FINAL

Amendment 16

To the

Northeast Multispecies Fishery Management Plan

Including a

Environmental Impact Statement
And
Initial Regulatory Flexibility Analysis

Prepared by the
New England Fishery Management Council
In cooperation with the
National Marine Fisheries Service

Date Draft Submitted: April 15, 2009
Date Final Submitted: October 16, 2009
Date Approved:

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COVER SHEET

RESPONSIBLE AGENCIES:

Assistant Administrator for Fisheries
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
Washington, D.C. 20235

New England Fishery Management Council
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PROPOSED ACTIONS:

Adoption, approval, and implementation of Amendment 16 to the Northeast Multispecies Fishery Management Plan.

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ABSTRACT:

The New England Fishery Management Council and the NOAA Assistant Administrator for Fisheries propose to adopt, approve, and implement Amendment 16 to the Northeast Multispecies Fishery Management Plan (FMP) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (the Act). The EIS presents the details of a management program designed to ensure compliance with the Act. It proposes measures to continue formal rebuilding programs for overfished stocks and to end overfishing on those stocks where it is occurring. Appropriate management measures will be adopted to implement these rebuilding programs. The Amendment includes measures that address a wide range of other management issues.

DATE BY WHICH COMMENTS MUST BE RECEIVED: _____

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1.0 Executive Summary

In New England, the New England Fishery Management Council (NEFMC) is charged with developing management plans that meet the requirements of the Magnuson-Stevens Act (M-S Act). The Northeast Multispecies Fishery Management Plan (FMP) specifies the management measures for twelve groundfish species (cod, haddock, yellowtail flounder, pollock, plaice, witch flounder, white hake, windowpane flounder, Atlantic halibut, winter flounder, redfish, ocean pout, and Atlantic wolffish) off the New England and Mid-Atlantic coasts. The FMP has been updated through a series of amendments and framework adjustments. The most recent multispecies amendment, published as Amendment 13, was approved by the National Marine Fisheries Service in March, 2004 and became effective on May 1, 2004. This amendment adopted a broad suite of management measures in order to achieve fishing mortality targets and meet other requirements of the M-S Act. Included in Amendment 13 was a plan to evaluate rebuilding progress and implement measures in fishing year 2009 as necessary to continue rebuilding. This action is the result of that decision.

For several groundfish stocks, the mortality targets adopted by Amendment 13 represented substantial reductions from existing levels. For other stocks, the mortality targets were at or higher than existing levels and mortality could remain the same or even increase. Because most fishing trips in this fishery catch a wide range of species, it is impossible to design measures that will selectively change mortality for individual species. The management measures adopted by Amendment 13 to reduce mortality where necessary were also expected to reduce fishing mortality unnecessarily on other, healthy stocks. As a result of these lower fishing mortality rates, yield from healthy stocks is sacrificed and the management plan may not provide optimum yield - the amount of fish that will provide the greatest overall benefit to the nation. Amendment 13 created opportunities to target these healthy stocks. The FMP restricts the number of days that vessels can fish by allocating each limited access permit a specific amount of days-at-sea (DAS). Amendment 13 further defined three categories of DAS. The DAS categories are:

- Category A: These DAS can be used to target any regulated groundfish stock, subject to the restrictions on gear, areas, and landing limits that are defined by the FMP.
- Category B: These DAS are used to target healthy groundfish stocks – that is, stocks that are not overfished and that are not subject to overfishing. Programs to use Category B DAS prescribe specific conditions for their use.
- Category C: These DAS cannot be used, but remain associated with a permit. As stocks rebuild, in the future some of these DAS may be re-allocated into other categories and may be used.

Since the adoption of Amendment 13, four framework adjustment actions (Frameworks 40A, 40B, 41, and 42) were adopted specifically to address groundfish fishing issues. The earlier frameworks created opportunities to use Category B DAS in Special Access Programs or through the Category B (regular) DAS Pilot Project in order to target healthy stocks. Framework 42, on the other hand, was a more extensive action that imposed major changes to the fishery. Some of the changes included:

- Adoption of a Georges Bank yellowtail flounder rebuilding strategy
- Implementation of differential DAS counting in Southern New England and the Gulf of Maine
- Changes in trip limits
- A change in ratio of A DAS and B DAS allocations and extension of the B DAS program paired with a reduction in the total number of days that could be used
- Changes to Special Management Programs
- Establishment of the GB Cod Fixed Gear Sector
- Extension of the DAS leasing program and modifications to the DAS transfer program
- Mandatory installation of a Vessel Monitoring System (VMS) for all limited access DAS groundfish vessels
- Changes in gear standards.

Because of delays in developing this amendment, the proposed management measures were not implemented on May 1, 2009. As a result, the Secretary of Commerce announced interim measures that took effect on May 1, 2009, and will remain in effect until May 1, 2010 when Amendment 16 is implemented.

Proposed Action

This action implements a broad range of measures designed to achieve mortality targets, provide opportunities to target healthy stocks, mitigate (to the extent possible) the economic impacts of the measures, and improve administration of the fishery. Details of the measures summarized below can be found in section 4.0. The measures being considered associated with major changes to management of the fishery include:

- New status determination criteria developed by the New England Fishery Science Center (NEFSC) during its 2008 assessment are adopted, as are control rules for setting Acceptable Biological Catch (ABC). Revisions to mortality targets to achieve rebuilding based on the recent stock assessments are also implemented. Formal rebuilding programs are proposed for witch flounder, GB winter flounder, pollock, northern windowpane flounder, and Atlantic wolffish.

  The revised status determination criteria adopt the best available science as the basis for the management programs. These criteria identify the target biomass levels (usually SSBMSY or its proxy) as well as the limit fishing mortality rates (usually FMSY or its proxy) for all multispecies stocks. When combined with estimates of current stock size, this information is used to establish fishing mortality rates that will comply with statutory requirements to prevent overfishing and/or rebuild overfished stocks. For overfished stocks, the mortality targets are designed to accomplish the rebuilding strategy adopted by the Council in Amendment 13, FW 42, or this action. Mortality targets are also constrained by the adopted ABC control rules, so in the absence of more precise estimates of uncertainty, fishing mortality rates are constrained to no more than 75 percent of FMSY (or its proxy). Table 1 summarizes stock status and rebuilding periods that are targeted by this Amendment. The management measures are designed to meet these objectives.

  Once the desired fishing mortality rates are known, an estimate is made of the changes in fishing mortality needed to achieve the desired rates. In some cases a rebuilding mortality cannot be determined because the stock projections are considered unreliable. The target fishing mortality rates used in the preparation of this amendment are shown in Table 2. Stock projections for SNE/MA winter flounder indicate that the stock cannot be expected to rebuild by 2014 even in the absence of all fishing mortality. This amendment targets a fishing mortality rate as close to 0 as possible for this stock.

Table 1 - Stock status summary and targeted rebuilding dates (based on GARM III, DPWG). Bold-faced target dates are adopted in this action.
(1) Overfishing status based on GARM III. Recent assessments (TRAC 2009) indicate overfishing is no longer occurring on this stock.

Species	Stock	Overfishing?	Overfished?	Rebuilding Date
Cod	GB	Yes	Yes	2026
Cod	GOM	Yes	No	2014
Haddock	GB	No	No	Rebuilt
Haddock	GOM	No	No	Rebuilt
Yellowtail Flounder	GB	Yes(1)	Yes	2014
Yellowtail Flounder	SNE/MA	Yes	Yes	2014
Yellowtail Flounder	CC/GOM	Yes	Yes	2023
American Plaice	GB/GOM	No	No	2014
Witch Flounder		Yes	Yes	***2017***
Winter Flounder	GB	Yes	Yes	***2017***
Winter Flounder	GOM	Unknown	Unknown	
Winter Flounder	SNE/MA	Yes	Yes	2014
Redfish		No	No	2051
White Hake	GB/GOM	Yes	Yes	2014
Pollock	GB/GOM	Yes	Yes	***2017***
Windowpane Flounder	GB/GOM	Yes	Yes	***2017***
Windowpane Flounder	SNE/MA	Yes	No	2014
Ocean Pout		No	Yes	2014
Atlantic Halibut		No	Yes	2055
Atlantic Wolffish		Unknown	Yes	

Table 2 – Summary of rebuilding reductions needed to achieve desired fishing mortality.

Species	Stock	2007 Fishing Mortality	Targeted Fishing Mortality (either $F_{rebuild}$ or 75% of F_{MSY})	2008 F from 2008 Estimated Catch	% Change in F necessary to achieve targeted mortality	% Change in Exploitation
Cod	GB	0.300	0.184	0.410	-55%	-50%
Cod	GOM	0.456	0.18	0.300	-40%	-37%
Haddock	GB	0.230	0.26	0.079	229%	**202%**
Haddock	GOM	0.350	0.32	0.250	28%	24%
Yellowtail Flounder	GB	0.289	0.109	0.130	-16%	-15%
Yellowtail Flounder	SNE/MA	0.413	0.072	0.120	-40%	-39%
Yellowtail Flounder	CC/GOM	0.414	0.18	0.289	-38%	-34%
American Plaice	GB/GOM	0.090	0.14	0.099	41%	39%
Witch Flounder		0.290	0.15	0.296	-49%	-46%
Winter Flounder	GB	0.280	0.20	0.131	49%	48%
Winter Flounder	GOM	0.417	N/A	Unk	n/a	Unk
Winter Flounder	SNE/MA	0.649	0.000	0.265	-100%	-100%
Redfish		0.005	0.03	0.008	275%	271%
White Hake	GB/GOM	0.150	0.084	0.065	29%	28%
Pollock	GB/GOM	10.464	4.245	15.516	-73%	-73%
Windowpane	GOM/GB	1.960	n/a	n/a	n/a	
Windowpane	SNE/MA	1.850	n/a	n/a	n/a	
Ocean Pout		0.380	n/a	n/a	n/a	
Atlantic Halibut		0.065	0.044	0.060	-27%	-26%
Atlantic Wolffish		Unk		Unk	n/a	

- *Annual Catch Limits (ACLs) and Accountability Measures (AMs*): Revisions to the M-S Act in 2006 require the Council to determine ACLs and AMs for each stock in the management complex. This action implements a process for calculating an ACL in addition to the Overfishing Level (OFL) and Acceptable Biological Catch (ABC) for each stock. Recommendations for these figures will come from the Plan Development Team (PDT), the ABC is set by the Science and Statistical Committee, and the Council will approve final ACL numbers. ACLs may be broken into sub-components for different segments of the fishery. Two AM options are adopted for the commercial vessels that do not join sectors. For Fishing Years (FY) 2010 and 2011, DAS reductions and/or more strict differential DAS counting would be put into place in the year following an ACL overage. For FY 2012 and beyond, a "hard TAC" backstop is adopted, under which the fishery will be suspended upon reaching the year's ACL for a stock. For the recreational fishery, AMs under consideration include adjustments to season, adjustments to minimum size, or adjustments to bag limits. Separate AMs will be determined for the private boat and party/charter components of the recreational fishery, and AMs will be implemented at the end of the year following a year with an

overage. A three-year average of recreational catch will be compared to a three-year average of the ACL to determine whether an overage has occurred.

- *Implementation of Sectors:* Additional sectors for the commercial fishery are implemented by this amendment. Seventeen new sectors are proposed throughout the New England region. Sectors are self-selecting and largely self-regulating. Administrative measures revised to support sector implementation include methods for drafting and submitting formation proposals, operations plans, and sector monitoring plans; revise enforcement provisions, and clarification of the interaction of sectors with Special Management Programs. Sectors are required to submit supporting NEPA documents with their application and Operations Plan. Any changes in fishery regulations or fishing practices that may result on the basis of sector-based management will be addressed in the regulations that implement a particular sector, and in the EIS or EA corresponding to the creation or continuation of that sector. Such NEPA documents prepared by the sectors (an EA or EIS) will be tiered from the Amendment 16 EIS.

  The sectors will receive exemptions from many of the common pool effort control measures in exchange for a sector TAC for each species in the management plan. These TACs are called Annual Catch Entitlements, or ACE. The sectors conduct fishing activity according to their own business plans. In order to assure that sector ACEs are not exceeded, a new system of at-sea and dockside catch monitoring is proposed. It is proposed that a sector be able to carry up to 10 percent of unused ACE forward into the next fishing year, and sector can exchange ACE with other sectors.

  For each permit that is eligible to join a sector, the permit's Potential Sector Contribution (PSC) is calculated. The ACE that is allocated to a sector is based on the sum of the PSCs for the permits that join the sector. This action adopts two methods to calculated PSC. For most permits, the PSC for each stock is based on the landing history of the permit for the years 1996-2006. For permits committed to ne of the two existing sectors as of March 1, 2008, the PSC for GB cod is base don landings history for the period 1996-2001. Allocation of resources, including special allocations for the Eastern U.S./Canada area, provisions for sector overages, methods for permit history calculation, and joint and several liability of sectors are also considered.

- *Commercial Fishery Mortality Measures*:
  - *Option 3A* is adopted to control fishing mortality from commercial vessels that do not join sectors. This is a suite of measures that would eliminate differential DAS counting areas, reduce Category A DAS by 50 percent from the FW 42 allocations, and count all DAS in 24-hour increments. It also adopts restricted gear areas where fishing is only allowed using specific gear that should minimize the catch of rebuilding stocks. The category A/Category B DAS split that would result is 27.5%/72.5%. Most other current measures would remain, including seasonal and rolling closures and gear requirements. Trip limits are modified. Landing windowpane flounder, ocean pout, and SNE/MA winter flounder is prohibited.
  - A pilot program is proposed to facilitate targeting GOM haddock with six-inch gillnets. This program has a limited season and other requirements designed to facilitate monitoring.
  - The minimum size for haddock is reduced to 18 inches.

- *Recreational Fishery Measures*:

  - A specific allocation of GOM cod and GOM haddock between the commercial and recreational fisheries is adopted, as is guidance for considering allocations for other stocks in the future. An allocation will not be made if the recreational harvest, after accounting for state waters catches outside the management plan, is less than five percent of the removals. In those cases that meet the requirements to establish an allocation, a defined time period will be used to calculate the allocation.

- This action also removes the requirement that recreational fishermen be limited to two hooks per line.
- It allows recreational fishermen to land fillets with most of the skin off except for two square inches of skin on the fillet.
- In order to reduce recreational mortality on GOM cod, it extends the closed season for two weeks into April.
- The minimum size for haddock is reduced to 18 inches.

Other measures being adopted by the amendment include the following:

- Atlantic wolffish is added to the management unit. A description of the stock and status are included, as well as status determination criteria and essential fish habitat (EFH. This action prohibits retention of the wolffish by all commercial vessels and recreational vessels, due to its low stock size. This prohibition is expected to contribute to rebuilding because research shows wolffish have a high survival rate when discarded from trawl gear.

- An increase in the minimum size of Atlantic halibut is adopted, bringing the size to 41 inches, in order to match the median length at maturity for female haddock in the Gulf of Maine. This applies to both commercial and recreational fishing activity.

- The conservation tax on DAS transfers is eliminated, and permits in the confirmation of permit history (CPH) category no longer need to be activated in order participate in the DAS leasing or transfer programs. The cap on the number of DAS a permit can lease is removed.

- The periodic adjustment process is modified so that all measures adopted can be adjusted on a framework action.

- This action will allow a vessel to simultaneously hold a limited access scallop and multispecies permit, even of the vessel did not qualify for a multispecies combination permit. This would allow a vessel to possess a both permits even if the scallop dredge vessel did not qualify for a limited access multispecies vessel combination permit.

- Additional reporting requirements are adopted to facilitate the monitoring of ACLs and sectors. One requirement is area-specific reporting in which any vessel will need to declare in which of four broad areas it will fish so that all groundfish catch may be allocated to the appropriate stock. In order to link this information on area fished and catch to dealer data, each vessel operator will be required to report a VTR serial number for the trip via VMS at a time specified by NMFS. Also, for non-sector vessels in the commercial fishery, a discard rate, by gear, will be determined and applied to the landings for each trip. NMFS may apply this discard estimate in one of two ways: either based on the total landings of a stock, by gear, or on a trip-by-trip basis. The discard rate will be based by either the most recent assessment for the stock, using a gear-specific estimate if available, or on observer data for the previous year.

- Special management programs are also modified. Category B DAS can no longer be used to target pollock. The CAI Hook Gear Haddock SAP will have an extended season and expanded area. The Eastern U.S./Canada Haddock SAP is reauthorized indefinitely, with the additional rule that trawl gear fishing in the SAP can use codends with a minimum mesh size of six inch square or diamond mesh. The CAII Yellowtail Flounder SAP is modified to allow targeting of GB haddock even when the area is not open for targeting yellowtail flounder. Finally, the SNE/MA Winter Flounder SAP is suspended until stock conditions warrant its re-implementation.

- The Council adopted as a policy that catch history will not accrue to any vessel, permit, or component of the fishery after implementation of Amendment 16.

Summary of Environmental Consequences

The environmental impacts of this action are discussed in detail in section 7.0. Estimating the impacts of the Proposed Action is difficult because of the complexity of the measures. This action essentially results in the commercial groundfish fishery being managed under two different regimes: sectors and effort controls. The impacts will depend on how many vessels choose to operate in each. While there is a current estimate of the maximum number of vessels that will be in sectors, the final actual number will not be known until the start of Fishing Year 2010 (FY 2010) because vessels can choose to fish outside of sectors until that date.

Biological impacts are described in section 7.2, impacts on endangered and other protected species are described in section 7.3, impacts on essential fish habitat are described in section 7.4, the economic impacts are described in section 7.5, and social impacts are described in section 7.6. Cumulative effects are described in section 7.8. Summaries of the impacts are provided in the following paragraphs.

Biological Impacts

The complex suite of measures that constitutes the Proposed Action is designed to achieve the rebuilding objectives for the Northeast Multispecies fishery. The most important biological impact of the proposed measures is that they will control fishing mortality on Northeast Multispecies stocks in order to prevent (or end) overfishing and rebuild overfished stocks. The critical measures for these impacts are the adoption of revised status determination criteria, the identification of new mortality targets based on those criteria (including the adoption of new formal rebuilding programs where required), the design of controls on fishing mortality for the commercial and recreational components of the fishery, and the adoption of an Annual Catch Limit (ACL) and Accountability Measure (AM) system.

The fishing mortality targets identified in the amendment are expected to meet almost all rebuilding targets consistent with the adopted rebuilding strategies. In some cases, because the rebuilding mortality is actually higher than the mortality called for by the ABC control rule, rebuilding of the stock may be achieved earlier than called for by the rebuilding program. In the case of SNE/MA winter flounder, the stock will not rebuild by the by the end of the period even in the absence of all fishing mortality; the expected impacts of the measures indicate that the stock should rebuild by 2017. Table 3 below summarizes the estimated rebuilding dates *should the mortality targets of this amendment be achieved*. Actual rebuilding dates may differ if mortality targets are not achieved and if observed recruitment, selectivity, weight-at-age, etc. does not match the assumptions used in the projections.

Table 3 – Expected dates for achieving rebuilding targets should mortality targets be achieved
1. There are two assessment runs for GB yellowtail flounder that give different results.
2. Projections are unreliable.

Species	Stock	Expected Rebuilding Date (Probability)
Cod	GB	2026/50%
Cod	GOM	2010
Haddock	GB	NA (rebuilt)
Haddock	GOM	NA (rebuilt)
Yellowtail Flounder	GB	2012(75%)/2015(77%)[1]
Yellowtail Flounder	SNE/MA	2014/50%
Yellowtail Flounder	CC/GOM	2014/61%
American Plaice	GB/GOM	2011/73%
Witch Flounder		2015/75%
Winter Flounder	GB	2016/76%
Winter Flounder	GOM	NA (status unknown)[2]
Winter Flounder	SNE/MA	2017/85%
Redfish		2012/50%
White Hake		2014/50%
Pollock		2017[2]
Windowpane	GOM/GB	Unk[2]
Windowpane	SNE/MA	Unk[2]
Ocean Pout		Unk[2]
Atlantic Halibut		2055/50%
Atlantic Wolffish		Unk[2]

The amendment proposes measures to attain the target fishing mortality rates. For commercial fishing vessels there are two approaches to control fishing mortality. The most straightforward is that the amendment expands the use of sectors that have their catch limited by a quota. As long as quotas are set consistent with the target fishing mortality rates and sectors are adequately monitored so that catch does not exceed the allocated quota, target mortality should be achieved. For vessels that do not choose to join a sector, the Proposed Action uses the effort controls developed in Option 3A. The effect of these measures on fishing mortality depends on how many vessels do not join sectors. Since this information is unknown, the measures were analyzed as if all commercial groundfish vessels remained outside of sectors and were subject to effort controls. It is possible some permit holders may base their decision on sector membership on the choice of an effort control alternative. This means that there is more uncertainty over the impacts of the effort control measures than when analyzed in previous management actions. Second, there are some elements of the options that cannot be reliably quantified. For example, the use of restricted gear areas in two of the options may result in additional changes in fishing mortality but the magnitude and direction are uncertain.

The proposed measures are expected to change exploitation as shown in Table 4. The analytic tool used to estimate these changes cannot provide estimates for halibut and wolffish. As can be seen from this table, the effort controls that are adopted are expected to achieve the needed reductions for all stocks except SNE/MA winter flounder, where they will not eliminate all fishing mortality. There is, however, considerable uncertainty over these estimates because sector participation is unknown. It is important to note, however, that with the Proposed Action the number of allocated DAS will be less than the DAS used in recent fishing years.

Table 4 – Option 3A changes in exploitation (needed difference for pollock reflects impacts of changes to the Category B regular DAS program)

Spec	AREA	Needed Difference	Proposed Action - Option 3A % Difference
COD	GBANK	-50%	-54%
COD	GM	-37%	-52%
HADDOCK	GBANK	202%	-53%
HADDOCK	GM	24%	-54%
WINTER	GBANK	48%	-52%
WINTER	GM		-45%
WINTER	SNEMA	-100%	-67%
PLAICE	ALL	39%	-56%
WITCH	ALL	-46%	-56%
WHK	ALL	28%	-63%
WINDOWPANE	NORTH		-59%
WINDOWPANE	SOUTH		-61%
YTF	CCGOM	-34%	-57%
YTF	GBANK	-15%	-59%
YTF	SNEMA	-39%	-39%
POLLOCK	ALL	-66%	-61%
REDFISH	ALL	271%	-62%

For recreational fishing vessels the proposed measures are only designed to reduce fishing mortality on GOM cod. The needed reduction in mortality for GOM cod is 40 percent, but this is mitigated for the recreational fishery by the decision to provide a separate allocation to the commercial and recreational components of the groundfish fishery. Because the recreational component in recent years has been catching less than its proposed allocation, the reduction needed is only 25 percent. Data limitations prevent an exact estimate of the impacts of the proposed two-week extension of the season when GOM cod cannot be landed by recreational vessels. If the season was extended for the entire month of April, the reduction would be expected to be 40 percent, so the two-week extension is expected to achieve about half that.

The final key component for meeting mortality targets is the adoption of an ACL and AM system for this fishery. By defining ACLs on a periodic basis, catch levels are adopted that are consistent with rebuilding objectives. Unlike the target TAC system used in the past, these ACLs are linked to AMs that automatically adjust management measures to ensure that catches remain below target levels. For the commercial fishery in FY 2010 and 2011, vessels in sectors will be subject to quotas while vessels not in sectors will be subject to DAS adjustments (primarily through differential DAS counting in appropriate stock areas). Beginning in FY 2012 the entire commercial fishery will be subject to quotas. Recreational fishery AMs will also control recreational catch through the use of bag limits, seasons, and minimum size limits.

There are numerous other measures included in the action; many of these are administrative in nature (changes in reporting requirements, the periodic adjustment process, etc.) and are not expected to have any biological impacts, others may have relatively minor effects. For example, changes to the CAI Hook Gear Haddock SAP, extending the Eastern U.S./Canada Haddock SAP, modifying the CAI Yellowtail Flounder SAP, and reducing the minimum size for haddock are all likely to increase fishing mortality on GB haddock, but will not result in overfishing. Incorporating Atlantic wolffish into the management unit and prohibiting its possession should reduce fishing mortality for this stock.

Essential Fish Habitat (EFH) Impacts

No adverse impacts on EFH are expected to result from the Proposed Action. The primary impact on EFH expected to be beneficial to EFH is the overall reduction in effort due to the reduction in Category A DAS

and 24-hour clock for non sector vessels, and the expected effort reduction as a result of more efficient operations for non-sector vessels. These reductions are expected to benefit habitat by reducing the interaction of groundfish fishing vessels with EFH. Other changes are expected to have either neutral or beneficial effects on EFH.

Impacts on Endangered and Other Protected Species
None of the measures proposed in Amendment 16 are likely to produce impacts to protected species beyond those described in previous regulations. While not quantifiable, the impacts are expected to be beneficial as a result of overall reductions in groundfish fishing effort. In the case of the Proposed Action, particular effort reductions will occur in the GOM and in SNE, which are relative high use areas for several large whale species, small cetaceans and pinnipeds, resulting in more distinct benefits to protected resources compared to the status quo.

Economic Impacts
The Proposed Action will affect any commercial groundfish vessel with a limited access permit and a DAS baseline greater than zero. In general, any measure that places limits on fishing effort will have negative economic impacts in the near future, while other measures are designed to mitigate economic stress on the fishery. Sectors in particular are considered to provide economic relief for adversely impacted fishermen since they will gain the ability to make more personal business decisions. Determining the impacts on vessel revenues of the proposed effort control Option 3A is difficult for the same reasons comparing biological impacts is difficult: potential sector membership is unknown and some data are not clearly understood. However, unlike with biological impacts, most of the administrative measures proposed in the amendment (including ACLs and reporting requirements) will have economic effects as they increase management and transaction costs.

The following tables summarize changes in total revenue (Table 5) and groundfish revenue (Table 6) by homeport state under the Proposed Action effort control option for the commercial fishery. For the fishery as a whole, the Proposed Action - Option 3A - has the least impact on total and groundfish revenues of the alternatives to No Action that were considered. These estimates are often greeted with skepticism as under-estimating the true revenue impacts of the large changes in allocated DAS. Many groundfish fishing permits, however, have not used all their allocated DAS even under the restrictive allocations of recent actions and so they are not as affected by the large change as it would appear. In addition, increasing trip limits as proposed will probably benefits many vessels, and removing differential DAS counting areas also mitigates to some extent the DAS reductions for some vessels. While these tables estimate the revenue impacts on the fishery as a whole, impacts on individual vessels can be greater (or less). Generally, vessels that are more dependent on groundfish for a high percentage of total fishing revenues can expect to have larger impacts than indicated here.

Comparing alternatives based on overall impacts does not provide information on the distribution of impacts across the fishery. For this reason the vessel level impacts are broken down into percentile groups, and the average impacts for each group are reported. Examining the impacts in this way reveals that the different alternatives affect fishermen in different ways; there was no single alternative to No Action considered that is best or worst for all vessel categories. Table 7 summarizes vessel level impacts on gross revenues. The Proposed Action - Option 3A - has a broad range of average adverse impacts; one interpretation is that this option has very different impacts on different vessels while within the other options considered the impacts are more similar across different groups of vessels.

Table 5 - Change in Total Revenue (by homeport state)

State	Proposed Action – Option 3A
CT	-11.0%
MA	-11.5%
ME	-8.1%
NH	-15.4%
NJ	-6.3%
NY	-8.0%
RI	-8.3%
Other	-2.7%
Total	-9.8%

Table 6 - Change in Groundfish Trip Revenue

State	Proposed Action – Option 3A
CT	-22.1%
MA	-14.3%
ME	-9.0%
NH	-18.5%
NJ	-23.1%
NY	-28.3%
RI	-22.8%
Other	-8.7%
Total	-15.2%

Table 7 – Comparison of vessel level impacts of gross revenues for effort control options

	Option 3A	
Impact Category	Number of Vessels	Average Adverse Impact
No Adverse Impact	58	-8%
Up to 20th Percentile	91	2%
20th Percentile to Median	135	8%
Median to 80th Percentile	135	15%
Above 80th Percentile	90	36%

Social Impacts

Overall, the Proposed Action is likely to have a negative effect on the important social factors identified by Amendment 13 in the short-term. The further reductions in DAS, 24-hour clock, additional trip limits, and restricted gear areas will make it more difficult for fishermen to maintain daily routines, operate in a safe manner, and maintain a positive attitude towards the management program. Landings and revenues have generally been declining for several years; there should be gradual increases in the next few years if stocks rebuild as expected. The economic impacts of this action communities are expected to be severe and in some cases may threaten the existence of fishing businesses in some communities. Social impacts will be primarily the result of commercial effort control measures and formation of sectors. The impacts will fall most heavily on vessels and communities that are most dependent on groundfish. These tend to be the Maine, New Hampshire, and Massachusetts ports adjacent to the Gulf of Maine, though New Bedford is also a port that will be adversely affected.

There are some communities where the impacts may not be as severe due to elements of the action that attempt to mitigate impacts. The implementation of sectors, the elimination of the DAS transfer tax, and

changes to SAPs may help some vessels and their communities adapt to the restrictions in this action. These benefits may prove localized to small groups of vessels, however, and are unlikely to change the overall perception that the social impacts of this action, in the short term, are largely negative. In part, the extent to which fishery participants will join sectors will determine overall social impacts of this action. Sectors provide a way for fishermen to fish more efficiently and with more control over their daily activities. Extensive or increased sector participation may prove beneficial to important social factors as groundfish rebuilding continues. Successful rebuilding of groundfish stocks should lead to future benefits for fishermen and their communities but it is not clear that current fishery participants will reap those benefits.

Cumulative Effects

When considering the long-term positive trends in rebuilding in combination with further effort control measures designed to maintain or achieve sustainable stocks, the cumulative impact of this action would be positive. While the short-term impacts, particularly to the human communities VEC, continue to be negative primarily due to economic losses, in the future as the status of the fishery improves and stocks recover, the industry and communities that rely on fisheries will incur positive impacts.

The long-term trend for cumulative biological impacts has been positive. Among the groups of measures considered in this action (updates to status determination criteria and formal rebuilding programs, fishery program administration, and measures to meet mortality objectives), very few of the alternatives would actually increase effort and among those that do, the increase is often on stocks such as haddock, that are not overfished nor have overfishing occurring.

The primary impact of alternatives in this amendment on protected species is driven by the magnitude and breadth of changes in fishing effort that are required. This also is typically the case for the cumulative impacts to protected species and change in effort was the primary factor used in determining the cumulative impact of the measures. Mostly positive cumulative impacts would be expected as a result of the measures to reduce commercial fishing effort. This is because all of these measures would involve substantial effort reductions which should reduce gear interactions, particularly when factored into past effort reductions and management actions taken through the ESA, MMPA and Magnuson-Stevens Act. Other measures with positive cumulative impacts include the preferred alternatives to implement several additional sectors and modify existing sectors, which should lead to more efficient fishing operations and ultimately fewer gear interactions with protected species.

While the environmental impacts analysis of this document is focused on the direct and indirect impacts of this action on EFH, the cumulative effects assessment also considers non-fishing impacts such as those summarized in Appendix I and factored into the baseline and summarized in Table 302. Overall, the impact of non-fishing factors is difficult to measure. Because many groundfish species move throughout the entire management area and spend a small or no portion of their life in the near-shore areas where non-fishing impacts are most acute, the effects are thought to be insignificant when viewed in the context of cumulative impacts. However, species with greater inshore habitat reliance are likely more negatively impacted. Another non-fishing factor that appears to have a negative impact on groundfish and other fisheries resources is climate change. Although it is not possible to factor in the exact role that climate change may be having on the groundfish fishery, when impacts such as increased acidification and rising water temperatures are factored into the unsustainable mortality that has occurred at times in the past, it is possible that the combined cumulative impacts have been negative.

Unlike other Valued Ecosystem Components VECs, there are very few measures that do not impact human communities in some way. For measures found under updates to status determination criteria and formal rebuilding programs, revised criteria are thought to have a positive cumulative impact because when combined with past and current actions, overall revenues should increase when compared to the cumulative impacts from the corresponding no action alternatives. Measures to control commercial fishery effort would have the greatest negative cumulative impact, along with constrictions on recreational catches of GOM cod

and haddock, an increase in the Atlantic halibut minimum size, and a prohibition on the retention of wolffish. However, the implementation of additional sectors, by providing improved efficiency and flexibility, along with the long-term impact that the implementation of AMs could have on rebuilding and maintaining sustainable stocks, would have positive cumulative impacts.

Alternatives to the Proposed Action

For each case that a measure is proposed, the Council considered the No Action alternative. Many other alternatives or options were considered for each element. These are briefly described below.

- *Revised Status Determination Criteria, ABC Control Rules, and Mortality Targets*: The Council considered not adopting revised status determination criteria and ABC control rules. This alternative does not comply with the M-S Act requirement to use the best available science. The Council also considered not revising mortality targets; choosing that alternative would mean that for many stocks rebuilding requirements would not be met.

- *Annual Catch Limits*: The Council considered not adopting ACLs (the No Action alternative). This would not comply with M-S Act requirements.

- *Atlantic Wolffish*: The Council considered not adding Atlantic wolffish to the management unit. This would not comply with M-S Act requirements to rebuild overfished stocks. Two alternatives were considered for EFH.

- *Sector administration*: The Council considered not revising sector policies (the No Action alternative). In addition, the Council considered not allowing CPH permits to join sectors, not allowing ACE transfers, and different options for enforcement and monitoring requirements. There were three alternatives considered for calculating PSCs (in addition to No Action): one option used landings history and a capacity factor for stocks caught, another used landings history and a capacity factor for all stocks, and a third used landings history and allocated DAS for all stocks.

- *Reporting Requirements*: The Council considered not adopting area-specific reporting requirements, and not accounting for discards when monitoring non-sector vessel catch.

- *Commercial and Recreational Component Allocation*: The Council considered not making an allocation (the No Action alternative). It also considered the period 1996-2006 as the basis for the allocation, and considered making an allocation for Georges Bank cod, Gulf of Maine winter flounder, pollock, and Southern New England/Mid-Atlantic winter flounder.

- *DAS Transfer and Leasing Programs*: The No Action alternative was considered, ,which would have retained the cap on the number of DAS a permit can acquire through leasing, the conservation tax on DAS transfers, and the prohibition that prevented a permit in the CPH category from participating in either program. The Council also considered applying the same conservation tax to DAS leases as is used in the transfer program; and considered removing the conservation tax on DAS transfers only for a defined period.

- *Special Management Programs*: The Council considered the No Action alternative. This included not modifying the Category B DAS program to reflect current stock status, not extending the Eastern U.S./Canada haddock SAP, not expanding the area or season for the CAI Hook Gear Haddock SAP, and not modifying the CAI Yellowtail Flounder SAP.

- The Council considered not modifying the periodic adjustment process, and not allowing the simultaneous possession of a limited access multispecies and scallop permit. The Council also

considered allowing catch history to accrue to the permit that lands the fish after implementation of Amendment 16. All of these are No Action alternatives.

- *Measure to Control Fishing Mortality*:

  - For commercial vessels that do not join sectors, the Council considered the following effort control systems:
    - *No Action*: This would result in a change in the Category A and Category B DAS split (45/55), or an 18 percent reduction in allocated Category A DAS) unless certain conditions are met: overfishing is not occurring on any stock and additional fishing mortality reductions are not needed to rebuild any stock.
    - *Option 2A:* A combination of differential DAS and trip limits on some stocks. The default change in the Category A/Category B DAS split that will be implemented May 1, 2009 is retained. The existing year round, rolling, seasonal, or habitat closed areas would not be modified. Gear requirements while fishing on a Category A DAS would remain in effect. Further measures may be needed to meet pollock rebuilding requirements. In order to meet pollock rebuilding objectives, the Council also considered a different version of this option that would have reduced DAS by 30 or 35 percent, and would have adjusted trip limits and differential DAS counting areas.
    - *Option 4:* A reduction in Category A DAS by 40 percent from FW 42 allocations, paired with the addition of an area in southern New England where only specific gear can be used while fishing on a groundfish DAS. This results in a Category A/Category B DAS split of 33/67. In the gear areas, gear may be restricted to those gears that do not catch yellowtail flounder and winter flounder. Most other current measures would remain, including seasonal and rolling closures and gear requirements. Further measures would have been needed to meet pollock rebuilding requirements.
  - The Council considered requiring trawl vessels to use a net equipped with drop chains in the SNE area by any vessel using a net with a codend of less than six and a half inches. An exception was included for vessels using a net with large mesh panels in the front of the net.
  - The No Action alternative was considered that would have not reduced the minimum size of haddock, and that would not have adopted the GOM Sink Gillnet Haddock Pilot Program.
  - The Council considered not implementing additional sectors and not modifying the two existing sectors.

  - Recreational Measures:
    - The No Action alternative would not have allowed landing of fillets with the skin off, would not reduce the haddock minimum size, and would not alter the season for landing GOM cod.
    - Subject to the decision on the recreational/commercial component allocation, the Council considered increasing the minimum size for GOM cod, reducing the bag limit to six fish, and reducing the season by one month. For GOM haddock, increasing the minimum size to 21 inches, a bag limit of nine fish, and reducing the minimum size to 18 inches and imposing a seven fish bag limit were considered.
    - The Council considered allowing the landing of fillets with the skin off but with fillets meeting the minimum legal size.

  - *Accountability Measures (AMs)*: The Council considered not adopting AMs for either the commercial or recreational fishery. For the recreational fishery, the Council considered two

different processes for implementing AMs. The first would have allowed NMFS to implement AMs without Council input, while the second would have required the Council to submit the AMs to NMFS.

Impacts of Alternatives to the Proposed Action
As already noted, several of the alternatives would not have met current requirements of the M-S Act. Specific impacts are described in section 7.0. Only major biological and economic impacts are highlighted below.

Biological Impacts
Certain measures, such as not adopting the adoption of revised status determination criteria, will have impacts that vary among stocks. For some stocks, the target biomass would be lower than the value in the Proposed Action, however, for others the Amendment 13 value is higher. Not adopting these criteria, and not revising mortality targets to meet them, would mean rebuilding would not be achieved.

Each of the effort control options for the commercial fishery will have different impacts on each stock. With respect to the effort control measures for vessels that do not join sectors, the No Action alternative and Option 4A would not have met the mortality objectives of the amendment. Option 2A would only meet the objectives if it was modified with additional DAS reductions, changes to differential DAS counting areas, and modified trip limits (Table 7).

Table 8 – Summary of changes in exploitation expected from effort control options

Species	AREA	Needed Difference	No Action % Difference	Option 2A Action % Difference	Option 2A W/30% reduction in DAS	Option 2A W/35% reduction in DAS	Option 4 Action % Difference
COD	GBANK	-50%	-17%	-51%	-45.9%	-49.8%	-41%
COD	GM	-37%	-16%	-22%	-46.9%	-50.8%	-34%
HADDOCK	GBANK	202%	-19%	-45%	-42.1%	-46.4%	-42%
HADDOCK	GM	24%	-18%	-22%	-50.4%	-54.3%	-39%
WINTER	GBANK	48%	-19%	-34%	-41.2%	-45.6%	-36%
WINTER	GM		-15%	-14%	-34.1%	-38.8%	-35%
WINTER	SNEMA	-100%	-20%	-73%	-67.5%	-70.3%	-60%
PLAICE	ALL	39%	-16%	-38%	-56.1%	-59.2%	-36%
WITCH	ALL	-46%	-16%	-36%	-52.6%	-56.0%	-37%
WHK	ALL	28%	-17%	-40%	-63.9%	-66.7%	-39%
WIND	NORTH		-19%	-30%	-43.0%	-47.0%	-43%
WIND	SOUTH		-21%	-44%	-43.5%	-48.1%	-56%
YTF	CCGOM	-34%	-18%	-39%	-50.3%	-54.5%	-47%
YTF	GBANK	-15%	-20%	-32%	-37.6%	-42.4%	-41%
YTF	SNEMA	-39%	-18%	-55%	-45.4%	-48.7%	-45%
POLLOCK	ALL	-66%	-17%	-40%	-61.4%	-64.1%	-38%
REDFISH	ALL	271%	-18%	-41%	-63.5%	-66.3%	-39%

Not adopting changes to sector policies, and not implementing additional sectors, would result in a less effective sector management program and fewer vessels operating under the hard quotas adopted by sectors. This would increase the uncertainty associated with achieving mortality targets and could delay rebuilding.

If ACLs and the accompanying AMs were not adopted, the lack of a system to identify appropriate catch levels and rapidly adjust measures should they be exceeded (or to prevent them from being exceeded)

would also make it less likely that rebuilding of groundfish stocks would be achieved, and that overfishing would be ended.

Economic Impacts

With respect to economic impacts of the alternatives to the Proposed Action, there is little doubt that in some instances the No Action alternative would lead to higher revenues for the commercial fishery in the short term. For example, as shown in Table 9 and Table 10, the No Action effort control alternative for non –sector vessels has less impact on total revenues than the other effort control options. Options 2A and 4 have more impacts than the Proposed Action. The No Action alternative would also have fewer economic impacts on recreational vessels in the short term, as opportunities to target GOM cod would not be reduced. But because the No Action alternative would delay or perhaps prevent rebuilding, these short term gains may not exceed the benefits of the rebuilding program.

Table 9 - Change in Total Revenue (by homeport state)

State	No Action	2A	4
CT	-6.1%	-11.7%	-14.8%
MA	-9.7%	-19.6%	-23.1%
ME	-10.6%	-22.4%	-25.8%
NH	-9.6%	-10.3%	-22.0%
NJ	-3.3%	0.5%	-8.3%
NY	-3.6%	-5.5%	-8.8%
RI	-4.5%	-7.5%	-10.7%
Other	-3.2%	-7.3%	-7.9%
Total	-7.7%	-14.7%	-18.5%

Table 10 - Change in Groundfish Trip Revenue

State	No Action	2A	4
CT	-12.3%	-23.4%	-29.7%
MA	-12.1%	-24.5%	-28.9%
ME	-11.8%	-24.8%	-28.6%
NH	-11.5%	-12.3%	-26.4%
NJ	-12.2%	1.8%	-30.4%
NY	-12.8%	-19.5%	-31.1%
RI	-12.4%	-20.8%	-29.5%
Other	-10.3%	-23.4%	-25.1%
Total	-12.1%	-22.9%	-28.9%

If revisions to sector policies were not adopted, and additional sectors were not implemented, then the mitigating benefits of sectors would be available to fewer vessels. While it is accurate that under the No Action alternative sectors would also not be subject to the increased costs of the enhanced sector reporting systems, this would not matter to the fishery as a whole because only the two existing sectors would benefit.