales quartiles.

Gross Sales (Quartiles)	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Less than $67K	-8%	-4%	-1%	0%	0%
$67K to $165K	-6%	-5%	-3%	-1%	0%
$165K to $320K	-7%	-6%	-4%	-2%	0%
More than $320K	-6%	-6%	-4%	-2%	0%

Table 72: No Action alternative impacts on net returns to vessel owner and crew by gross sales quartiles for FY2004.

8.2.6 Social Impacts

The No Action alternative would leave present regulations in effect, including those implemented by Amendment 13, FW 40A, FW 40B, and FW 41. The Amendment 13 default measures (i.e., a reduction in the ratio of Category A to Category B DAS from 60:40 to 55:45 and differential DAS counting in the SNE/MA RMA) would be continued under the No Action alternative. This discussion briefly summarizes the predicted impacts described in these actions. The management measures outlined in Amendment 13 are predicted to result in significant and far reaching social impacts. These impacts will result in changes in daily routines, safety, occupational opportunities, and community infrastructure. However, subsequent management actions endeavored to mitigate these social and economic impacts by increasing opportunities for vessels to use Category B DAS to target healthy groundfish stocks and improve the effectiveness of such programs. As a result, despite the disruptions to daily routines, reductions in

occupational opportunities, potential negative impacts to community infrastructure caused by effort reductions in Amendment 13, subsequent actions resulted in benefits to vessel safety, daily routine, occupational opportunities, and regulatory discards.

Some of the beneficial social impacts resulting from Amendment 13 and subsequent actions would be eliminated in the No Action alternative. The DAS Leasing Program would expire on April 30, 2006, while the Regular B DAS Program, which expired on October 31, 2005, would not continue. The expiration of these programs would eliminate opportunities for vessels to lease additional DAS necessary to offset effort reductions from Amendment 13. This would result in further restrictions on vessel activity due to reduced access to DAS necessary to cover operational costs and fewer opportunities to target healthy groundfish stocks for additional revenue. Although this would result in additional time at home and with family, this would disrupt daily activities and reduce occupational opportunities. Without access to additional DAS from the DAS Leasing Program, vessels would not be employing the services of shoreside infrastructure, potentially negatively impacting these entities. Further, without additional revenue generated from targeting healthy groundfish stocks using a Regular B DAS or a leased Category A DAS, vessels would have less revenue available to maintain their vessels, thereby increasing safety concerns. The No Action alternative would have positive impacts on the formation of attitudes, however, as no further effort reductions beyond those implemented by Amendment 13 would be implemented at this time. However, this would only delay efforts necessary to rebuild groundfish stocks, potentially leading to increasingly negative attitudes to be formed once future effort reductions are implemented.

8.2.7 Impacts on Other Fisheries

The No Action alternative would have only minor impacts on other fisheries. With the absence of programs to mitigate the economic impacts of the default DAS reductions due to the expiration of the DAS Leasing Program and the Regular B DAS Pilot Program, there is the possibility that groundfish vessels would be more likely to seek additional sources of fishing revenue by pursuing other fisheries under the No Action alternative than under the preferred alternative. The most likely fishery to be affected by this potential shift in effort is the Atlantic sea scallop fishery, as many groundfish vessels have also been issued General Category scallop permits. However, the impact of effort shifts to this fishery caused by the No Action alternative is expected to be minimal due to the restrictions being implemented by AMENDMENT 11 to the Atlantic Sea Scallop FMP which would change the General Category scallop permit from an open access permit to a limited access permit sometime shortly after the start of the 2006 groundfish fishing year on May 1, 2006.

8.3 Cumulative Effects of the Preferred alternative

8.3.1 Introduction to Cumulative Impacts

A cumulative effects analysis is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The concept behind cumulative effects analysis is

to capture the total effects of many actions over time that would be missed by evaluating each action individually. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective but rather, the intent is to focus on those effects that are truly meaningful. This section analyzes the potential direct and indirect effects of the revised preferred alternative (summarized in the addendum to this EA) together with past, present, and reasonably foreseeable future actions as well as factors external to the NE multispecies fishery that affect the physical, biological, and socioeconomic resource components of the groundfish environment. Although predictions of synergistic effects from multiple sources are inherently less certain than predicted effects of individual actions, cumulative effects analyses are intended to alert decision makers to potential "hidden" consequences of the preferred alternatives.

The information presented in Section 7.0 (Affected Environment) describes the fishing history, natural history and current status of the resources and human communities. This helps characterize the environmental baseline against which to evaluate cumulative effects and serves as a starting point for the cumulative effects analysis. The baseline does not represent a static 'snapshot' of the resource. Instead, it represents the trend of the resource, incorporating the past influences on the resource. The cumulative past effects of groundfish fishery activity, combined with impacts from other fisheries, human-induced impacts, and climatic events influencing the resource, all contribute to the state of the baseline condition.

Valued Ecosystem Components

The cumulative effects analysis focuses on valued ecosystem components (VECs). For actions prior to Amendment 13, the VECs used were Resource, Habitat, and Community Benefits. For Amendment 13 and later actions, the following VECs are used:

1. Regulated groundfish stocks (target and non-target);
2. Non-groundfish species (incidental catch and bycatch);
3. Endangered and other protected species;
4. Habitat, including non-fishing effects; and
5. Human communities, including the economics of the fishery and fishing communities

The range of VECs chosen (target species, non-target species, protected species, habitat and human communities) was limited to those for which a reasonable likelihood of meaningful impacts is expected. This is based on the environmental components that have historically been impacted by fishing, and statutory requirements to complete assessments of these factors under the Magnuson-Stevens Act, Endangered Species Act, Marine Mammal Protection Act, Regulatory Flexibility Act, and several Executive Orders. The VECs are intentionally broad (for example, there is one devoted to protected species, rather than just marine mammals, and one on habitat, rather than EFH) to allow for flexibility in assessing all potential environmental factors that are likely to be impacted by the action.

While subsistence fishing would ordinarily fall under the human communities VEC, no subsistence fishing or Indian treaty fishing occur in the area managed under this FMP. Further, vessels participating in the groundfish fishery must comply with all federal air quality (engine emissions) and marine pollution regulations. Therefore, the management measures contained in this action would not likely result in any additional impact to air or marine water quality and thus, are not considered as a VEC in this analysis.

Temporal and Geographic Scope

While the effects of historical fisheries are considered, the temporal scope of past and present actions for regulated groundfish stocks, non-groundfish species, habitat and human communities are primarily focused on actions that have taken place since implementation of the initial NE Multispecies FMP in 1977. An assessment using this timeframe demonstrates the changes to resources and human communities that have resulted through management under the Council process and through U.S. prosecution of the fisheries, rather than foreign fleets. For endangered and other protected species, the context is largely focused on the 1980s and 1990s, when NMFS began generating stock assessments for marine mammals and turtles that inhabit waters of the U.S. EEZ. In terms of future actions, the analysis examines the period between implementation of this framework (expected in summer 2006) and the planned benchmark assessment of the groundfish stocks scheduled for 2008. Unlike other planned assessments that will focus primarily on the status of groundfish stocks, the benchmark assessment could modify the methods used to conduct assessments and result in changes to the management of groundfish that are not possible to predict with any degree of certainty.

The geographic scope of the analysis of impacts to regulated groundfish stocks, non-groundfish species and habitat for this action is the total range of these VECs in the Western Atlantic Ocean, as described in the Affected Environment and Environmental Consequences sections of the document (Sections 7.0 and 8.0, respectively). For endangered and protected species, the geographic range is the total range of each species (Section 7.3). The geographic range for human communities is defined as those primary and secondary port groups bordering the range of the groundfish fishery (Section 7.4) from the U.S.-Canada border to, and including North Carolina.

8.3.2 Past, Present and Reasonably Foreseeable Future Actions

8.3.2.1 Target and Non-Target Species

Multispecies FMP Past and Present Actions

Although management measures for groundfish were first enacted for the EEZ in 1977 under the original Groundfish FMP, the dramatic increase in larger vessels, bigger gear and electronic aids such as fishfinders and navigation equipment contributed to a greater efficiency and intensity of fishing, which in turn resulted in a precipitous drop in landings during the 1980s to an all-time low in the early 1990s. The following discussion is limited to those past management actions thought to have had the greatest impact on the New England groundfish fishery, habitat, protected resources and human communities for the purposes of this cumulative impacts assessment: Amendments 5, 7

and 13 to the FMP; the 1994 Emergency Action; Framework Adjustments 9, 40A, 40B and 41 to the FMP; and the Interim Actions of 2002.

To end overfishing and address the severe decline in the groundfish resources and the influx of more and larger vessels, the Council developed Amendment 5 to the FMP. This action, which became effective in 1994, implemented a moratorium on permits, as well as an effort-control program that proposed to reduce a vessel's DAS by 50 percent over a 5-7 year period. Amendment 5, thus, was the first action to restrict both access and effort in the multispecies fishery.

Despite implementation of Amendment 5, stocks continued to decline rapidly. In response, the Council requested that NMFS implement an emergency action to close, on a year-round basis, three large areas to all vessels capable of catching groundfish (Closed Area I, Closed Area II, and the Nantucket Lightship Closed Area). NMFS implemented the emergency action to close these three areas in December of 1994. These closure areas are thought to have had a major beneficial effect on groundfish stocks, as they afforded protection over large areas and for extended amounts of time. Indirect benefits to other species accrued from these closures as well, such as the protection of sea scallops. Although there were large benefits attributed to these closures, it is important to note that they may have had a negative effect on other groundfish stocks as vessels moved elsewhere to fish. Framework 9, implemented in 1995, extended the emergency action permanently and also implemented measures to reduce the discard of groundfish by vessels fishing directing on non-groundfish species.

Amendment 7, implemented in 1996, accelerated the Amendment 5 DAS effort-reduction schedule and further reduced the bycatch of regulated multispecies. Similar to Amendment 5, the FSEIS for Amendment 7 specified that this action was expected to have a significant impact on a substantial number of small entities in the short-term, with higher, long-term benefits accruing to the industry and to the Nation. However, the combination of Amendments 5 and 7 to the FMP and Framework 9 reduced fishing effort significantly and provided large areas of year-round protection, especially on Georges Bank, for several species of groundfish. In response, the status of several groundfish stocks has improved over the past several years and landings increased as a result.

Following Amendment 7, several framework adjustments were implemented, adding further restrictions to the groundfish fishery. While the combination of measures implemented since the adoption of Amendment 5 improved stock status (increasing biomass and reducing F) for many stocks, the improvement has not been achieved for all stocks.

In response to a Federal Court decision in the case of *Conservation Law Foundation, et al. V. Evans, et al*., NMFS, in May and August 2002, implemented management measures consistent with a Settlement Agreement through an interim final rule. Measures contained in the interim rule included a considerable reduction of DAS; increased gear restrictions for certain gear types, including gillnets, hook-gear, and trawl nets; modifications and additions to the closure areas; limits on yellowtail flounder catch; and more restrictive recreational fishing measures. It was projected that continuation of the Settlement Agreement for the duration of the 2003 fishing year would result in a 25-35 percent reduction in fishing effort, further protect several groundfish species, most notably GOM cod, and increase the likelihood of timely stock rebuilding.

Amendment 13, implemented on May 1, 2004, superseded the Settlement Agreement and adopted major changes to groundfish management. At the time of publication, the analysis contained in the Amendment 13 FEIS predicted the following impacts (described in detail in the amendment document): (1) For regulated stocks, an end to overfishing for all groundfish stocks, to rebuild overfished stocks by 2014 for most stocks (2018 for CC/GOM yellowtail flounder, 2026 for GB cod, and 2047 for redfish), reduce discards due to the adoption of an increased mesh size and create opportunities for groundfish vessels to target healthy stocks (SAPS); (2) for other stocks, reduce the bycatch of skates, dogfish and monkfish as a result of effort reductions; (3) no specific measures to protect endangered and other protected species were adopted however, effort reductions for regulated and other stocks would have negligible or possibly beneficial impacts; (4) specific measures to protect habitat included the adoption of areas closed to mobile gear, further benefits could also result from effort reductions on regulated and other stocks; and (5) short-term reductions in revenue would have negative impacts on fishing communities, but over the period of the rebuilding program revenues would increase, however, there was considerable uncertainty over whether current fishery participants would benefit from rebuilding.

Multispecies FW 40A, implemented November 19, 2004, created three opportunities for groundfish vessels to target healthy stocks. These included a pilot project SAP to target haddock in the Eastern U.S/Canada area, a SAP for GB Cod Hook Sector vessels to target haddock in CAI, and a Category B (regular) DAS pilot program that allows vessels to target healthy stocks in all areas while using Category B DAS (DAS that cannot be used outside these programs). All three programs were designed so that they would not threaten the mortality targets adopted by Amendment 13. This was accomplished by establishing incidental catch TACs for stocks of concern and requiring that the various programs end when these TACs are caught.

Multispecies FW 40B, effective in June 1, 2005, implemented management measures to improve the effectiveness of the effort control program implemented under Amendment 13, created additional opportunities to target healthy stocks and increased information available to assess groundfish bycatch in the herring fishery. The measures implemented under FW 40B were not expected to increase effort on groundfish species of concern nor threaten the mortality targets adopted by Amendment 13.

Multispecies FW 41, effective September 14, 2005, revised the Closed Area I Hook Gear Haddock SAP rules to allow for participation by non-Sector vessels. The intent of this program is to help mitigate the economic and social impacts caused by the fishing effort reductions that resulted from the implementation of Amendment 13. The measures implemented under FW 41 encourage effort on haddock, a healthy stock that can sustain increased catches, and are not expected to threaten the mortality targets adopted by Amendment 13.

Summary of Impacts

The cumulative impacts of past and present management actions have resulted in substantial effort reductions in the multispecies fishery. Although this has benefited some stocks (GB haddock), rebuilding has been slow for others (GB and GOM cod, CC/GOM, GB and SNE/MA yellowtail flounder, GB and SNE/MA winter flounder and white hake). It is anticipated that new effort reductions implemented under Amendment

13 and this action will end overfishing for all stocks, while also creating new opportunities for groundfish vessels to target healthy stocks.

Other FMPs Past and Present Actions

Other recent management actions that affect groundfish include the adoption of Scallop Amendment 10 and Scallop Framework Adjustment 16/Multispecies Framework Adjustment 39. Scallop Amendment 10, implemented on June 23, 2004, established a rotational management system for the scallop fishery that opens and closes areas that were permanently closed (CA I, CA II and NLSCA) to groundfish and scallop fishing. Although this system permits scallop vessels to fish in areas that were closed to protect groundfish spawning, vessels are not allowed into the areas during peak spawning periods. Further, the portions of the areas that have been opened primarily consist of sandy substrate, which recovers quickly from disturbances. Therefore, impacts to groundfish stocks or EFH are expected to be minimal and temporary in nature, respectively.

Framework 16/39, implemented November 2, 2004, defined the requirements for extending scallop fishery area management into the groundfish mortality closed areas. Scallop dredges have historically caught groundfish. Therefore, FW 16/39 placed caps on the amount of yellowtail flounder that can be caught inside groundfish mortality closed areas (ten percent of the GB yellowtail and SNE/MA yellowtail flounder target TACs), and the retention of cod was restricted to 100 lbs. (45.4 kg.) of cod per trip for personal use. These measures further mitigated impacts to groundfish as a result of he scallop rotational management system.

Scallop Framework 17 was also recently implemented. The primary intent of the framework was to provide more complete monitoring of the general category scallop fleet and it was not anticipated that the action would impact the multispecies fishery.

Reasonably Foreseeable Future Actions

<u>FW 42 to the NE Multispecies FMP</u>

FW 42 was intended to be implemented by the start of the 2006 fishing year (May 1, 2006). However, due to delays in completing the relevant analyses, FW 42 is now expected to be implemented around August 1, 2006, and will supersede the management efforts implemented by this emergency action. The primary purpose of FW 42 is to prevent overfishing on groundfish stocks by reducing F on several groundfish stocks that are not achieving target F levels for 2006. In doing so, FW 42 will ensure that the fishery maintains the rebuilding program established under Amendment 13. These mortality reductions would be in addition to the Amendment 13 default measures (revision of the DAS category A:B ratio from 60:40 to 55:45 and differential DAS counting in the SNE/MA RMA at a rate of 1.5:1) which would become effective on May 1, 2006, absent modifications to the differential DAS counting and other measures proposed by this action. FW 42 would bring the FMP into full compliance with MSA, as modified by the SFA. The measures contained in FW 42 include differential DAS counting, reduced trip limits, gear requirements, recreational fishing measures, a modified Regular B DAS Program, VMS requirements, standardized reporting requirements, modifications to the DAS Transfer Program, and a new GB Cod Fixed Gear Sector.

Annual TAC Adjustment for the U.S./Canada Management Area under the NE Multispecies FMP.

This action would establish TACs for Georges Bank cod, haddock and yellowtail flounder for the 2006 fishing year (May 1, 2006, through April 30, 2007) in accordance with the U.S./Canada Resource Sharing Understanding. The proposed 2006 TACs for haddock and yellowtail flounder are lower than the TACs adopted for the 2005 fishing year (haddock reduced by 1 percent and yellowtail flounder reduced by 51 percent). However, the proposed 2006 TAC for cod would increase by 44 percent. Although the increase in the cod TAC would provide vessels fishing in the Eastern U.S./Canada Area additional fishing opportunities, should the yellowtail flounder TAC be attained first, it would likely curtail harvest of the full cod quota.

This action would also specify target TACs for all groundfish stocks and incidental catch TACs for stocks of concern. The purpose of these measures is to provide a means of evaluating the effectiveness of the management measures and to limit the impact of special programs (e.g., SAPs) on stocks of concern, respectively. Overall, it is expected that this action will help ensure that the Amendment 13 mortality objectives are not threatened.

Framework 18 to the Atlantic Sea Scallop FMP

Framework Adjustment 18 to the Atlantic Sea Scallop FMP (FW 18) is in review by NMFS and proposes management measures for the scallop fishery for the 2006 and 2007 fishing years to address the following primary management issues: Scallop fishery specifications for 2006 and 2007 (open days-at-sea (DAS) and Scallop Access Area trip allocations); scallop Area Rotation Program adjustments; and revisions to management measures that would improve administration of the Scallop FMP. In addition, FW 18 is intended to help reduce the potential for interactions between the scallop fishery and sea turtles, and to reduce finfish and scallop bycatch mortality, through a seasonal closure in the proposed Elephant Trunk Access Area.

Amendment 11 to the Atlantic Sea Scallop FMP

The NEFMC has initiated development of Amendment 11 to the Scallop FMP. Amendment 11 would establish a limited access program for the current open access general category scallop permits and may modify the current scallop fishing year. The limited access program for general category scallop vessels is intended to prevent continued rapid expansion of the general category fleet and to control landings in that fishery. The active general category fleet appears to be expanding and landings in from the fleet are continually increasing. The change to the fishing year would enable the NEFMC to use more updated scallop survey information for adjusting management measures through the biennial framework process. Currently, the scallop survey information, available in August or September, cannot be incorporated into analyses for framework actions.

Experimental Fishing Permits (EFPs)

Under the MSA, NMFS is authorized to require permits for experimental fishing activities. There are several ongoing programs that coordinate and fund experiments that test fishing gear or fishing operations. Many of these experiments are designed to identify ways to target healthy groundfish stocks and could lead to the future development of SAPs or other Category B DAS programs that are authorized by Amendment 13. As a result, the experiments often catch regulated groundfish and request an exemption from existing regulations. NMFS reviews these requests and grants approved experiments an EFP. However, to constrain mortality, NMFS often requires some of these experiments to use Category A DAS so that mortality falls within the range of impacts analyzed by Amendment 13 and subsequent framework actions. Although the Groundfish PDT has noted that the expected 2004 catches of GB cod and CC/GOM yellowtail flounder were high enough to cause concern, when approving EFPs, NMFS works to ensure that the experiments do not threaten Amendment 13 mortality objectives.

Amendment 1 to the Herring FMP

The Council is developing the first amendment to the Atlantic Herring FMP. One of the measures considered for this amendment would establish a bycatch TAC for haddock caught by herring fishing vessels. The bycatch TAC would be comprised of 0.2 percent of the GOM and GB haddock TAC combined. The amendment would also permit herring vessels to possess no more than 100 pounds of all other species of groundfish combined. Finally, Amendment 1 would prohibit mid-water trawl gear from the GOM (Area 1A) from June 1 through September 30. This amendment would likely have only minimal positive impacts to the groundfish resource and is not likely to be implemented until the 2007 fishing year.

8.3.2.2 Protected Species

The following summarizes the past and present cumulative impacts to protected species, including a portion of the discussion that was included in the Amendment 13 Final Environmental Impact Statement.

Large Whales and Mammals

Large whales may be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries. Ship strikes and fishing gear entanglement continue to be the most likely sources of injury or mortality for the right, humpback, fin and minke whales. Gear entanglement occurs in the vertical buoy lines of sink gillnet and pot/trap gear, the groundlines of pot/trap gear, and also in the net panels of gillnet gear. Sei, blue and sperm whales are also vulnerable, but fewer ship strikes or entanglements have been recorded. Mobile bottom trawls are less of a concern for the large whale species. Other marine mammals, such as harbor porpoise, dolphins and seals, are also vulnerable to entanglement in net gear (including seines, gillnets and drift nets).

Low frequency sonar may pose an additional threat, although the extent of its continued use by the U.S. military is unclear at this writing. A successful lawsuit brought

by environmental groups limited the use of such sonar following a number of marine mammal deaths in the vicinity of naval exercises in several places around the world. A recent modification to the MMPA could override the lawsuit settlement agreement since it provides for a national security exemption in some circumstances and focuses on the "likelihood" of significant disruptions to behavior critical to survival rather than the "potential."

The potential impact of pollution is more likely problematic in nearshore areas closer to the source, such as agricultural and urban runoff and sewer outfalls. Nutrients can also promote toxic phytoplankton blooms, which have been known or suspected in killing whales and other marine mammals.

Sea Turtles

Turtles have been entangled in shrimp trawls, pound nets, bottom trawls and sink gillnets. Shrimp trawls are required to use turtle excluder devices. The diversity of the sea turtle life history also leaves them susceptible to many other human impacts, including impacts on land, in the benthic environment, and in the pelagic environment. Anthropogenic factors that negatively impact the success of nesting and hatching include: beach erosion, beach armoring and nourishment; artificial lighting; beach cleaning; increased human presence; recreational beach equipment; beach driving; coastal construction and fishing piers; exotic dune and beach vegetation; and poaching. An increased human presence at some nesting beaches or close to nesting beaches has led to secondary threats such as the introduction of exotic fire ants, and an increased presence of native species (e.g., raccoons, armadillos, and opossums) which raid and feed on turtle eggs. Entanglements in debris or ingestion of marine debris are also seen as possible threats.

Summary of Impacts

While reductions in fishing effort as a result of past fishery management actions is thought to have had a slightly positive impact on protected species, gear entanglement continues to be a likely source of injury or mortality. Therefore, the factors discussed above in conjunction with fishing effort have potentially had cumulative adverse effects on most protected species to varying degrees. Because of a lack of cause-effect data, little is known about the magnitude and scope of these factors and how they have contributed to the species' special listing. The direct and indirect effects of the alternatives in this emergency action are assessed in Section 8.0 and do not appreciably increase impacts discussed and analyzed previously.

Reasonably Foreseeable Future Actions

Potential future actions whose effects would be cumulative to the revised preferred alternative include actions taken to protect marine mammals, and endangered or threatened species. Current measures in effect are discussed in Section 8.0. These could be modified in the future under either a fishery management plan, marine mammal take reduction plan, or regulation promulgated under authority of the Endangered Species Act.

Specifically, known or anticipated future actions include: (1) short-term closures to sink gillnets under the Atlantic Large Whale Take Reduction Plan (ALWTRP) Dynamic Area Management (DAM) system; (2) changes to the Harbor Porpoise Take

Reduction Plan; (3) the Strategy for Sea Turtle Conservation in Atlantic Ocean and Gulf of Mexico Fisheries to address sea turtle fisheries interactions in state and federal fisheries operating in the Atlantic and Gulf of Mexico through a consistent gear based approach; (4) measures adopted under the NMFS final rule implementing large-mesh gillnet closures off the North Carolina/Virginia coast to protect sea turtles; (5) the proposed use of modified scallop dredge gear to reduce interactions with sea turtles; and (6) upcoming discussions by the Atlantic Trawl Take Reduction team to address dolphin bycatch issues in the groundfish fishery. Since the specific elements of those potential changes is not known at this time, their effects cannot be determined.

In addition, regulations to the ALWTRP are proposed to be implemented to address the number of observed Atlantic large whale entanglements. A Notice of Availability for the DEIS for the ALWTRP published in the Federal Register on February 25, 2005, and the proposed rule published on June 21, 2005. The purpose of the preferred alternative is to further reduce the risk of entanglement to Atlantic large whales in fishing gear. The preferred alternative includes broad-based gear modifications in lieu of seasonal and/or area management requirements. The preferred alternative would also apply to trap/pot and gillnet fisheries. As a result, vessels using gillnet gear in the multispecies fishery could be required to make modifications to their gear.

8.3.2.3 Habitat

Past and Present Actions

The effects of mobile bottom-tending gear (trawls and dredges) on fish habitat have been recently reviewed by the National Research Council (NRC 2002). This study determined that repeated use of trawls/dredges reduce the bottom habitat complexity by the loss of erect and sessile epifauna, smoothing sedimentary bedforms and bottom roughness. This activity, when repeated over a long term also results in discernable changes in benthic communities, which involve a shift from larger bodied long-lived benthic organisms for smaller shorter-lived ones. This shift also can result in loss of benthic productivity and thus biomass available for fish predators. Thus, such changes in bottom structure and loss of productivity can reduce the value of the bottom habitat for demersal fish, such as haddock and cod. These effects varied with sediment type with lower level of impact to sandy communities, where there is a high natural dynamic nature to these bedforms, to a high degree of impact to hardbottom areas such as bedrock, cobble and coarse gravel, where the substrate and attached epifauna are more stable. In the Northwest Atlantic, the more valued groundfish habitat is located in areas where there is a high percentage of gravel and cobble (NREFHSC 2002), such as GB.

Use of trawls and dredges are common in inshore and offshore areas and somewhat less common in riverine areas. Section 9.3.1.2 of Amendment 13 indicates that mobile bottom-tending gears are commonly used in most inshore and offshore habitats. In the NE, otter trawls are used to prosecute most MSA managed fisheries including NE Multispecies. Smaller trawls are used in inshore areas and lower estuaries, which are managed by states and not subject to the MSA. In addition, in some states smaller dredges are used for harvesting oysters, bay scallops, sea urchins, quahogs, and mussels. Hydraulic dredging for softshell clams and bottom trawling for shrimp is also accomplished in certain nearshore and riverine habitats.

It is assumed for this analysis that the effects of bottom tending mobile gear are generally moderate to high, depending upon the type of bottom and the frequency of fishing activities, to haddock, cod and other demersal species affected by this action.

Summary of Impacts

While reductions in fishing effort as a result of past fishery management actions is thought to have had a positive impact on habitat and EFH, the repeated use of trawls/dredges reduces bottom habitat complexity, ultimately decreasing the value of habitat for demersal fish. Therefore, it is possible that past fishing activity in combination with other non-fishing impacts (discussed below), has had a cumulative adverse effect on habitat.

Reasonably Foreseeable Future Actions

Amendment 9 to the Squid, Mackerel Butterfish Fishery and Amendment 1 to the Tilefish FMP

Although these amendments are currently under development, both will likely propose measures to reduce impacts on EFH. Although the precise nature of these measures cannot be determined at this time, it is possible that the Mid-Atlantic Fishery Management Council could recommend measures that protect habitat for various species, including groundfish.

EFH Omnibus Amendment

An EFH Omnibus Amendment is currently under development for all of the Council's FMPs. The purpose of the amendment is to review and revise EFH components of the FMPs and to develop a comprehensive EFH management plan that will successfully minimize adverse effects of fishing on EFH through actions that will apply to all Council-managed FMPs. The Council is considering several measures for inclusion in the Omnibus Amendment, including a review and update of the following: (1) description and identification of EFH; (2) non-fishing activities that may adversely impact EFH; (3) identification and consideration of new Habitat Areas of Particular Concern; and (4) integration of alternatives to minimize any adverse effects of fishing on EFH. While it is possible that the Council would recommend measures that could impact multispecies EFH, because the amendment is under development, it is not possible to predict impacts to the multispecies fishery with any certainty.

Summary of Non-Fishing Effects

Although non-fishing effects is considered in the context of the habitat VEC, the impact of non-fishing effects is far reaching and has implications on the resources considered in this action and the human community.

Past and Present Actions

A comprehensive evaluation of non-fishing impacts to the multispecies fishery was conducted in Amendment 13. For fish habitat, non-fishing effects were reviewed in the Essential Fish Habitat Amendment for Groundfish prepared by the NEFMC (Amendment 11 to the Groundfish FMP, NEFMC 1998). Table 73 below summarized the potential effects of numerous chemical, biological, and physical effects to riverine,

inshore, and offshore fish habitats. In general, the closer to the coast, the greater the potential for adverse impact to fishery resources and EFH. For the offshore area, with the exception of events such as oil spills and algae blooms, which can spread over large areas, moderate effects were generally localized to a well-defined and relatively small impact area such as oil/gas mining and dredged material disposal. Thus, only small portions of fish stocks would potentially use these sparsely located areas and would be adversely affected. For example, dredged material disposal sites, usually about 1 nm^2 in size, are managed by the U.S. Army Corps of Engineers and the U.S. EPA to minimize physical effect to the defined disposal area and allow no chemical effects at the site based on stringent sediment testing.

For groundfish stocks, there are several non-fishing threats that could have a direct and/or indirect impact. Several of the items identified as non-fishing threats to fish habitat, identified in Table 73, could also pose a threat to groundfish stocks, such as the oil spills, pesticides, and radioactive wastes. Similar to the discussion above on non-fishing impacts to fish habitat, generally the closer the proximity of groundfish stocks to the coast, the greater the potential for impact (although predation, a non-fishing impact, would be one threat that would occur everywhere). Many groundfish species reside in both inshore and offshore areas at different stages of their lives and during different seasons throughout the year. However, some stocks, such as SNE/MA winter flounder, live out a large portion of their lives closer to shore and may likely be impacted by inshore threats to a greater degree than some of the other groundfish species. In the offshore areas, such effects would likely be low because the localized nature of the effects would minimize exposure to organisms in the immediate area.

An additional inshore threat of note would be the effect on fishery resources presented by power plants. The operations of power plants are thought to be especially of consequence to fish eggs, larvae and juveniles. Entrainment, or intake of cooling seawater for the purposes of cooling power plant reactors, is known to draw in eggs and larvae and, therefore, could have a negative impact on groundfish resources that spawn in areas in close proximity to active power plants. An additional threat associated with power is the discharge of warm water. This thermal discharge is believed to have a negative impact on reproduction capability and recruitment of affected fishery resources.

THREATS	RIVERINE	INSHORE	OFFSHORE
Chemical			
oil	M	M	M
heavy metals	M	M	M
nutrients	H	H	L
pesticides	M	M	L
herbicides / fungicide	M	M	L
acid	H	M	
chlorine	M	M	
thermal	M	M	
metabolic & food wastes	M	M	
suspended particles	M	M	L
radioactive wastes	L	M	M
greenhouse gases	M	M	M
Biological			
nonindigenous / reared species	M	M	M
nuisance / toxic algae	M	H	M
pathogens	M	M	M

Physical				
	channel dredge	M	H	
	dredge and fill	H	H	
	marina / dock construction	M	H	
	vessel activity	M	H	L
	erosion control			
	bulkheads	M	M	
	seawalls		M	
	jetties		M	
	groins		M	
	tidal restriction	M	H	
	dam construction / operation	H	M	
	water diversion			
	water withdrawal	H	M	
	irrigation	M	M	
	deforestation	H	M	
	mining			
	gravel/mineral mining	M	M	M
	oil/gas mining	L	M	M
	peat mining	L		
	debris	M	M	M
	dredged material disposal	L	M	M
	artificial reefs	L	M	M

Table 73: Potential non-fishing threats to fish habitat in the New England region prioritized within regions (H = high; M = moderate; L = low)[2].

[1] From NEFMC (1998)
[2] Prioritization developed by compilation of *EFH Technical Team* survey

Reasonably Foreseeable Future Actions

Liquid natural gas (LNG) terminals

LNG facilities are currently proposed or planned for construction in Pleasant Point, ME (onshore); two projects offshore of Boston, MA, one in Boston Harbor, MA (onshore) and one in Fall River, MA (onshore); Providence, RI (onshore); Long Island Sound, NY (onshore); Logan Township, NJ (onshore); Philadelphia, PA (onshore); and an expansion of an existing facility in Cove Point, MD.

Depending on the specific location and type of LNG facility, a range of impacts to fisheries and/or fisheries habitat may result from both construction and operation of terminals. Due to the large size of LNG tankers, dredging may need to occur in order to access onshore terminals. Dredging can result in direct loss of fish and/or shellfish habitat and can elevate levels of suspended sediment within the water column. As with other dredging, suspended sediments can impact various life stages of fish and shellfish. Further, the construction of pipelines and fill associated with site construction can have adverse impacts on intertidal habitats and salt marshes in the area.

Offshore wind energy generation projects

Although only two offshore wind energy projects have formally been proposed in the northeast region, at least 20 other separate projects may be proposed in the near future. Cape Wind Associates (CWA) proposes to construct a wind farm on Horseshoe Shoal, located between Cape Cod and Nantucket in Nantucket Sound, Massachusetts. A

second project is proposed by the Long Island Power Authority (LIPA) off Long Island, New York. The CWA project would have 130 wind turbines located as close as 4.1 miles offshore of Cape Cod in an area of approximately 24 square miles with the turbines being placed at a minimum of 1/3 mile apart. The turbines will be interconnected by cables, which will relay the energy to shore to the power grid.

The Army Corps of Engineers developed a DEIS for the proposed CWA project on Horseshoe Shoal. Subsequently, the Minerals Management Service was named the lead Federal agency and a new DEIS is under development. If constructed, the turbines would preempt other bottom uses in an area similar to oil and natural gas leases. The potential impacts associated with the CWA offshore wind energy project include the construction, operation and removal of turbine platforms and transmission cables; thermal and vibration impacts; and changes to species assemblages within the area from the introduction of vertical structures.

8.3.2.4 Human Communities

Past and Present Actions

Past management actions have had negative effects on communities. Management actions taken prior to Amendment 5 failed to reverse increases in F and declines in groundfish stock size. As a result, landings and revenues began a slow decline until the mid-1990's. These economic losses translated into reductions in the number of fishing vessels and fishermen, caused consternation in fishing communities, and led to a regulatory response that exacerbated many of these problems. For both Amendment 5 and Amendment 7, impacts to fishing communities were predicted to be significant, with substantial short-term loses in revenue. Some communities lost access to the resource entirely as vessels left the fishery and stock size contracted. However, as a result of Amendments 5 and 7 stock sizes began to increase, resulting in greater landings and revenues.

Because Amendments 5 and 7 failed to reduce F to within legal requirements of the SFA (adopted after the implementation of Amendment 5), additional measures were needed. The Settlement Agreement and Amendment 13 imposed further restrictions on the industry. In the short term, Amendment 13 measures are expected to reverse recent increases in landings and revenues that have benefited communities. The measures will also limit the opportunities for many fishermen to participate in the groundfish fishery through DAS reductions – over 300 permit holders do not have any Category A DAS needed to fish for any stock of groundfish. Over the longer term, however, the pace of stock rebuilding is expected to increase under Amendment 13 and landings and revenues will increase as well. These increases will benefit fishing communities. Further, SAPs implemented through Amendment 13 and FW 40A have created opportunities for groundfish vessels to target healthy stocks. While these SAPs are limited in scope, the programs should help mitigate some of the negative impacts on communities that resulted from Amendment 13.

Summary of Impacts

Past management actions have had a cumulative adverse impact on communities that depend on the groundfish resource. Although special programs implemented through

Amendment 13 and subsequent framework actions have provided the industry opportunities to target healthy groundfish stocks, substantial increases in landings and revenue will likely not take place until further stock rebuilding occurs under the Amendment 13 rebuilding plan.

Reasonably Foreseeable Future Actions

Several of the future management actions discussed under the previous VECs would likely impact human communities. For example, both the Emergency Action to Implement Measures to Reduce Overfishing in the Northeast Multispecies Complex and the Annual TAC Adjustment for the U.S./Canada Area would constrain fishing effort and likely limit economic benefits to communities. Further, future actions to protect endangered or threatened species and habitat could also require the industry to make gear modifications or displace fishing effort. Although it is not possible to predict the exact nature of these impacts, actions taken to protect these resources could result in a loss of revenue to human communities.

In addition to management actions, non-fishing effects may also impact human communities. As previously discussed above, there are several LNG projects in various stages of the approval process. Depending on the location of the project, a range of impacts can occur, including impacts to communities. Due to the potentially hazardous nature of the facilities (LNG is transported via tanker to specialized terminals), security zones are generally established around LNG facilities. This can restrict access to areas traditionally utilized for fishing and shellfishing, essentially closing some areas to fishing and thus reducing fishing opportunities.

8.3.3 Cumulative Impacts of the Preferred alternative

The following analysis summarizes the cumulative effects of past, present, and reasonably foreseeable future actions in combination with the revised preferred alternative on the VECs identified in Section 8.3.1.

8.3.3.1 Cumulative Effects on Groundfish Species

The revised preferred alternative would have positive cumulative effect on regulated groundfish stocks. In general, previous groundfish actions have attempted to rebuild multispecies stocks through a range of management measures. While not every one of these actions have been successful at fully rebuilding groundfish stocks as required by MSA and the SFA, they have been able to slowly rebuild groundfish stock biomass. Amendment 13 implemented substantial measures designed to ensure rebuilding of groundfish stocks according to the guidelines in the MSA as well as the means to mitigate the economic and social impacts of effort reductions of the Amendment in an effort to achieve OY from the groundfish assemblage and provide for the continued participation of communities in the fishing industry. FW 40A expanded on the Amendment 13 efforts to achieve OY by allowing vessels to target healthy groundfish stocks without compromising rebuilding efforts of other stocks by adopting additional SAPs and the Regular B DAS Pilot Program.

The revised preferred alternative would immediately reduce F for several groundfish stocks in an effort to continue the rebuilding program established under Amendment 13. By maintaining the Amendment 13 default DAS reduction, charging DAS at a rate of 1.4:1 for all vessels fishing outside of the U.S./Canada Management Area; reducing trip limits for GOM cod, all stocks of yellowtail flounder, GB winter flounder, and white hake; delaying the start date for the Eastern U.S./Canada Haddock SAP; and implementing restrictions on recreational harvest of GOM cod, the revised preferred alternative would reduce fishing pressure on groundfish stocks not meeting F targets established under Amendment 13. In conjunction with the measures expected to be implemented under FW 42, the preferred alternative should ensure that groundfish stocks continue to rebuild, as required by the MSA and SFA.

Another known threat to groundfish stocks could result from non-fishing impacts. However, in offshore areas such as GB, with the exception of unplanned events such as an oil spill or algae bloom, the potential for adverse impacts to fishery resources is low and tend to be localized over a small area.

Because this action would continue to support the goals of the FMP and is not expected to threaten the mortality objectives established by Amendment 13, groundfish stock status should continue to improve. Further, future fisheries actions described in Section 8.3.2 are not expected to hinder the rebuilding process, and several would be in support of the Amendment 13 objectives (FW 42 and the Annual TAC Adjustment for the U.S./Canada Management Area). To afford additional assurance, provisions were included in Amendment 13 that provide for periodic review of the groundfish resource. The next assessment, scheduled for 2008, will review the rebuilding progress and if necessary, provide the information necessary to make sure rebuilding programs remain on track. Therefore, the revised preferred alternative, when combined with other past, present and reasonably foreseeable actions described in this assessment, would not result in significant cumulative impacts to groundfish stocks.

8.3.3.2 Cumulative Effects on Other Species/Bycatch

This action would have only a minimal cumulative effect on non-groundfish species. The overall reduction in groundfish fishing effort begun by Amendment 5, accelerated in Amendment 7, and further controlled by Amendment 13, benefits other stocks by reducing fishing effort and thus, limiting the interaction between vessels fishing for groundfish and other stocks. While the revised preferred alternative could result in a small increase in mortality for some non-groundfish species, particularly monkfish, Atlantic sea scallops, and skate species, total effort in the groundfish fishery will remain well below the levels observed in FY 2000 and FY 2001 and will, through the revised preferred alternative and FW 42, continue to be reduced below baseline effort levels established by Amendment 13. Further, to the extent that other bycatch species mix in the water column with groundfish stocks of concern, limiting the incidental catch of groundfish through the use of TACs in the Regular B DAS Program and the approved SAPs may also help reduce bycatch of other species. This would both limit bycatch and encourage the pursuit of selective fishing practices to maximize landings of the target species.

Future fisheries actions described in section 8.3.2 are not expected to appreciably increase the bycatch of non-groundfish species. Further effort reductions anticipated in FW 42 would only decrease the available effort in the groundfish fishery, providing additional assurances that bycatch of non-groundfish species would not increase under future groundfish actions. The expected increase in the 2006 TAC for GB cod in the U.S./Canada Management Area could increase effort and bycatch of non-groundfish species; however, historically the quota for GB cod has not been obtained. Impacts resulting from other future actions, such as Amendment 1 to the Herring FMP, are in the preliminary stages of development and it is unclear what, if any, impact these actions could have on the bycatch of nongroundfish species. Because past and future groundfish actions have limited the interaction between vessels fishing for groundfish and non-groundfish stocks and future actions are expected to result in only minimal increases to bycatch, the revised preferred alternative, when combined with other past, present and reasonably foreseeable actions described in this assessment, would not result in significant cumulative impacts.

8.3.3.3 Cumulative Effects on Habitat

The cumulative effect of this action on habitat is expected to be minimal, but likely positive. Amendment 13 adopted a suite of measures that minimized, to the extent practicable, the adverse effects of fishing on EFH. These measures included areas restricted to all bottom-tending mobile gear and benefits that accrue from the effort reductions and other provisions of the amendment. The revised preferred alternative would actually reduce fishing effort throughout the NE multispecies fishery, particularly throughout the GOM and SNE/MA RMA, portions of the GB RMA, and in the Eastern U.S./Canada Haddock SAP, especially in the northern portion of Closed Area II, during the months of May through July, providing some benefit to habitat protection. However, the revised preferred alternative would not reduce effort within the U.S./Canada Management Area, as the differential DAS counting measure has been removed for vessels fishing in this area. Therefore, habitat impacts within the U.S./Canada Management Area would either remain constant or slightly increase under the revised preferred alternative to this action, although overall effort in the fishery is expected to decrease under this emergency action, resulting in positive impacts to habitat. Further, proposed reduced trip limits for several species may reduce incentives to target these species, potentially reducing impact to sensitive inshore habitat, particularly for GOM cod and CC/GOM yellowtail flounder.

Only two future actions are anticipated to potentially affect habitat, namely, FW 42 to the NE Multispecies FMP and Amendment 11 to the Atlantic Sea Scallop FMP. However, both FMPs are expected to include measures that would reduce effort, and therefore habitat impacts, in their respective fisheries through effort reductions in FW 42 and by limiting participation in the General Category scallop fishery. Although the Omnibus EFH Amendment could recommend additional measures to minimize the adverse effects of fishing on EFH, because the amendment is in the early stage of development, it is not possible to predict the impact of that action. The only other known threats to habitat or EFH could result from non-fishing impacts. In general, impacts from non-fishing activities are localized, such as in the disposal of dredged material or the

possible construction of LNG facilities and wind farms and, in the case of pollution, typically have a greater potential for impacts closer to the coast. Thus, negative non-fishing impacts are less likely to be additive in offshore areas.

Because the revised preferred alternative, along with other past, present and reasonably foreseeable actions described in this assessment, would result in continued effort reductions, the combined effects of these actions would not result in significant cumulative impacts to habitat or EFH.

8.3.3.4 Cumulative Effects on Threatened, Endangered, and Other Protected Resources

It is not anticipated that the proposed measures contained this emergency action would adversely impact threatened, endangered or protected species beyond those analyzed and discussed in Amendment 13. Amendment 13 anticipated that groundfish measures implemented in that action would have negligible and possibly even beneficial impacts on protected species. For instance, DAS reductions and additional gear restrictions are expected to significantly reduce effort in the groundfish fishery and consequently have positive impacts on reducing risks to protected species. Under Amendment 13, overall effort reductions are occurring as the result of reduced effort and other fishing restrictions on groundfish stocks, possibly reducing risks to protected species on the positive end of the spectrum. The revised preferred alternative would result in a slightly lower risk of interactions with protected species, as the proposed measures would reduce overall fishing effort throughout the NE region beyond that provided by Amendment 13.

While anthropogenic activities will continue to adversely impact marine mammals and sea turtles, as summarized in Section 8.3.2.2, elements of the preferred alternative, specifically the continued reduction of available Category A DAS in the NE multispecies fishery and the relatively minor increase in potential fishing effort from the use of B DAS, would not result in additive adverse impacts to protected species, beyond what is already occurring. Further, although it is not possible to characterize the extent of impacts (e.g., minor, substantial, etc.), it is anticipated that future actions such as modifications to the ALWTRP and measures to protect sea turtles would have positive impacts on large whales and turtles. For these reasons, the revised preferred alternative, when combined with other past, present and reasonably foreseeable actions described in this assessment, would not result in significant cumulative impacts to endangered or other protected species.

8.3.3.5 Cumulative Effects on Human Communities

Previous multispecies management actions have had a negative effect on communities. Starting with Amendment 5 and continuing through the implementation of Amendment 13, communities, particularly in Maine, Massachusetts, Rhode Island and New Jersey, have suffered substantial economic loses as a result of effort reductions. The revised preferred alternative would provide additional economic and social impacts based on continued effort reductions. However, the revised preferred alternative would also help mitigate some of these negative economic and social impacts by maintaining

opportunities for groundfish vessels to target healthy groundfish stocks through a modified Regular B DAS Program and obtain additional DAS necessary to continue participating in the fishery through the DAS Leasing Program. The revised preferred alternative attempts to minimize the effects on communities by eliminating the differential DAS counting measure for vessels participating in the U.S./Canada Management Area and substituting trip limits for GB winter flounder and white hake instead. This allows vessels to continue to fish on healthy groundfish stocks within this area, maintaining access to the healthy groundfish stocks, including the large haddock TAC available, without resulting in increased DAS charges. Overall, fishing revenues under the revised preferred alternative would decrease (see the addendum prepared for this action along with the economic impacts of individual measures contained in Section 8.1.5). However, effort reductions proposed by this action are necessary to rebuild several groundfish stocks, as required by the MSA and SFA. It is expected that as groundfish stocks rebuild, catch rates of groundfish species will increase, resulting in a proportional increase in fishing revenues. Therefore, immediately reducing F under this action would help the overfished groundfish stocks rebuild more rapidly, allowing groundfish vessels to realize increased revenues as stocks rebuild (see Section 5.4 of Amendment 13, NEFMC 2003).

The revised preferred alternative would have slightly positive social impacts by minimizing disruptions to daily behavior by attempting to maintain existing regulations consistent with the objectives of this action, minimizing industry confusion caused by quickly changing regulations by attempting to propose measures in this action similar to those being proposed in FW 42, and by minimizing bycatch (see the addendum to this EA as well as Section 8.1.6). In addition, by increasing the flexibility of vessels to fish inside and outside of the Eastern U.S./Canada Area on the same trip, vessels have greater opportunity to maximize returns from trips to the Eastern U.S./Canada Area as well as a mechanism to fish in a safe manner closer to shore without compromising economic returns from a due to the early termination of a trip into the Eastern U.S./Canada Area caused by worsening weather conditions.

Future actions in the groundfish fishery could have a slightly positive impact on communities. The 2006 TAC Adjustment for the U.S./Canada Management Area would increase the GB cod; however, the TACs for GB haddock and GB yellowtail flounder would be reduced. Reduction in the GB haddock TAC is not anticipated to cause any impact to communities, as this TAC has never been harvested previously. As a result, increased effort and revenues from the GB cod and GB haddock resources could help offset loses from the reduced GB yellowtail flounder TAC. Proposed LNG and offshore wind facilities could restrict access to areas used for fishing. Although this impact would likely be minor, due to the preliminary nature of the proposed projects, specific impacts are not yet known.

The short-term adverse impacts predicted to result from the revised preferred alternative are not expected to be significant when compared to the negative impacts of Amendment 13, or the benefits that will accrue in the future as a result of early stock rebuilding. Therefore, the revised preferred alternative, when combined with other past, present and reasonably foreseeable actions described in this assessment, would not result in significant cumulative impacts to human communities.

9.0 Applicable Law

9.1 Magnuson-Stevens Fishery Conservation and Management Act

9.1.1 Consistency with National Standards

Section 301 of the MSA requires that the regulations implementing any fishery management plan be consistent with the ten national standards. Below is a list of the national standards and descriptions of how the preferred alternative complies with each standard.

- **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.**

The proposed measures in this emergency action immediately reduce F to help prevent overfishing on several groundfish stocks managed by the FMP, beginning May 1, 2006. This action offers immediate and substantial protection to these regulated groundfish stocks that need the greatest reductions in F in 2006 to maintain the rebuilding program adopted in Amendment 13, while continuing specific programs that facilitate the targeting of some healthy groundfish stocks without compromising stocks of concern. This action continues a modified Regular B DAS Program to allow vessels to target healthy groundfish stocks in the U.S./Canada Management Area, increasing the possibility of achieving OY from these stocks. Further, eliminating the differential DAS counting measure for vessels participating in the U.S./Canada Management Area and replacing this measure with the proposed FW 42 trip limits for GB winter flounder and white hake more directly targets management measures to reduce mortality on overfished stocks without unnecessarily reducing the catch of healthy groudfish stocks to help achieve OY in the fishery. The trip limit for GB yellowtail flounder slows the harvest rate for this species in the U.S./Canada Management Areas, enabling the Eastern U.S./Canada Management Area to remain open longer and increasing the likelihood of achieving OY from the 2006 U.S./Canada Area hard TACs for GB cod, GB haddock, and GB yellowtail flounder. Emergency measures addressing overfishing may be implemented even if they are not sufficient, in and of themselves, to stop overfishing. This action is an important first step to bring the FMP into full compliance with all provisions of the MSA, as amended by the SFA, and other applicable law, as discussed in Sections 3.0 and 4.0 of this EA, until the Council and NMFS can implement more permanent management measures in FW 42. Combined with measures currently being proposed by the Council in FW 42, the preferred alternative would achieve, on a continuing basis, the OY from each fishery.

- **Conservation and management measures shall be based on the best scientific information available.**

The proposed measures are based upon the most recent stock assessments for the stocks affected by this action (GARM II and the GB Yellowtail TRAC Status Report for

2005). The results of GARM II were peer-reviewed and include updated landings and resource survey data that describe the current status of each stock through the end of the 2004 fishing year with respect to the status determination criteria. In addition, information from the TRAC, a committee consisting of scientific staff from NMFS and Canada's Department of Fisheries and Oceans, was used to jointly assess the status of shared U.S./Canada stocks (GB cod, GB haddock, and GB yellowtail flounder). Therefore, this action incorporates the best scientific information available to achieve critical F reductions.

- **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.**

This FMP is based on measures, such as effort controls, gear restrictions, and area closures, that apply across the range of species in the NE multispecies complex. In cases where additional measures are needed to achieve FMP objectives for individual stocks, such as GOM cod, those measures are applied to that specific stock throughout its range. Although the emergency measures are intended to primarily focus reductions in F on GOM cod, CC/GOM yellowtail flounder, and SNE/MA yellowtail flounder, the proposed measures will reduce F on other stocks, as well. In most areas where the fishery operates, several stocks of groundfish exist together, along with other non-groundfish species, such as skates, spiny dogfish, and monkfish. Differential DAS counting to reduce F for GOM cod, CC/GOM yellowtail flounder, and SNE/MA yellowtail flounder also reduce fishing effort on other stocks, including haddock, and winter flounder. This approach is consistent with the FMP and with the MSA, given the interrelated nature of the NE multispecies complex.

- **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 a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.**

The proposed measures do not discriminate between residents of different states. Differential DAS counting throughout the GOM and SNE/MA RMAs applies equally to all vessels, regardless of homeport or location. Removing the differential DAS counting measure from vessels fishing in the U.S./Canada Management Area does not discriminate between residents of different states, as all limited access NE multispecies DAS may fish in this area. While the measures do not discriminate between permit holders, they may have different impacts on different participants due to differences in the distribution of fish, the different F reductions necessary to maintain the rebuilding program established under Amendment 13, and the fact that the proposed measures may affect fishing behavior in a complex and uncertain manner. To the extent possible, measures have been designed to spread the burden of new restrictions across geographical areas, gear types,

vessel sizes, and user groups. The proposed measures were selected to be more fair and equitable in the short-term while longer-term measures are developed through FW 42. These measures were chosen to achieve the necessary F reductions for specific stocks without causing effort to shift to other areas, thereby jeopardizing rebuilding efforts of additional stocks.

- **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.**

Within the context of the conservation goals of the FMP, this emergency action contains measures to promote efficiency in the utilization of the fishery resource. This action relies upon DAS restrictions to further reduce F on specific stocks for fishing year 2006. Reductions/restrictions in DAS are a more efficient means of reducing F for specific stocks because these measures allow vessels to fish in the most efficient manner, given the necessary DAS reductions. While measures are included that tend to reduce economic efficiency of vessels (area restrictions, gear requirements, trip limits, etc.), they are generally required for sound management reasons. For example, the Regular B DAS Program is restricted to the U.S./Canada Management Area because it is necessary to restrict vessel operations under this program to an area in which the available groundfish species (e.g., GB haddock, pollock, and redfish) are better capable of sustaining greater levels of fishing effort.

The revised preferred alternative also includes measures that are designed to improve economic efficiency. This action removes differential DAS counting for vessels fishing in the U.S./Canada Management Area, allowing vessels to continue to target healthy groundfish stocks on GB without reductions in DAS. This action also implements a measure that would allow vessels to fish inside and outside of the Eastern U.S./Canada Area on the same trip, improving the flexibility of vessel operations. This action also continues the DAS Leasing Program in order for vessels to obtain additional DAS so that they can be operated more efficiently and provide greater returns to their owners. None of these measures have economic allocation as their sole purpose and would offer other biological and social benefits to the fishery.

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

This action allows for the use of different gear, vessel size, and fishing practices throughout all RMAs managed by the FMP. While the proposed measures for the Regular B DAS Program include restrictions on the type of gear, area fished, seasons fished, and landing limits for some species, there are no restrictions preventing the use of a specific gear in an open area under a Category A DAS, and few restrictions on the deployment of that gear. Proposed measures for the recreational and commercial fishing sectors were chosen to achieve an equal reduction in F on specific groundfish stocks for each sector separately to provide equal conservation benefits while preserving the variations in fishing methods and catches.

- **Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.**

The proposed measures do not duplicate other existing fishery regulations. However, the proposed measures do mirror many of the measures currently being proposed by the Council in FW 42. The proposed measures in this action would be superseded by those in FW 42 once implemented.

Most of the measures contained in this action mirror those recently adopted by the Council for implementation in FW 42 to maximum extent possible in an effort to minimize costs to industry associated with adapting to the measures that will be implemented under FW 42. These measures are necessary to immediately reduce F for specific groundfish stocks until long-term measures could be implemented by FW 42. NMFS considered the costs and benefits of a range of alternatives that would achieve the objectives of this action and the conservation goals of the FMP. It considered costs to the industry, as well as enforcement and administrative costs, in selecting the preferred alternative. Other alternatives considered would have either imposed unnecessary costs on all sectors of the industry. Closed area alternatives were considered, but were rejected because they would have severely impacted the industry by preventing all vessels, including commercial and recreational vessels, from operating in specific areas and would have differential impacts on the fishing industry of specific areas. The revised preferred alternative is more effective at achieving the necessary mortality reductions for the 2006 fishing year and would result in fewer adverse economic impacts than the original preferred alternative. This action would immediately and effectively reduce F on specific groundfish stocks while providing opportunities for vessels to obtain more DAS through the DAS Leasing Program and target healthy groundfish stocks through the Regular B DAS Program. Therefore, the revised preferred alternative would minimize the material economic affect on the regional economy.

- **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 impacts on such communities.**

The analysis of the potential impacts of the proposed measures identifies the primary ports that would be affected by measures proposed by this action. Measures included in this action consider the importance of fishery resources to these communities and endeavor to implement measures that would maintain progress towards rebuilding these fisheries without compromising sustained participation of these communities in the groundfish fishery. The continuation of the DAS Leasing Program and the Regular B DAS Program facilitates continued participation in the NE groundfish fishery by continuing opportunities to obtain additional DAS and target healthy NE groundfish stocks on GB. In addition, the revised preferred alternative eliminates the differential DAS counting measure for vessels fishing with the U.S./Canada Management Area,

thereby facilitating the continuation of a directed fishery on haddock reducing the adverse economic impacts to local fishing communities, domestic fish markets, and shoreside infrastructure.

- **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.**

This emergency action would implement restrictive measures to reduce F on groundfish stocks in the NE. Although the emergency measures are intended to focus reductions in F on GOM cod, CC/GOM yellowtail flounder, and SNE/MA yellowtail flounder, differential DAS counting will reduce F, including bycatch, on other stocks, as well. The implementation of a trip limit for GOM cod minimizes incentives to target this species, while accommodating a level of catch that minimizes regulatory discards. The implementation of a trip limit for GB yellowtail flounder reduces the likelihood that the hard TAC for this stock in the U.S./Canada Management Area will be achieved prior to the end of the fishing year. Should the TAC be achieved before the end of the fishing year, possession of GB yellowtail flounder would be prohibited, but discarding would continue. All catch of groundfish stocks of concern in the Regular B DAS Program count toward the incidental catch TACs, regardless of whether such catch is kept or discarded. The accounting of all fish caught serves as an incentive for fishers to reduce bycatch in order to decrease the rate at which the TAC is harvested, and enable more fishing opportunity to target healthy groundfish stocks under this program. Requiring trawl vessels to use a haddock separator trawl when participating in this program would decrease the amount of cod, flounder, skate, and lobsters caught when targeting haddock under this program.

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

The conservation and management measures proposed in this action, to the extent practicable, promote the safety of human life at sea. The revised preferred alternative includes a differential DAS counting measure that is applied to the entire GOM and SNE/MA RMAs. Applied in such a manner minimizes safety concerns typically associated with such a measure in that there is no incentive to redirect effort to other potential more dangerous areas, especially offshore areas. While the revised preferred alternative encourages effort to shift onto GB, the elimination of differential DAS counting for vessels participating in the U.S./Canada Management Area (portions of the GB RMA located farther offshore), reduces incentives to fish harder and with less crew to maximize the value of allocated DAS. In addition, the revised preferred alternative continues the DAS Leasing Program and a modified Regular B DAS Program that would provide additional sources of revenue for vessels to maintain their vessels. Finally, this revised preferred alternative would allow vessels the flexibility to fish inside and outside of the Eastern U.S./Canada Area on the same trip. This measure was an important suggestion from recent safety hearings hosted by the Council, as it would allow vessels to continue to fish closure to shore if weather conditions deteriorate.

9.1.2 Other MSA Requirements

Section 303(a) of MSA contains 14 required provisions for FMPs. These are discussed below. It should be emphasized that the requirement is imposed on the FMP. In some cases noted below, the MSA requirements are met by information in the NE Multispecies FMP, as amended. Any fishery management plan that is 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;

Optimum yield from this fishery is harvested entirely by U.S. vessels. There is no opportunity and there are no provisions for foreign fishing in this FMP. The measures implemented by this action for American vessels comply with the national standards and other provisions of the MSA, as described in this section.

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

A detailed description of the fishery is included in the Affected Human Environment section of Amendment 13. A brief update of the fishery is included in the Affected Human Communities section of this document, Section 7.4.

(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;

Maximum sustainable yield is described in Amendment 13, Section 3.1.5, with a short explanation of the source of this estimate. Information contained in GARM II also provides estimates of MSY for each groundfish stock based on updated information. Optimum yield continues to be defined as in Amendment 9 and is achieved when the fishery is fishing at the target F for a given stock size. The condition of the fishery is summarized in Section 7.2, while information on landings and revenues from the fishery is described in Section 9.4 of Amendment 13 and updated in Section 7.4. Probable future stock conditions are estimated in Section 5.2.1.1 of Amendment 13. The future economic condition of the fishery is described in Section 5.4 of Amendment 13 and updated to reflect the impacts of the preferred alternative in Section 7.4.

(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;

Fishing vessels of the U.S. will harvest the OY from the fishery and none will be available to foreign fishing. All catch will be sold in the U.S.

(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;

Reporting requirements for the NE multispecies fishery are defined in Section 3.4.14 of Amendment 13. They are supplemented by requirements for the specific measures adopted by FW 40A, FW 40B, and FW 41 and are detailed in those actions (NEFMC 2004, NEFMC 2005a, and NEFMC 2005b, respectively). There are no additional reporting requirements associated with the proposed measures for this emergency action.

(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 revised preferred alternative does not alter a provision of the NE multispecies FMP that allows the carry-over of a small number of DAS from one fishing year to the next. If a fisherman is unable to fish because of weather or other ocean conditions, this measure allows his available fishing time to be used in the next fishing year. This practice does not require a consultation with the Coast Guard.

(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;

Essential fish habitat (EFH) for the species harvested in the multispecies fishery was described and identified in an earlier action (Amendment 11). This action does not change those designations. They will be revised in an omnibus amendment that will be implemented in 2008. A brief description of the habitats associated with this fishery is provided in Section 7.2.2. The revised preferred alternative will result in an overall reduction in fishing effort in the NE multispecies fishery, thus reducing adverse impacts of the fishery on EFH for species harvested by the fishery and on EFH for other species

that are affected by this fishery, and obviating the need to minimize adverse effects beyond the degree of mitigation that was provided in Amendment 13 to the Multispecies FMP. For the same reason, no habitat conservation or enhancement recommendations are required.

(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;

Additional research needs are specified in Sections 6.0 and 9.3.4 of Amendment 13.

(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;

Section 8.1 of the EA, as well as information contained in the addendum to the EA, describes the impacts of the revised preferred alternative on the NE multispecies fishery and other fisheries. The social impacts are described in Section 8.1.6 and in the addendum to the EA.

(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;

These criteria are defined in Section 3.1 of Amendment 13 and are not changed by the preferred alternative. Section 3.0 and Section 7.2.1 of this EA include a brief summary of the status determination criteria for the stocks managed by this FMP.

(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;

Standardized reporting methodologies have been defined in previous actions for this management plan. They include the VTR system and the dealer reporting system. The VTR regulations require vessel operators to report discards of fish. In addition to these reporting systems, Amendment 13 adopted an observer program that provides additional information on bycatch. The reporting requirements necessary to monitor

bycatch in the Regular B DAS Program were first described in FW 40A to the FMP and are continued through this emergency action. The standardized bycatch reporting methodology for all NE fisheries is currently being developed by an omnibus amendment for implementation shortly.

(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;

A description about the type and amount of fish caught and released alive when recreationally fishing for groundfish is contained in Section 8.1.1.2, including an estimate of the mortality of such fish.

(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; and

Descriptions of the commercial, recreational, and charter fishing sectors which participate in the fishery, including trends in landings by these sectors, are in Section 9.4 of Amendment 13. A brief update for these sectors is included in Section 7.4.

(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.

Amendment 13 to the FMP established rebuilding plans and conservation measures for groundfish stocks. These programs, and measures adopted to achieve the rebuilding programs, are likely to reduce overall harvest. Proposed management measures restrict harvest levels for all sectors of the fishery to achieve the same level of F reduction from each sector. Recovery benefits have been allocated equitably.

(15) The EFH Provisions of the SFA (50 CFR Part 600.815) require the inclusion of the following components of FMPs. The Council has fully met these obligations as detailed below each mandatory component.

(A) Identification and description of EFH

(B) Identification of fishing activities managed by authority of the Magnuson-Stevens Act that adversely affect EFH

(i) Evaluation of potential adverse effects of fishing on EFH

(ii) Minimization of the adverse effects of federally-managed fishing activities to the extent practicable

(C) Identification of non-Magnuson-Stevens Act fishing activities not managed by authority of the Magnuson-Stevens Act that may adversely affect EFH

(D) Identification of non-fishing related activities that may adversely affect EFH.

(E) Cumulative impacts analysis

(F) Identification of conservation and enhancement actions.

(G) List the major prey species and discuss the location of the prey species' habitat

(H) Identification of habitat areas of particular concern

(I) Recommendations for EFH-related research and information needs

(J) Review and revision of EFH components of FMPs.

(A) Identification and description of EFH

EFH for the management unit of the NE Multispecies FMP has been identified and described in Amendment 11. The Council plans to update these EFH designations through an omnibus amendment to the NE Multispecies FMP that will be completed in 2008.

(B) MSA Fishing activities that adversely affect EFH

(i) Evaluation of potential adverse effects

Section 9.3.1 of Amendment 13 evaluates the potential adverse effects of fishing activities and gear commonly used in the Northeast region of the U.S. It also evaluates the effects of bottom trawls and dredges on benthic marine habitats in the region. The information in this section serves as the basis for evaluating which gear types, if any, are most likely to have an adverse impact on EFH for federally-managed species in the NE region. Section 9.3.1.8 of Amendment 13 summarizes the results and findings of this section, identifying the potential adverse impacts of the three principal mobile, bottom-tending gears on three principal bottom types in the region. These results serve as the basis for analyzing proposed alternatives to minimize the adverse impacts of these gears on EFH. Section 7.2.3 of this EA includes a summary of the habitat impacts of gear used to target groundfish.

(ii) Minimization of adverse effects

In order to minimize and mitigate the adverse effects of the fishery on EFH to the extent practicable, the Council implemented effort reductions, gear restrictions and habitat closed areas for bottom tending mobile gear in Amendment 13 to the FMP. The Council has determined that the combination of these measures minimizes, to the extent practicable, the adverse effects of fishing on EFH. This includes the adverse effects of the groundfish fishery on all federally-designated EFH as well as the adverse effects of other federally-managed fisheries on groundfish EFH. This action does not alter those measures designed to minimize effects to habitat implemented by Amendment 13. This action may result in additional reductions in effort, as this action would continue the Amendment 13 default Category A DAS reduction and apply differential DAS counting throughout the NE. This would indirectly reduce impacts on EFH beyond that assessed by Amendment 13 by further reducing the amount of DAS available to fish for FY 2006.

(C) Identification of non-MSA fishing activities that may adversely affect EFH

Section 9.3.1.9 of Amendment 13 addresses the requirement of this component. This section will be thoroughly updated in the upcoming omnibus habitat amendment to the NE Multispecies FMP. This action does not include any additional information on this subject beyond that offered by Amendment 13.

(D) Identification of non-fishing related activities that may adversely affect EFH

Section 9.3.1.10 of Amendment 13 addresses the requirements of this component. This section will be thoroughly updated in the upcoming omnibus habitat amendment (to be Amendment 14 to the NE Multispecies FMP). This action does not include any additional information for this requirement beyond that offered by Amendment 13.

(E) Cumulative impacts analysis

Section 8.3.3 of this document addresses the requirement of this component.

(F) Identification of conservation and enhancement actions

Section 9.3.2 of Amendment 13 addresses this requirement. This section will be thoroughly updated in the upcoming omnibus habitat amendment to the NE Multispecies FMP. This action does not include any additional information for this requirement beyond that offered by Amendment 13.

(G) List the major prey species and discuss the location of the prey species' habitat

Section 9.3.3 of Amendment 13 addresses this requirement. This section will be thoroughly updated in the upcoming omnibus habitat amendment to the NE Multispecies FMP. This action does not include any additional information for this requirement beyond that offered by Amendment 13.

(H) Identification of habitat areas of particular concern

Section 9.3.5 of Amendment 13 addresses this requirement. This section will be thoroughly updated in the upcoming omnibus habitat amendment to the NE Multispecies FMP. Only one HAPC has been identified for the NE multispecies fishery. This HAPC has been identified for GB cod and lies within the confines of Closed Area II. This action does not include any additional information relating to this requirement beyond that offered by Amendment 13. Additional HAPC designations being considered by the NEFMC and the MAFMC will be implemented in omnibus habitat amendment to the NE Multispecies FMP, which will be implemented in 2008.

(I) Recommendations for EFH-related research and information needs

Section 9.3.4 of Amendment 13 addresses this requirement. This section will be thoroughly updated in the upcoming omnibus habitat amendment to the NE Multispecies FMP. This action does not include any additional information on this subject beyond that offered by Amendment 13.

(J) Review and revision of EFH components of FMPs.

Section 9.3.6 of Amendment 13 addresses this requirement. EFH for all the species that are managed as part of the NE multispecies complex will be thoroughly updated in the upcoming omnibus habitat amendment to the NE Multispecies FMP.

9.1.3 EFH Assessment

This essential fish habitat (EFH) assessment is provided pursuant to 50 CFR 600.920(e) of the EFH Final Rule to initiate EFH consultation with NMFS.

9.1.3.1 Description of Action

The revised preferred alternative maintains the Amendment 13 default measure that would reduce the number of available Category A DAS and reduces effort in the groundfish fishery through counting DAS used at a rate of 1.4:1 throughout the entire GOM and SNE/MA RMAs and portions of the GB RMA, while maintaining specific programs that mitigate the social and economic impacts of these effort reductions such as the continuation of the DAS Leasing Program and a modified Regular B DAS Program in the U.S./Canada Management Area. This action would also delay the start date of the Eastern U.S./Canada Haddock SAP until August 1, 2006. Details of the revised preferred alternative are detailed in the addendum to this EA as well as in Sections 5.2 through 5.7 of this document.

9.1.3.2 Assessing the Potential Adverse Impacts

The potential adverse impacts to EFH of the revised preferred alternative are described in the Section 3.2 of the addendum to this EA and in portions of Section 8.1.3 of this document. This analysis concluded that the revised preferred alternative would have beneficial impacts on EFH because it would reduce overall effort in the groundfish fishery beyond that of the No Action alternative, as a result of the continuation of the Amendment 13 default reduction in available Category A DAS, extension of differential DAS counting into the entire GOM and portions of the GB RMAs, and the delayed start date of the Eastern U.S./Canada Haddock SAP Program. While this action would not implement differential DAS counting in the U.S./Canada Management Area, overall effort in the fishery would still be reduced, providing benefits to EFH. Although this action reinstates a modified Regular B DAS Program that could result in increased adverse habitat impacts by trawl vessels participating in this program, the revised preferred alternative restricts this program to the U.S./Canada Management Area. The possibility that this management measure could have an overall adverse effect on EFH is further limited by the fact that trawl vessels could transfer Category A DAS that are currently being used in other areas into the Regular B DAS Program. This would limit any adverse habitat impacts to a specific area on GB and minimally reduce adverse habitat impacts in the GOM and SNE/MA. While the No Action alternative would not continue the Regular B DAS Program, resulting in less severe habitat impacts than the revised preferred alternative, the other measures proposed by this action would result in reduced adverse impacts compared to the No Action alternative.

9.1.3.3 Minimizing or Mitigating Adverse Impacts

Section 8.2.3 of the EA and Section 3.2 of the addendum to this EA demonstrates that the overall habitat impacts of all the measures proposed in this action would result in

positive habitat benefits. This action maintains all of the measures intended to minimize the adverse effects of the groundfish fishery on EFH that were implemented by Amendment 13 and does not allow for additional access to closed areas. This action further reduces fishing effort in the groundfish fishery by continuing the default reduction in available Category A DAS implemented by Amendment 13 and counting all Category A DAS used in the entire GOM and SNE/MA RMAs and a portion of the GB RMA at a rate of 1.4:1. Along with the delayed start date of the Eastern U.S./Canada Haddock SAP, the revised preferred alternative would result in positive impacts to EFH. Therefore, measures to further mitigate or minimize adverse effects on EFH beyond what is already provided in Amendment 13 are not necessary.

9.1.3.4 Conclusions

The proposed emergency action is expected to have a positive effect on EFH of federally managed species. Because the potential adverse impacts associated with specific measures of this action are minimal and the overall effects of the entire action on EFH are positive, no EFH consultation is required.

9.1.4 Skate Baseline Review

The Skate FMP identified and characterized a baseline of management measures in other fisheries that provide additional conservation benefits to skate species; i.e., the Skate FMP baseline. The Skate FMP requires that if the Council initiates an action in another FMP that changes one or more of the baseline measures such that the change is likely to have an effect on the overall mortality for a species of skate in a formal rebuilding program, then a skate baseline review is required (See Section 4.1.6 of the Skate FMP for more details). In this case, the singular Skate FMP baseline management measure that is being modified by the preferred alternative is NE multispecies DAS restrictions. Since this Secretarial emergency action does not liberalize NE multispecies DAS or the current restrictions on their use, but rather imposes further restrictions on DAS usage by NE multispecies vessels (i.e., by maintaining the default measure that would reduce the number of Category A DAS allocated to each vessel and implementing a differential DAS counting measure), the impact of these measures on skate mortality is either positive or neutral. As a result, a skate baseline review would not be triggered by this action. The impacts on skates are described in the biological impacts description for each alternative considered for this action.

9.2 National Environmental Policy Act (NEPA)

NEPA provides a mechanism for identifying and evaluating environmental issues associated with Federal actions, and for considering a reasonable range of alternatives to avoid or minimize adverse environmental impacts. This document is designed to meet the requirements of both the Magnuson-Stevens Act and NEPA.

9.2.1 Environmental Assessment

The required elements of an Environmental Assessment (EA) are specified in 40 CRS 1508.9(b), and are included in this document as indicated below:

- Need for this action: Section 4.0
- Alternatives considered: Section 6.0
- Environmental impacts of preferred alternative: Section 8.0
- The agencies and persons consulted on this action are listed in Section 9.2.4

In addition, Section 7.0 of this document includes a discussion of the affected environment for this action as a basis to evaluate the impacts of the alternatives specified for this action.

9.2.2 Finding of No Significant Impacts

National Oceanic and Atmospheric Administration Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of a preferred alternative. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant in making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

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

The proposed measures are not reasonably expected to jeopardize the sustainability of any target species that may be affected. The purpose of these measures is to immediately reduce F for the start of the 2006 fishing year until long-term management measures can be implemented by FW 42. All of the measures included in the revised preferred alternative, including maintaining the default measure that reduces the number of available Category A DAS and implementing differential DAS counting in the entire GOM and SNE/MA RMAs and portions of the GB RMA, would reduce F on groundfish stocks (see Section 8.1 of this EA and Section 3.1.1 of the addendum to this EA for further details). These measures are necessary to maintain the rebuilding program for groundfish stocks and ensure the long-term sustainability of the resource.

2. Can the preferred alternative reasonably be expected to jeopardize the sustainability of any non-target species?

The revised preferred alternative is not reasonably expected to jeopardize the sustainability of any non-target species. The revised preferred alternative would implement several measures that would reduce fishing effort over a wide geographic

area. This action would indirectly reduce fishing pressure on non-target species by maintaining the default measure which reduces the number of Category A DAS that may be fished outside of a SAP by limited access NE multispecies vessels and counting any DAS used by groundfish vessels in most areas managed by the FMP at a rate of 1.4:1. In addition, this action proposes restrictive trip limits to ensure the proper operation of the haddock separator trawl in the Regular B DAS Program and to minimize impacts of this program on non-target species such as monkfish, skates, flounders, and lobsters (see Section 8.1.2 for further details).

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

No, the revised preferred alternative cannot be reasonably expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the MSA and identified in FMPs. This action would maintain the Amendment 13 default measure that reduces the number of available Category A DAS and charging any Category A DAS used in any RMA at a rate of 1.4:1. Such effort reductions decrease the number of Category A DAS available to groundfish vessels and the frequency of the use of bottom trawl gear in this fishery. Further, this action would temporarily benefit EFH on eastern GB by delaying the start date of the Eastern U.S./Canada Haddock SAP. This action would also continue the Regular B DAS Program within the U.S./Canada Management area. While continuation of this program is likely to temporarily increase effort in this area, regulations governing vessel activities in this area will cause any increase in effort, and consequent impacts to EFH, to be limited. Further, such regulations, particularly hard TACs and access limitations, ensure that any additional effort in this area resulting from the continuation of the Regular B DAS Program would not increase adverse impacts to EFH beyond the level mitigated for in earlier groundfish actions. Finally, this action maintains and does not affect the groundfish or habitat closed areas currently in effect. The conclusion of the EFH assessment (Section 9.1.3) is that this action would have a positive impact on EFH.

4. Can the preferred alternative reasonably be expected to have a substantial adverse impact on public health or safety?

No, the action is not expected to have a substantial impact on public health or safety. By applying differential DAS counting throughout the entire GOM and SNE/MA RMAs, there is no incentive to fish farther from shore to avoid the extra DAS charge, minimizing potential safety concerns associated with this type of measure. While this action would provide incentives to fish in the U.S./Canada Management Area on GB, the removal of differential DAS counting from this area reduces the need to fish longer hours with less crew to maximize the value of allocated DAS. This action also implements several measures that would mitigate some of the safety concerns expressed by the fishing industry. The measure to allow vessels to fish inside and outside of the Eastern U.S./Canada Area on the same trip provides greater flexibility in the planning of trips out to the Eastern U.S./Canada Area that would minimize incentives to prolong a trip in the

area should weather conditions worsen, enabling vessels to fish more safely closer to shore or in deeper water. This action also continues the DAS Leasing Program. This program is intended to help fishermen increase fishing revenues, either by obtaining additional DAS or by leasing DAS to other vessel operators. Increases in revenue may provide additional funds to maintain fishing vessels, increasing safe operations. The safety analysis is included in Section 8.1.6 of this EA.

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

The proposed management measures are not reasonably expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat. A number of endangered or threatened species and marine mammals are found within the geographic range of the NE multispecies fishery. The impacts of the proposed measures on these species are described in Section 8.1.4 of the EA and in Section 3.3 of the addendum to this EA. The proposed measures will likely have a negligible, if not positive, impact on endangered or threatened species because they will result in decreased fishing effort throughout the area managed by the FMP.

6. Can the preferred alternative reasonably be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

This emergency action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. The measures proposed by this action suggest a potential reduction in the adverse effects to any EFH associated with the fishing activities as a result of maintaining the Amendment 13 default measure which reduces available Category A DAS allocated to vessels and implementing differential DAS counting throughout all RMAs. Catches of target and incidental regulated groundfish stocks in the Regular B DAS Program will be tightly controlled through the use of hard TACs and limits on the use of DAS. Catches of target and incidental catch species under this program will be consistent with the mortality targets of Amendment 13 and the rationale for the program provided by FW 40A, and thus will not have a substantial impact on predator-prey relationships or biodiversity. NMFS concludes that particular measures within this action will have no more than minimal adverse impacts to EFH and that the overall impact to EFH will be positive. It is therefore reasonable to expect no substantial impact on biodiversity or ecosystem function.

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

No, although the revised preferred alternative would have positive natural and physical environmental impacts (see responses to questions 1 and 2 in this section and the analysis in Section 3.0 of the addendum to this EA and portions of Section 8.1 of this EA), there would be no significant social or economic impacts (Section 8.3.3.5). The

revised preferred alternative would have an adverse impact on fishing vessels, purchasers of seafood products, ports, recreational anglers and operators of party/charter businesses. This impact may be offset by the use of Regular B DAS as well as offsetting revenues from any of the approved SAPs (Sections 8.1.5 and 9.8.1). Further, the short-term adverse impacts predicted to result from the revised preferred alternative are not expected to be significant when compared to the negative impacts of Amendment 13, or the benefits that will accrue in the future as a result of early stock rebuilding. Therefore, the revised preferred alternative would not have significant social or economic impacts interrelated with natural or physical environmental effects.

8. Are the effects on the quality of human communities likely to be highly controversial?

The effects of the proposed measures on the quality of human communities are not expected to be highly controversial. Measures proposed by this action may be somewhat controversial, as some members of the fishing industry believe that the benefits of effort reductions implemented by Amendment 13 are not yet evident and that further effort reductions are unnecessary at this time. However, available information indicates that the fishery is not achieving the rebuilding targets established in Amendment 13 and that further effort reduction is necessary to avoid further delaying the rebuilding of already depleted groundfish stocks and to maintain consistency with the requirements of the MSA and SFA. Failure to enact measures to reduce F at this time would only further delay rebuilding, resulting in more restrictive and controversial measures during the 2008 biennial assessment.

9. Can the preferred alternative reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

No, the revised preferred alternative cannot be reasonably expected to result in substantial impacts to unique areas or ecological critical areas. The only designated HAPC in the areas affected by this action is protected by an existing closed area that would not be affected by this action. In addition, vessel operations around the unique historical and cultural resources encompassed by the Stellwagen Bank National Marine Sanctuary would not likely be altered by this action. As a result, no substantial impacts are expected from this action.

10. Are the effects on human communities likely to be highly uncertain or involve unique or unknown risks?

The revised preferred alternative is not expected to result in highly uncertain effects on human communities or involve unique or unknown risks. Although it is unclear just how individual participants in the fishery will react to the proposed measures, the proposed measures will result in the impacts to human communities as described in Section 8.1, with a relative amount of certainty.

11. Is the preferred alternative related to other actions with individually insignificant, but cumulatively significant impacts?

The revised preferred alternative is related to other recent management actions beginning with Amendment 13 because these actions have implemented the bulk of the management measures of the FMP currently in effect. While the Amendment 13 measures resulted in significant impacts to human communities, the actions following Amendment 13 (FW 40A, FW 40B, and FW 41) did not contain any significant impacts. These additional actions were taken to refine measures implemented under Amendment 13. Several of the measures included in this revised preferred alternative (the default measures – change in the Category A:B DAS ratios, differential DAS counting in the SNE/MA RMA, and the DAS Leasing Program) were previously analyzed, and the impacts considered, under Amendment 13 and do not contribute to further separate impacts. Further, the proposed measures represent relatively minor revisions to the regulations currently in place and the measures that would remain in place under the No Action alternative.

In contrast, FW 42, which will likely be implemented during the 2006 fishing year, should be considered in conjunction with the proposed measures. FW 42 proposes to further reduce F on 6 stocks of groundfish, and the impacts will begin during the 2006 fishing year. Based upon the draft EA for FW 42 (March 7, 2006), the impacts of that action are not expected to be significant. Further, as a majority of the measures proposed in this action are mirrored on the measures currently proposed in FW 42, the combined effect of the revised preferred alternative with FW 42 is not expected to be significant.

12. Is the preferred alternative likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

The revised preferred alternative is not likely to affect objects listed in the National Register of Historic Places or cause significant impact to scientific, cultural, or historical resources. The only object listed in the National Register of Historic Places is the wreck of the steamship *Portland* within the Stellwagen Bank National Marine Sanctuary. The current regulations allow fishing within the Stellwagen Bank National Marine Sanctuary. The revised preferred alternative would not regulate current fishing practices within the sanctuary. However, vessels typically avoid fishing near the wreck to avoid tangling gear on the wreck. Therefore, this action would not result in any adverse affects to the wreck of the *Portland*.

13. Can the preferred alternative reasonably be expected to result in the introduction or spread of a nonindigenous species?

This action would not result in the introduction or spread of any nonindigenous species, as it would not result in any vessel activity outside of the Northeast region.

14. Is the preferred alternative likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

No, the revised preferred alternative is not likely to establish precedent for future actions with significant effects. The revised preferred alternative is a temporary emergency action intended to implement immediate reductions in F for the groundfish fishery until such time as more permanent measures can be implemented by FW 42. The revised preferred alternative would be superseded by management measures contained in FW 42 and would have only temporary effects. Further, precedent for the use of such emergency actions is well established and codified in Section 305(c) of MSA. The future use of emergency actions will be contingent upon the need to ensure that the FMP maintains consistency with MSA.

15. Can the preferred alternative reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

The revised preferred alternative is intended to implement measures that would offer further protection of marine resources and would not threaten a violation of Federal, state, or local law or requirements to protect the environment. In fact, this action was determined to be consistent with the Coastal Zone Management Act (CZMA) requirements of individual states.

16. Can the preferred alternative reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

As specified in the responses to the first two criteria of this section, the revised preferred alternative is not expected to result in cumulative adverse effects that would have a substantial effect on target or non-target species. This action would reduce F for several groundfish stocks, with indirect reduction in F for non-target and non-groundfish stocks, as described in Section 8.1 above.

DETERMINATION: In view of the information presented in this document and the analysis contained in the supporting EA and addendum to the EA prepared for this emergency action, it is hereby determined that the proposed emergency action will not significantly impact the quality of human communities as described above and in the supporting EA. In addition, all beneficial and adverse impacts of the revised preferred alternative have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

_____ _____

Assistant Administrator for Fisheries, NOAA **Date**

9.2.3 List of Preparers; Point of Contact

Questions concerning this document may be addressed to:

Patricia A. Kurkul,
Regional Administrator
National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA 01930

This document was prepared by:

Douglas Christel, Northeast Regional Office, National Marine Fisheries Service

Consultations on this document were provided by:

Eric Thunberg, Northeast Fisheries Science Center, NMFS
John Walden, Northeast Fisheries Science Center, NMFS
Jennifer Anderson, Northeast Regional Office, NMFS
David Stevenson, Northeast Regional Office, NMFS
Lynn Lankshear, Northeast Regional Office, NMFS
Daniel Caless, Northeast Regional Office, NMFS
Thomas Warren, Northeast Regional Office, NMFS
Susan A. Murphy, Northeast Regional Office, NMFS

9.2.4 Agencies Consulted

The following agencies were consulted in the preparation of this document:

National Marine Fisheries Service, NOAA, Department of Commerce
New England Fishery Management Council

9.2.5 Opportunity for Public Comment

The proposed management measures attempt to mirror those developed by the Council in FW 42. Measures consistent with the FW 42 measures were developed in accordance to Council process that incorporates public comment. The revised preferred alternative followed the procedures specified in the MSA and the Administrative Procedures Act. Proposed measures were published in the Federal Register on March 3, 2006, (70 FR 19724), and 10 days were provided for public comment from the date of filing with the Federal Register on February 27, 2006.

9.3 Endangered Species Act (ESA)

Section 7 of the Endangered Species Act (ESA) requires Federal agencies authorizing activities that affect threatened or endangered species to ensure that those

activities do not jeopardize the continued existence of listed species. NMFS has concluded that the proposed measures are not likely to jeopardize any ESA-listed species or alter or modify any critical habitat, based on the discussion of impacts in this document (Section 8.1.4) and on the assessment of impacts in Section 5.2.9 of the Amendment 13 FSEIS (NEMFC 2003). These proposed measures are not likely to reduce the effectiveness of the take reduction plans.

9.4 Marine Mammal Protection Act (MMPA)

In Section 5.2.9 of the Amendment 13 FSEIS, the mortality and serious injury of protected species were assessed relative to the Potential Biological Removal (PBR) allowed under the Marine Mammal Protection Act (MMPA) for each species and were found to be below those levels. Amendment 13 concluded that the measures of the FMP would not compromise the ability of the species protected by the MMPA to achieve their optimum sustainable population levels. The proposed measures, analyzed in Section 8.1.4, do not alter that conclusion.

9.5 Coastal Zone Management Act (CZMA)

NMFS has determined that the proposed measures comply with the rules and regulations of the Coastal Zone Management Act. This document has been sent to coastal states from Maine to North Carolina for an expedited review of compliance with individual state's CZMA management regulations.

9.6 Administrative Procedure Act (APA)

The proposed measures would be implemented in accordance with the requirements of the Administrative Procedure Act.

9.7 Data Quality Act

In accordance with the Data Quality Act (Public Law 106-554), the Office of Management and Budget directed each Federal agency to issue guidelines that ensure the quality, objectivity, utility, and integrity of information disseminated by federal agencies. The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the Data Quality Act. Information must meet standards of utility, integrity, and objectivity. This section provides information that demonstrates compliance with these standards.

9.7.1 Utility of Information Product

A. Is the information helpful, beneficial or serviceable to the intended user?

This action proposes measures necessary to immediately reduce F on specific groundfish stocks. The environmental assessment (EA), the addendum to the EA, and the Federal Register document prepared for this

action include a description of the proposed measures, the reasons why such measures are necessary, and the biological impacts of the proposed measures. The information in the EA and addendum to the EA is useful to understand the rationale for the action along with the anticipated impacts associated with the proposed measures. The Federal Register notice provides a summary of the information contained in the EA and addendum to the EA to inform interested public in the scope and purpose of the revised preferred alternative. This revised preferred alternative is consistent with the NE Multispecies FMP and the conservation and management goals of the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

B. Is the data or information product an improvement over previously available information? Is it more current or detailed? Is it more useful or accessible to the public? Has it been improved based on comments from or interactions with customers?

The revised preferred alternative would implement new management measures. The EA and addendum to the EA contains updated information on the status of groundfish stocks along with the impacts of the proposed measures, based upon the best available scientific information. Many of the measures represent a revision of currently existing management measures originally implemented under Amendment 13 and FW 40A to the FMP. The proposed measures attempt to mirror those adopted under FW 42 to the FMP that have been developed as a result of a public participation process. The EA and addendum to the EA will be made available to the public for comment. The Federal Register notice will also be made available to the public to review and comment on the proposed measures.

C. What media are used in the dissemination of the information? Printed publications? CD-ROM? Internet? Is the product made available in a standard data format? Does it use consistent attribute naming and unit conventions to ensure that the information is accessible to a broad range of users with a variety of operating systems and data needs?

The Federal Register document that announces the proposed measures, as well as the EA and addendum to the EA that analyze the potential impact of such measures, will be made available in printed publication and on the Internet website for the Northeast Regional Office.

9.7.2 Integrity of Information Product

The information product meets the following standards for integrity:

- If information is confidential, it is safeguarded pursuant to the Privacy Act and Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business and financial information).

- (e.g., Confidentiality of Statistics of the Magnuson-Stevens Fishery Conservation and Management Act; NOAA Administrative Order 216-100 - Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act.)

9.7.3 Objectivity of Information

(1) Indicate which of the following categories of information products apply for this product:

- □ **Original Data**
- □ **Synthesized Products**
- □ **Interpreted Products**
- □ **Hydrometeorological, Hazardous Chemical Spill, and Space Weather Warnings, Forecasts, and Advisories**
- □ **Experimental Products**
- ■ **Natural Resource Plans**
- □ **Corporate and General Information**

(2) Describe how this information product meets the applicable objectivity standards. (See the DQA Documentation and Pre-Dissemination Review Guidelines for assistance and attach the appropriate completed documentation to this form.)

What published standard(s) governs the creation of the Natural Resource Plan? Does the Plan adhere to the published standards? (See the NOAA Sec. 515 Information Quality Guidelines, Section II(F) for links to the published standards for the Plans disseminated by NOAA.)

Any management action under this FMP must comply with the requirements of the MSA; the National Environmental Policy Act; the Regulatory Flexibility Act; the Administrative Procedures Act; the Paperwork Reduction Act; the Coastal Zone Management Act; the Endangered Species Act; the Marine Mammal Protection Act; and Executive Orders 12612 (Federalism), 12630 (Property Rights), 12866 (Regulatory Planning), and 13158 (Marine Protected Areas). In addition, the proposed measures attempt to maintain consistency with the measures adopted by the New England Fishery Management Council for implementation in FW 42. NMFS has determined that the proposed rule to implement the measures under this emergency Secretarial action is consistent with the National Standards of the Magnuson-Stevens Act and all other applicable laws.

Was the Plan developed using the best information available? Please explain.

The mortality reductions necessary under this action to maintain the rebuilding program established under Amendment 13 have been determined using the best scientific information available from the results of the Groundfish Assessment and Review Meeting (GARM II) in August 2005. In addition, analyses for the proposed measures incorporate the most complete data set from fishing year 2004 to assess the impacts of the proposed measures. These data represent the best information available. National Standard 2 requires that the FMP's conservation and management measures shall be based upon the best scientific information available. These measures have been determined to be in compliance with National Standard 2 are based upon the best scientific information available.

Have clear distinctions been drawn between policy choices and the supporting science upon which they are based? Have all supporting materials, information, data and analyses used within the Plan been properly referenced to ensure transparency?

The policy choices (i.e., management measures) that are proposed are supported by the available scientific information. Specific measures included in this action such as the DAS restrictions and the trip limits are designed to meet the conservation goals and objectives of the FMP, while others are intended to provide for increased flexibility in vessel operations in order to mitigate the economic and social impacts of effort reductions that are fully supported by the best available scientific information. The supporting materials and analyses used to develop these measures are contained in readily available documents that are properly referenced in the EA and the addendum to the EA.

Describe the review process of the Plan by technically qualified individuals to ensure that the Plan is valid, complete, unbiased, objective and relevant. For example, internal review by staff who were not involved in the development of the Plan to formal, independent, external peer review. The level of review should be commensurate with the importance of the Plan and the constraints imposed by legally enforceable deadlines.

The development of an emergency Secretarial action involves the Northeast Fisheries Science Center (Center), the Northeast Regional Office, and NMFS Headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the emergency Secretarial action and clearance of the rule is conducted by staff at NMFS Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

9.8 Regulatory Impact Review

9.8.1 Executive Order 12866

E.O. 12866 requires a review of proposed regulations to determine whether or not the expected effects would be significant, where a significant action is any regulatory action that may

- Have an annual effect on the economy of $100 million or more, or adversely affect 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;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, of the principles set forth in the Executive Order.

Of these four criteria, the discussion to follow focuses only on the expected magnitude and duration of the economic impacts of the revised preferred alternative. The revised preferred alternative would implement a suite of measures that would be implemented at the start of FY2006 on May 1, 2006. These measures would meet or exceed the majority of the conservation objectives for all stocks managed under the NE Multispecies FMP and would be implemented on an interim basis to enable the Council to complete work on FW 42 which would meet or exceed all conservation objectives. Although the duration of the preferred alternative would be for no more than 180 days, the economic impacts discussed in Section 3.4 of the addendum to the EA and Section 8.1.5 of the EA are based on a 12-month expected duration of the emergency action. The twelve-month time frame was adopted for purposes of analysis in part due to limitations imposed by the math programming model used to predict biological and economic outcomes, and because a 12-month duration of the revised preferred alternative is expected to approximate the economic impacts of combining emergency Secretarial action with that of FW 42. As noted in Section 8.1.5, the economic impacts for FY2006 may be greater than that estimated herein because of the need to implement more restrictive measures for two yellowtail flounder stocks and GB winter flounder through FW 42. The magnitude of any underestimate is difficult to assess as FW 42 may differ in several ways from that of the emergency Secretarial action. At this time, the Council is attempting to craft alternatives that would target specific problem stocks. Any one of these measures could result in some substantive differences in the manner in which a given vessel may be affected, but the aggregate impact on the National or regional economy is not likely to be significantly greater from that of the emergency Secretarial action.

The revised preferred alternative would implement several changes affecting the use of Category A DAS. These changes include lowering the trip limits for GOM cod, CC/GOM yellowtail founder and SNE/MA yellowtail flounder; imposing a trip limit on

GB yellowtail flounder, GB winter flounder, and white hake; and implementing differential DAS counting at a rate of 1.4:1 on all Category A DAS used outside of the U.S./Canada Management Area. A more detailed discussion of the combined impacts of these measures is presented in Section 3.4 of the addendum to the EA and Section 8.1.5 of the EA. The revised preferred alternative would also implement changes to the recreational fishing regulations for GOM cod. The economic impact of these changes is discussed in Section 8.1.5.

Summary of Impacts on Fishing Revenue

The total value of all species landed by vessels with a limited access permit was $109 million during fishing year 2004. The revised preferred alternative may be expected to result in a 21 percent reduction in fishing revenue for an aggregate impact of $23 million in gross sales. This loss represents less than 2.6 percent of total region-wide fishing revenues from all species. Reduction in total revenue from trips landing groundfish ranged between 21 and 27 percent with the exception of Boston and Chatham with 15-17 percent reduction in total revenue. However, the impact of the loss of access to seafood in ports with a high dependence on groundfish vessels would be substantially greater. Ports with an estimated total adverse impact ranging between 4 and 10 percent included Chatham (5.8 percent), Provincetown (4.9 percent), and the port group of South Shore, Massachusetts (4 percent).

Due primarily to significant differences among vessels in terms of the importance of groundfish in total fishing sales, the revised preferred alternative would have different impacts across vessels of varying sizes, gear types, and in different ports or states. Vessels from the states of Maine, New Hampshire, and Massachusetts would be disproportionately affected compared to all other states. Among these three New England states, the revised preferred alternative would affect proportionally more New Hampshire vessels, but the impact to the most affected class of vessels (i.e. the 10 percent of vessels most affected by the preferred alternative) from New Hampshire was not too different that that of the similarly affected vessels in both Maine and Massachusetts. The revised preferred alternative would have similar impacts on groundfish vessels of all sizes as the median impact ranged between 13-14 percent for all vessel length classes. At the median, trawl vessels would be affected slightly more than gillnet vessels, although the estimated impact would be highest on hook vessels that fish in the GOM due to their high dependence on cod and the reduction in the cod trip limit.

Overall, the clearest measure of impact is any given vessel's dependence on groundfish for total fishing income. The median impact on vessels that rely on groundfish for less than 20 percent of sales would be only 3 percent reduction in sales. By contrast, the median impact on vessels that depend on groundfish trip income for 80 percent of total sales was estimated to be a 25 percent reduction in net return from fishing.

Summary of Recreational Fishing Impacts

The revised preferred alternative would affect the economic value of recreational fishing trips overall and would additionally affect party/charter businesses through

reduced demand for fishing trips. Due to a lack of appropriate data, a quantitative estimate of the reduced economic value to recreational anglers is not possible. In general, the revised preferred alternative is likely to have a larger adverse impact on private boat mode anglers since a larger percentage of private boat trips take place during the proposed seasonal prohibition in GOM cod retention as compared to anglers taking party/charter trips. The economic impact on party/charter businesses will depend on how their potential customers respond to the preferred alternative. Over the past four years, passenger demand has changed very little in spite of the fact that the GOM cod size limit was increased in 2002 and anglers were subject to a bag limit for the first time. This suggests that passenger demand may be largely unaffected by the size limit but party/charter businesses may lose customers f they cannot retain cod from November through March. Of the 148 vessels that took at least one party/charter trip all but 25 took no trips during the proposed seasonal prohibition. An upper bound estimate of the loss on passenger sales would be $154,000 assuming a complete loss on passenger demand for the duration of the closed season for GOM cod.

Mitigating Measures

The revised preferred alternative would eliminate the differential DAS counting for vessels participating in the U.S./Canada Management Area. This would enable vessels to continue to target healthy groundfish stocks on GB without incurring additional costs associated with differential DAS counting. In addition, the revised preferred alternative would retain the designated SAP's with some changes to the Eastern U.S./Canada Haddock SAP and the Regular B DAS Program, and would extend the DAS Leasing Program without change. Of these measures, the impact of the changes to the Regular B DAS Program may be most important in terms of its potential to provide less economic relief than the Pilot Program implemented under FW 40A.

Total revenues from the use of Regular B DAS over the duration of the Pilot Program were conservatively estimated at $10.4 million. The revised preferred alternative would reduce the number of allowable Regular B DAS during quarter 1 to 500 DAS, while leaving the allowable Regular B DAS for quarters 2-4 at 1,000 DAS. However, the revised preferred alternative would restrict the use of Regular B DAS to the U.S./Canada Management Area, would require the use of a separator trawl (or gear with equivalent performance standards), and would designate both GB winter flounder and GB yellowtail flounder as stocks of concern with 100 pounds/DAS trip limits. Although it could limit participation in the program, neither restricting the area for Regular B DAS nor the separator trawl requirement would be expected to necessarily change the potential earnings from the Regular B DAS Program. However, both GB yellowtail and winter flounders were important contributors to total Regular B DAS trips. Analysis of catch data on trips taken in the Pilot Program indicate that catch rates of stocks of concern may be too high resulting in a closure of the area for Regular B DAS prior before even half of the allotted B DAS are used. This analysis (see Section 8.1.1) suggests that potential revenues from the Regular B DAS Program may reduced by more than two-thirds to about $3 million.

The revised preferred alternative would delay the start of the Eastern U.S./Canada Haddock SAP, but would not affect the total potential yields from this SAP since no

changes to the haddock TAC was made. The DAS Leasing Program will be continued unchanged although the differential DAS would likely have an impact on the price of a leased DAS. With differential DAS it also means that any given vessel that may want to lease DAS would need to lease a larger number of DAS to get in the desired actual fishing time.

Determination of Significance

The revised preferred alternative would have an adverse impact on fishing vessels, purchasers of seafood products, ports, recreational anglers, and operators of party/charter businesses. The total reduction in total seafood revenue from the revised preferred alternative is estimated to be $23 million. This impact may be offset by the use of Regular B DAS as well as offsetting revenues from any one of the approved SAP's. Based on quantified economic impacts the revised preferred alternative would not exceed the $100 million threshold required for significance under the Executive Order.

9.8.2 Regulatory Flexibility Act

Description of the Reasons Why Action by Agency is Being Considered

The measures proposed by this action are necessary in order to immediately reduce F and prevent overfishing on specific groundfish stocks for the start of the 2006 fishing year on May 1, 2006, and to maintain two programs to help mitigate the economic and social impacts of the effort reductions of the FMP. The measures proposed by this action are necessarily limited in scope because they are intended only to provide sufficient temporary reduction in F for several groundfish stocks so as not to jeopardize the rebuilding programs of several groundfish stocks while NMFS and the Council develop and implement more permanent management measures through FW 42. Stocks affected by this action require immediate and substantial reductions in F to continue rebuilding according to the rebuilding program specified in Amendment 13 and comply with the MSA requirements. Further description of the purpose and need for the TACs is contained in Section 4.0 of this document.

The Objectives and Legal Basis for the Revised Preferred Alternative

Section 305(c) of the MSA states that if the Secretary finds that an emergency or overfishing exists, or that interim measures are needed to reduce overfishing for any fishery, he may promulgate emergency measures to address overfishing and address other management concerns while the Council prepares proposed regulations to stop overfishing and rebuild fish stocks on a more permanent basis. This action is based upon the Secretarial authority provided by the MSA and is intended to immediately reduce F for specific groundfish stock by May 1, 2006, and to continue two programs that help mitigate some of the economic and social impacts of effort reductions in the FMP. Alternatives other than the revised preferred alternative were considered and discussed in Section 6.0, but were rejected because these other options would not meet the objectives defined for this action in Section 4.0. In addition, the original preferred alternative was

not ultimately selected because the revised alternative would better meet the requirements of National Standard 1 and 88 of the Magnuson-Stevens Act.

Estimate of the Number of Small Entities and the Impacts to Such Entities

The SBA size standard for small commercial fishing entities is $4 million in gross sales while the size standard for small party/charter operators is $6.5 million. Available data for based on fishing year 2004 (FY2004) gross sales show that the maximum gross for any single commercial fishing vessel was $1.8 million and the maximum gross sales for any affected party/charter vessel was $1.0 million. While an entity may own multiple vessels, available data make it difficult to determine which vessels may be controlled by a single entity. For this reason, each vessel is treated as a single entity for purposes of size determination and impact assessment. This means that all commercial and party/charter fishing entities would fall under the SBA size standard.

Formally, any vessel that possesses a NE multispecies permit would be required to comply with the proposed regulatory action. However, for the purposes of determination of impact, only vessels that actually participated in an activity during FY2004 that would be affected by the revised preferred alternative were considered for analysis. A breakdown of the universe of unique commercial and party/charter small entities and participating small entities by permit classes is provided in Table 74. During FY2004, there were 1,002 permit holders that had an allocation of Category A DAS. Since limited access permit holders may participate in both commercial and party/charter activity without having a party/charter permit there were a total of 705 entities that participated in the commercial groundfish fishery and 6 that participated in the party/charter fishery for GOM cod. A small number of these entities (4) participated in both commercial and party/charter activities leaving a total of 707 unique vessels with an allocation of Category A DAS that may be affected by the revised preferred alternative. Overall, the revised preferred alternative would have a potential impact on a total of 3,216 limited or open access groundfish permit holders of which less than one-third (976) actually participated in either a commercial or party/charter activity that would be affected by the revised preferred alternative during FY2004 (Table 74). Of these vessels, 132 had been issued a limited access monkfish Category C or D permit and fished in the Regular B DAS Pilot Program during FY 2004-2005. The potential economic impacts of the revised preferred alternative on commercial and party/charter fishing vessels are discussed separately even though a small number of vessels do engage in both activities.

Permit Class	Number of Entities	Number of Entities Participating in Commercial Groundfish	Number of Entities Participating in Party/Charter Gulf of Maine Cod	Number of Entities Participating in Commercial and Party/Charter Gulf of Maine Cod
Permits with Category A DAS	1002	705	6	4
Permits with No Category A DAS	376	46	1	0
Category C - Exempt from DAS	8	2	0	0
Hand Gear A Permit -only	156	45	9	3
Hand Gear B Permit - only	1034	51	4	1
Party/Charter Permit - only	305	3	42	0
Hand Gear A and Party Charter Permit	5	0	9	0
Hand Gear B and Party Charter Permit	330	6	56	1
Total	3216	858	127	9
Note: The total unique participating vessels of is equal to the sum of column 2 and 3 less column 4.				

Table 74: Summary of Affected and Participating Small Entities by Permit Class for Fishing Year 2004.

Commercial Fishing Vessel Impacts

The revised preferred alternative would implement several regulatory changes for FY2006. These changes (described in Section 2.0 of the addendum to the EA and Sections 5.2 through 5.7 of the EA) would affect both vessels fishing for groundfish either through changes in DAS counting or trip limits or, for most vessels, both. Based on FY2004 data, the revised preferred alternative would affect 858 participating commercial groundfish vessels. In addition to these changes, the revised preferred alternative would also affect vessels that may participate in the Eastern U.S./Canada Haddock SAP and/or the Regular B DAS Program. These programs, along with the DAS Leasing Program are designed to provide vessels with additional fishing opportunities. Participation is voluntary in these programs. For this reason, the impact on any given small entity is difficult to anticipate, so a qualitative assessment of the potential impact of changes to these programs is discussed separately.

The primary objective of the revised preferred alternative is to reduce F on several stocks from fishing on a Category A DAS. A detailed analysis of the economic impacts of these measures by home port state, vessel length, gear used, dependence on groundfish, and gross sales is provided in Section 3.4 of the addendum and portions of Section 8.1.5 of the EA. The latter analysis with elaboration is incorporated below.

Since SBA size standards are based on gross sales, participating vessels were subdivided into classes based on sales of all seafood products. While collection of operating costs has improved the ability to estimate returns net of these costs, collection of fixed costs has not yet been initiated. This means that it is still not possible to ascertain whether there are meaningful differences or potential returns to scale affecting profitability and financial viability by level of gross sales. For this reason, size classes were based on quartiles of the distribution of all vessels that participated in the groundfish fishery during FY2004. This resulted in the following intervals for size

classes, $0 to $66,999, $67,000 to $164,999, $165,000 to $319,999, and $320,000 and above.

Economic impacts on vessels were estimated using the CAM which takes into account potential adaptations to changes in fishing regulations. Inclusion of operating cost data meant that the objective function seeks to maximize the value of revenues net of operating costs. In this manner, the model result provides an estimate of each vessel's "best" allocation of fishing effort for a fishing year in the face of more restrictive measures. The economic impact of the regulations is measured in relative terms by comparing the modeled net return under a status quo condition with that of the regulatory changes. Any vessel that landed groundfish over a four-year period is a candidate to be included in the CAM regardless of whether they hold a limited or an open access permit. However, due to missing or incomplete data in the VTR records, some vessels were excluded. For this reason, the vessels included in the CAM are viewed as representative of all participating vessels.

Vessels with highest gross sales (more then $320K) of all species were estimated to have the lowest losses in annual total net return (Table 75). Ninety-percent of vessels in this category would incur a loss in net return of at least 2 percent, and 10 percent of these vessels would incur losses of 29 percent or more. At bottom two gross sales intervals (i.e., sales of $165 thousand or less), the estimated impacts were almost identical at all percentiles.

Gross Sales (Quartiles)	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Less than $67K	-33%	-25%	-13%	-5%	0%
$67K to $165K	-31%	-25%	-14%	-6%	-2%
$165K to $320K	-28%	-23%	-14%	-7%	-2%
More than $320K	-29%	-22%	-13%	-6%	-2%

Table 75: Revised Preferred Alternative Impacts on Total Net Returns to Vessel Owner and Crew by Gross Sales Quartiles for FY2004.

These results indicate that of the 858 participating commercial fishing vessels, more than 80 percent may be expected to incur at least some reduction in net return in FY2006 compared to FY2004-05 levels. One-half of all participating vessels would be expected to have net returns reduced by at least 13 percent of 2004 net returns and 25 percent (215) of all participating vessels may incur losses in net return that would exceed 22 percent. Based on these findings, the revised preferred alternative would have a significant impact on a substantial number of small entities. Therefore, for purposes of the Regulatory Flexibility Act, the revised preferred alternative is determined to have a significant impact on a substantial number of small commercial fishing vessels.

Mitigating Measures

Several programs were implemented through Amendment 13 and in subsequent framework actions that were designed to offset some of the impacts of the Amendment 13 implementing regulations. Most of these measures would not be changed with this revised preferred alternative but some would be. Specifically, the Regular B DAS Program would be modified by reducing the number of DAS allocated to the first quarter of the fishing year from 1,000 to 500. Use of Regular B DAS would also be restricted to the U.S./Canada Management Area and vessels would also be required to use a separator

trawl or gear with equivalent performance standards to that of the separator trawl. Further, both GB yellowtail flounder and GB winter flounder would be added as stocks of concern with trip limits of 100 pounds per DAS while fishing on a Regular B DAS. In addition to the changes in Regular B DAS, the revised preferred alternative would also delay the start of the Eastern U.S./Canada Area Haddock SAP and would make changes to offer vessels fishing in the Eastern U.S./Canada Area with improved flexibility to fish inside and outside of the area.

During FY2004, catch rates of cod in the Eastern U.S./Canada Area Haddock SAP during the months of May and June were sufficient to close the SAP well before the allowable TAC for haddock could be harvested. Delaying the start date for the Eastern U.S./Canada Area Haddock SAP would be expected to reduce the amount of cod taken in the SAP and would allow for more trips to be taken to the SAP resulting in an increase in the amount of harvested haddock. Therefore, this measure would likely provide greater economic opportunity to small commercial fishing entities than if the regulation were left unchanged.

The revised preferred alternative would modify the rules for fishing inside of the U.S./Canada Management Area. Instead of implementing differential DAS counting in this area, the revised preferred alternative implements trip limits for GB winter flounder and white hake instead. This revision allows vessels to continue to target healthy groundfish stocks on GB without incurring the costs associated with decreased opportunity to fish for groundfish as a result of differential DAS counting. The proposed action also addresses a safety concern caused by the Amendment 13 restriction that vessels fishing in the Eastern U.S./Canada Area cannot fish in any other area. If worsening weather is forecast, the vessel captain has only two choices: end the trip early or continue to fish in the Eastern U.S./Canada Area. The vessel operator cannot "hedge his bets" by choosing to fish closer to shore. The risk is that fishermen will keep fishing in the area until it is too late to evade a rapidly advancing storm front. This measure would allow fishermen to behave in a more prudent manner and would provide needed flexibility to adapt to both weather conditions as well as respond to potential economic advantages in cases where fishing may be poorer than anticipated. In these cases, vessel operators may find it to their advantage to leave the Eastern U.S./Canada Area and fish more profitably elsewhere.

The potential economic impact of the Regular B DAS Program was discussed in detail in Section 8.1.5. That analysis suggests that the revised preferred alternative changes may diminish the extent to which the program will improve economic opportunities for commercial fishing vessels compared to the Regular B DAS Pilot Program implemented under FW 40A. Restricting the program to the U.S./Canada Management Area under this preferred alternative may put smaller vessels (in terms of physical size) at a disadvantage relative to larger vessels due to the distance from shore that vessels would have to traverse to access the area. The requirement for trawl vessels to use the separator trawl means that in order to participate, trawl vessels would be required to bear the added cost of acquiring new gear or incurring the expense of modifying existing gear. Vessels operating at the brink of break-even may not be able afford this added expense.

Perhaps the most significant change to the Regular B DAS Program is a consequence of declaring both stocks of yellowtail and winter flounder on GB stocks of

concern. From an economic standpoint, the consequences are two-fold. First, revenue from the sale of these two species will be dramatically reduced as the incidental TAC would be set at levels that would be nearly ten times lower than observed landings during FY2004. Second, available data indicate that catch rates of GB winter flounder may be sufficient to result in closure of the area to Regular B DAS well before the quarterly allocation of Regular B DAS has been used. Unless the separator trawl also reduces catches of winter and yellowtail flounders in addition to cod, the estimated revenues from the Regular B DAS Program in FY2006 may be as much as two-thirds less than what was observed during the pilot program.

Impacts on Party/Charter Vessels

A total of 143 different party/charter vessels took at least one trip in the GOM that also landed cod. The revised preferred alternative would implement a seasonal prohibition on retention of cod from November through March and would increase the minimum size from 22 to 24-inches. A more detailed discussion of the potential impacts of these changes is presented in Section 8.1.5. Small party/charter fishing businesses would be affected by these changes through any potential reductions in passenger demand for recreational party/charter fishing trips. A change in demand for fishing trips is difficult to assess. The fact that passenger demand did not appear to change at all after both the minimum size was increased and a bag limit were previously imposed for the first time on party/charter anglers provides some indication that passenger demand may not be sensitive to the size limit change alone.

The seasonal prohibition on possession of cod would be likely to affect passenger demand if cod is a preferred target species even if fishing for alternative groundfish species (primarily haddock) would still be allowed. The economic impact of the seasonal prohibition would have no impact of most party/charter operators since only 25 of the 143 affected vessels actually took any trips during the proposed season. Of these 25 vessels, only 2 took passengers for hire exclusively during the duration of the proposed seasonal prohibition, and the reduction in passenger fees on the other 23 vessels was estimated to range from less than 1 percent to a high of 29 percent.

The number of adversely affected party/charter entities represents about 17 percent of participating party/charter vessels. However, the number of passengers carried by these vessels during the proposed seasonal prohibition represented only about 2 percent of the market for party/charter passengers that landed cod in the GOM during FY2004. For this reason, the revised preferred alternative is not likely to affect a substantial number of small party/charter operations since the impact of these vessels would have only a small impact on the competitive market for recreational fishing passengers.

Other Regulatory Flexibility Requirements

The revised preferred alternative is expected to be controversial because many members of the fishing industry believe that the measures implemented by Amendment 13 have not been given sufficient time to reduce F as projected and, therefore, additional measures to reduce F may not be necessary. The recreational sector does not believe that F reductions for their sector for GOM cod should be commensurate with the reductions

required of the commercial sector. Members of the fishing industry may object to the fact that some of the measures in this preferred alternative differ substantially from those currently proposed by the Council in Framework Adjustment 42. Lastly, some members of the Council believe that the delay in the implementation of FW 42, which necessitates the proposed Secretarial Action, could not have been avoided (and is the fault of NMFS), given the timing of the most recent stock assessment.

10.0 References

Farrington, Marriane. Selectivity and Survival of Atlantic Cod and Haddock in the Northwest Atlantic Longline Fishery. NOAA Project 95-NER-141. July 31, 1998.

Mayo, R.K.; Terceiro, M., editors. 2005. Assessment of 19 Northeast groundfish stocks through 2004. 2005 Groundfish Assessment Review Meeting (2005 GARM), Northeast Fisheries Science Center, Woods Hole, Massachusetts, 15-19 August 2005. U.S. Dep. Commer., Northeast Fish. Sci. Cent. Ref. Doc. 05-13; 499 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026.

Morgan, L.E. and R. Chuenpagdee. 2003. Shifting Gears: Addressing the collateral impacts of fishing methods in U.S. waters, Pew Science Series on Conservation and the Environment, Washington D.C., Island Press, 41 p.

New England Fishery Management Council. 2003. Amendment 13 to the Northeast Multispecies Fishery Management Plan. Final submission: December 18, 2003.

New England Fishery Management Council. 2004. Framework Adjustment 40-A to the Northeast Multispecies Fishery Management Plan. Final submission: July 2, 2004.

New England Fishery Management Council. 2005a. Framework Adjustment 40-B to the Northeast Multispecies Fishery Management Plan. Final submission: February 15, 2005.

New England Fishery Management Council. 2005b. Framework Adjustment 41 to the Northeast Multispecies Fishery Management Plan. Final submission: May 9, 2005.

New England Fishery Management Council. 2006. (Unpublished document) Framework Adjustment 42 to the Northeast Multispecies Fishery Management Plan.

National Research Council (NRC). 2002. Effects of trawling and dredging on seafloor habitat. Ocean Studies Board, Division on Earth and Life Studies, National Research Council. National Academy Press, Washington, D.C. 126 p.

Poppe, L.J., J.S. Schlee, B. Butman, and C.M. Lane. 1989. Map showing distribution of surficial sediment, Gulf of Maine and Georges Bank. U.S. Geological Survey Miscellaneous Investigations Series, Map 1-1986-A.

Stevenson, D, L. Chiarella, D., Stephan, R. Reid, J. McCarthy, M. Pentony, and K. Wilhelm, in press. Characterization of Fishing Practices and the Marine Benthic

Ecosystems of the Northeast U.S. Shelf, and an Evaluation of the Potential Effects of Fishing on Essential Fish Habitat. NOAA/NMFS/NEFSC Tech. Memo. 181.

Transboundary Management Guidance Committee (TMGC). 2005. Stock assessment of Georges Bank (5Zhjmn) yellowtail flounder. Transboundary Resource Assessment Committee Reference Document 2005/04.