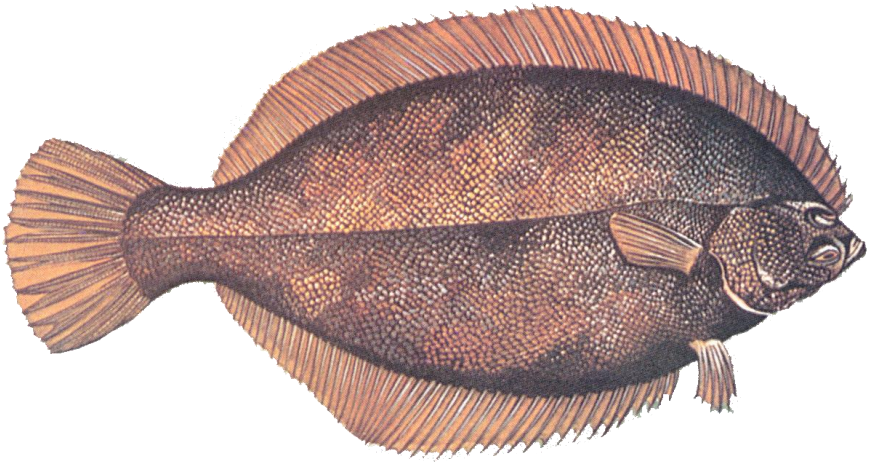
Northeast Multispecies Fishery Management Plan

Secretarial Emergency Action to Revise Fishing Year 2011 Catch Limits for Gulf of Maine Winter Flounder



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Environmental Assessment

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1.0 Executive Summary

The Secretary of Commerce (Secretary) finds that an emergency action, under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), is necessary to increase the fishing year (FY) 2011 annual catch limit (ACL) for Gulf of Maine (GOM) winter flounder, as managed by the Northeast (NE) Multispecies Fishery Management Plan (FMP), as detailed in Section 2.1.2. The principal goal of this emergency action is to respond to recent scientific information updating the status of the GOM winter flounder stock. The updated stock assessment for GOM winter flounder (SAW 52) was completed in June 2011, and indicates that overfishing was not occurring on GOM winter flounder stock in 2010. It cannot be determined whether this stock is overfished at this time because a biomass reference point or proxy could not be determined, and an analytical assessment model was not accepted during SAW 52. However, based on this updated stock assessment, the Science and Statistical Committee (SSC) of the New England Fishery Management Council (Council) recommended, and the Council adopted, substantially higher ACLs for GOM winter flounder starting in FY 2012. To avoid anticipated adverse economic and social impacts that would result from an unnecessarily low FY 2011 ACL, the Council requested that NOAA's National Marine Fisheries Service (NMFS) take emergency action to increase the FY 2011 ACL for GOM winter flounder.

This Environmental Assessment (EA) analyzes the environmental impacts of the emergency action to the FY 2011 GOM winter flounder catch limits for the remainder of FY 2011. This EA compares alternatives, as required under the National Environmental Policy Act (NEPA), to quickly respond to this recent scientific information until such time that the Council can incorporate the new information into the FMP through the approval of Framework Adjustment (FW) 47 to the FMP. If approved, this emergency action would implement the following actions for GOM winter flounder, as described in more detail below: (1) Revise the GOM winter flounder stock status determination criteria, and (2) revise the FY 2011 GOM winter flounder Overfishing Level (OFL), Acceptable Biological Catch (ABC) and Annual Catch Limits (ACLs) for the remainder of FY 2011 (see Table 1).

Pursuant to the MSA, accountability measures (AMs) were implemented under Amendment 16 to the FMP to ensure that catch in the fishery does not exceed the respective ACLs for each groundfish stock, or to address a previous overage and avoid similar overages in the future. To that end, during a particular FY, the Regional Administrator may implement restrictive inseason measures to prevent the catch of GOM winter flounder from exceeding the ACL or may liberalize measures applicable to vessels not fishing in sectors (i.e., common pool vessels) to allow the catch of GOM winter flounder to attain, but not exceed the sub-ACL allocated to common pool vessels. If the common pool catch exceeds the ACL in FY 2011, AMs in the form of day-at-sea (DAS) restrictions will be implemented during the following fishing year (FY 2012). Similarly, vessels fishing in sectors must cease fishing if/when their annual catch entitlement (ACE), or portion of the sub-ACL allocated to individual sectors, for GOM winter flounder is reached. If a sector's catch exceeds its FY 2011 ACE for GOM winter flounder, the amount of over-harvest will be deducted from the sector's GOM winter flounder ACE in FY 2012.

FW 44 to the FMP implemented the following FY 2011 catch limits for GOM winter flounder: An OFL of 570 mt, an ABC of 239 mt, a total ACL of 231 mt, a common pool sub-ACL of 8 mt, and sector sub-ACL of 150 mt (75 FR 18356, April 9, 2010). Because the stock status for GOM winter flounder was unknown at the time, the FW 44 catch limits for GOM

winter flounder were based upon recommendations of the Council's SSC to specify the ABC at 75 percent of recent catches of this stock. Catch of GOM winter flounder as of December 3, 2011, indicated that nearly 52 percent of the FY 2011 commercial fishery sub-ACLs has already been caught. Sectors have caught nearly 53 percent of their sub-ACL for GOM winter flounder. During FY 2010, nearly 75 percent of the annual GOM winter flounder catch was harvested after November. This suggests that if those catch rates were to continue during FY 2011, the groundfish fishery will likely substantially exceed the FY 2011 commercial fishery sub-ACL for this stock by the end of FY 2011 on April 30, 2012. This would result in the AMs described above being triggered during either FY 2011 (area closures or inseason DAS or trip limit adjustments) or during FY 2012 (overage deductions, DAS or trip limit adjustments).

Emergency action to revise the GOM winter flounder catch limits based on updated stock assessment results and SSC recommendations provides timely incorporation of scientific information and enables the fishery to remain open longer. Immediate regulatory action precludes potential disruptions in the fishing industry and substantial loss of income. The EA analyzes 2 alternatives for GOM winter flounder catch limits in FY 2011: (1) No Action (i.e., current status determination criteria and FY 2011 ACLs implemented under FW 44), and (2) the proposed action (updated status determination criteria and increased FY 2011 catch limits to reflect new scientific information). Table 1 below contains the revised status determination criteria and catch specifications for FY 2011 based on the proposed action.

Table 1. Revised GOM Winter Flounder Status Determination Criteria and Catch Levels for FY 2011

Parameter or Catch Level	Fishing Year 2011 Value
Status Determination Criteria: B_{MSY} (biomass associated with maximum sustainable yield)	Unknown
Status Determination Criteria: F_{MSY} (fishing mortality associated with maximum sustainable yield)	0.31 (F_{MSY} proxy, $F_{40\%}$)
Overfishing Level (OFL) of Catch	1,458 mt
Acceptable Biological Catch (ABC)	1,078 mt
Total ACL	524 mt
State Waters ACL subcomponent	163 mt
Other ACL subcomponent	32 mt
Groundfish sub-ACL	329 mt
Sector sub-ACL	313 mt
Common Pool sub-ACL	16 mt

Summary of Environment Consequences

The revision to the status determination criteria and catch limits align current management measures with the best available scientific information. Revision to the FY 2011 ACLs will result in the opportunity for substantially greater amounts of GOM winter flounder catch than under the No Action Alternative, and may result in greater fishing effort and greater catch of other stocks in addition to GOM winter flounder because GOM winter flounder will no longer serve as a constraining stock. The revised level of GOM winter flounder catch for the remainder of FY 2011 is consistent with sustaining the biomass over the long-term when fishing

at a sustainable level of mortality (F_{MSY}). Both scientific and management uncertainty are accounted for in this catch level, so the risks of negative biological impacts have been minimized. The impacts of the proposed action on protected resources will likely track the current trend in fishing effort. That is, an effect of an increase in fishing effort on GOM winter flounder as a result of this action, compared to the No Action Alternative, would be to increase slightly the interactions of groundfish gear with protected resources. The scope of this increase with respect to the overall fishery is expected to be negligible, however, due to constraints on overall fishing effort already implemented in the FMP and current fishing effort that is substantially reduced compared to recent years. Similarly, for essential fish habitat (EFH), an effect of an increase in fishing effort on GOM winter flounder, compared to the No Action Alternative, would be to increase slightly the interactions of groundfish gear with EFH. The scope of this increase with respect to the overall fishery is expected to be negligible as well.

The increased GOM winter flounder ACL under this emergency action would represent an increase of potential revenue of nearly $1.2 million, assuming recent average prices for winter flounder, and assuming that all available GOM winter flounder would be harvested. This estimate of GOM winter flounder revenue is likely high, given the level of GOM winter flounder landings from January through April during previous FYs. However, the economic impact of the revised 2011 GOM winter flounder ACL may be greater than the revenue associated with GOM winter flounder landings alone, because the current groundfish fishery sub-ACL for GOM winter flounder of 159 mt is expected to constrain many sectors from fully utilizing ACLs for other stocks, as suggested by current sector participants, and could result in either an in-season adjustment to the common pool measures, or the triggering of the common pool AM if an overage were to occur. Further, there is evidence that the limited availability of sector ACE for GOM winter flounder is affecting the ACE leasing market for this stock. Limited supply along with increasing demand for GOM winter flounder ACE may be contributing to recently observed increases in the price to lease ACE for this stock. Higher ACE leasing prices for this stock could exacerbate constraints on the harvest of other stocks frequently caught in conjunction with GOM winter flounder. Increased availability of GOM winter flounder ACE may dampen this effect, making procuring additional ACE more affordable. The primary economic benefits of the revised ACL is expected to be associated with reducing the likelihood that an AM would be triggered for the common pool or sectors, and a relaxation of a potential barrier to obtaining higher utilization of economic yield from other stocks. With respect to sector allocations, even increasing the FY 2011 GOM winter flounder ACLs under this emergency action, the common pool and one of the sector (NEFS XII) will still be left with less GOM winter flounder than their respective collective memberships landed during FY 2010. That is, even though the revised aggregate GOM winter flounder sub-ACL is higher than the FY 2010 landings, the ACE for these sectors is still lower than the sector members' FY 2010 combined GOM winter flounder landings. This may be mitigated by also increasing the amount of GOM winter flounder ACE available for lease.

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2.0 Background, Purpose, and Need

2.1 Background

2.1.1 Management of the NE Multispecies FMP

The primary statute governing the management of fishery resources in the U.S. Exclusive Economic Zone (EEZ) is the 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 fishing mortality rate (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 13 species in Federal waters off the New England and MA coasts, which are defined as Atlantic cod, haddock, yellowtail flounder, pollock, American plaice, witch flounder, white hake, windowpane flounder, Atlantic halibut, winter flounder, ocean pout, redfish, and Atlantic wolffish, 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.

The most recent substantial revision to the FMP occurred in May 2010, with the implementation of Amendment 16. Amendment 16 established rebuilding programs for groundfish stocks newly classified as being overfished and subject to overfishing; revised measures necessary to end overfishing; mitigated adverse economic impacts of increased effort controls, including authorization of 17 new groundfish sectors (in addition to the two existing sectors); and implemented FMP requirements and methods for establishing ABCs, ACLs, and AMs for each stock.

Consistent with the MSA and pursuant to the methods for the development of catch limits developed in Amendment 16 to the FMP, the Council developed catch limits, which were also implemented on May 1, 2010, through FW 44 to the FMP. The Council's SSC and the Plan Development Team (PDT) were the two technical bodies involved in the development of that action. The Council submitted the FW 44 document to NMFS on January 15, 2010. NMFS published proposed and final rules for FW 44 in the *Federal Register* on February 1, 2010 (75 FR 5016), and April 9, 2010 (75 FR 18356), respectively. FW 44 was effective on May 1, 2010, the start of FY 2010, and specified the various catch limits for all stocks covered by the FMP, including GOM winter flounder, for FYs 2010 through 2012. FW 44 also implemented other measures that are not directly relevant to this emergency action, and are therefore, not described here. The catch levels specified by FW 44 included OFLs, ABCs, ACLs, and ACL components. The ACL components included sub-ACLs for the common pool and sectors.

The OFL value for a stock is calculated using the estimated stock size for a particular year, and represents the amount of catch associated with F_{MSY}, i.e., the fishing mortality rate that, if applied over the long term, would result in MSY. The ABCs are those recommended by the SSC, and are lower than the OFLs in order to take into account scientific uncertainty in setting

catch limits. The ABC value for a stock is calculated using the estimated stock size for a particular year and, for most stocks, represents the amount of catch associated with 75 percent of F_{MSY}, or the F required to rebuild the stock within the defined rebuilding time period ($F_{rebuild}$), whichever is lower. For other stocks, particularly those with unknown stock status, the ABCs would be determined on a case-by-case basis.

The Council recommends ACLs that are lower than the ABCs in order to account for management uncertainty, consistent with the national standard guidelines. Thus, the total ACL for a stock represents the catch limit for a particular year, considering both biological and management uncertainty, and includes all sources of catch (landed and discards) and all fisheries (commercial and recreational groundfish fishery, state-waters catch, and non-groundfish fisheries). The division of a single ACL value for each stock (for a particular FY) into sub-ACLs and ACL-subcomponents is done to account for all components of the fishery and sources of fishing mortality.

For FW 44, the ABC was sub-divided into fishery components on a stock-specific manner, prior to the consideration of management uncertainty. The following components of the fishery are reflected in the total ABC: U.S. ABC (available to the U.S. fishery); state waters (portion of ABC expected to be caught from state waters outside Federal management); other sub-components (expected catch by other non-groundfish fisheries); scallop fishery (yellowtail flounder only); mid-water trawl fishery (haddock only); commercial groundfish fishery; and recreational groundfish fishery (GOM cod and haddock only). The commercial groundfish sub-ACL is further divided into the non-sector (common pool vessels) sub-ACL and the sector sub-ACL, based on the total vessel enrollment in all sectors as of May 1 of each FY, and the cumulative Potential Sector Contributions (PSCs) associated with vessels participating in each sector, as explained in Amendment 16.

The FW 44 catch levels for all stocks were based upon the most recent scientific information at that time, i.e., the stock assessments conducted by the Groundfish Assessment Review Meeting (GARM III) in 2008. GARM III was unable to determine the stock status of GOM winter flounder relative to biological reference points, but concluded that it is "highly likely that biomass is below B_{MSY}, and that there is a substantial probability that it is below ½ B_{MSY}" (NEFSC 2008). Due to the uncertainty in stock status, the SSC recommended that the Council base the ABCs for GOM winter flounder for FYs 2010 through 2012 on 75 percent of recent catches. This resulted in an ABC of 239 mt and a total ACL of 231 mt for FYs 2010 through 2012.

Timing of stock assessments are subject to the recommendations of the Northeast Regional Coordinating Committee, which is comprised of the leadership of the New England and MA Fishery Management Councils, the Atlantic States Marine Fisheries Commission, the NOAA Fisheries Northeast Regional Office, and the NOAA Fisheries Northeast Fisheries Science Center (NEFSC). The Northeast Regional Coordinating Committee decided to schedule updated stock assessments for all winter flounder stocks as soon as practicable in 2011, after considering timing constraints associated with staff availability, the availability of pertinent data, and other constraints such as the need to conduct updated stock assessments for other species. The 2011 GOM winter flounder stock assessment (SARC 52) is described in more detail under the affected environment section of this EA (Section 4.0).

The results of the 2011 GOM winter flounder stock assessment provide a new understanding of the status of this stock. In contrast to the previous stock assessment, overfishing was not occurring (i.e., fishing mortality is at a sustainable level) in 2010. Although

the current biomass threshold for determining whether the stock is rebuilt is still undefined, this new scientific information indicates that the catch level of GOM winter flounder can be substantially larger than the catch levels specified for FY 2011 under FW 44 and not result in overfishing or compromise the long-term potential of this stock to achieve MSY. Based on this updated scientific information and recommendations for catch level increases by the SSC, at its November meeting, the Council adopted higher catch levels for GOM winter flounder starting in FY 2012 (May 1, 2012, through April 30, 2013) as part of FW 47.

2.1.2 Justification for Emergency Action

If the Secretary finds that an emergency exists, Section 305(c) of the MSA authorizes him to promulgate emergency regulations to address the emergency for any fishery. NMFS last issued policy guidelines in determining whether the use of an emergency rule is justified (62 FR 44421; August 21, 1997). The guidelines state that the preparation of management actions under the emergency provisions of the MSA should be limited to special circumstances where substantial harm or disruption of the resource, fishery, or community would be caused in the time it would take to follow standard rulemaking procedures. The emergency criteria of the policy guidelines define the existence of an emergency as a situation that: "(1) Results from recent, unforeseen events or recently discovered circumstances; and (2) presents serious conservation or management problems in the fishery; and (3) can be addressed through emergency regulations for which the immediate benefits outweigh the value of advance notice, public comment, and deliberative consideration of the impacts on participants to the same extent as would be expected under the normal rulemaking process." The justifications described in the guidelines include the prevention of significant direct economic loss or to preserve a significant economic opportunity that otherwise might be foregone, and the prevention of significant community impacts.

The new information from the GOM winter flounder stock assessment presents a recently discovered circumstance and therefore warrants emergency action. Although the new assessment was completed in June 2011, the SSC only met to discuss this assessment and recommend catch limits for FYs 2012 – 2014 in mid-September. It was not until November 16, 2011, that the Council discussed and later adopted the SSC's catch level recommendations for FY 2012 – 2014. Because the Council could have adopted lower ACLs than were recommended by the SSC, it was not possible to predict the level of catch desired by the Council before the November Council meeting. By the November Council meeting, catch of GOM winter flounder during FY 2011 (about 50 percent of cumulative sector sub-ACLs) had increased substantially beyond that which was landed by sector vessels by November of FY 2010 (about 17.5 percent of cumulative sector sub-ACLs). Therefore, unlike in FY 2010 when only 67 percent of the ACL was caught during the entire fishing year, at the rate that GOM winter flounder is being caught during FY 2011, there is a good possibility that the fishery would reach, or even exceed the FY 2011 ACL for GOM winter flounder. Further, members of the fishing industry indicated that catch rates were sufficiently high during the early part of FY 2011 that they were concerned that the FY 2011 GOM winter flounder would limit their potential to catch other stocks managed by the FMP. Accordingly, they indicated that the fishing industry has already changed its behavior to avoid catching this stock, suggesting that catch rates would have been even higher if such precautionary action had not been proactively taken by the fishing industry. In a November 21, 2011, letter requesting that NMFS take emergency action to increase the FY 2011 GOM winter

flounder ACL, the Council forwarded a recommendation by a commercial fishing representative to increase the FY 2011 GOM winter flounder groundfish fishery sub-ACL to between 318 – 474 mt (see the Appendix to this EA). Finally, there is evidence that increased demand for available ACE of GOM winter flounder is driving up the leasing price for available ACE. This potentially increases operational costs and reduces economic return for vessels purchasing ACE. Therefore, the new understanding of the stock and its capacity to accommodate increased catch levels without resulting in overfishing this stock, combined with the unanticipated higher catch rate in FY 2011 compared to FY 2010, represent recent and unforeseen events that could result in direct economic loss and forgone economic opportunity in the fishery.

The emergency presents serious conservation and management problems to the fishery because the current low catch limits for various stocks, including GOM winter flounder, could result in substantially reduced fishing effort and decreased catch and revenue due to the multispecies nature of the fishery. When the projected catch of the ACL for a single stock such as GOM winter flounder triggers a reduction or cessation of fishing effort (as required by the FMP for common pool and sector vessels, respectively), not only is the catch of GOM winter flounder affected, but the catch of numerous other stocks that are caught concurrently is also reduced. It is possible that such triggered management measures will substantially reduce the potential of the fishery to achieve optimum yield. It may also increase incentives for vessel operators to alter their behavior and increase discards of this stock on unobserved trips to avoid such triggered measures. This would undermine the conservation objectives of the FMP and could result in future measures to ensure that rebuilding targets are met by the fishery.

Although the Council has the authority to develop a management action to modify the GOM winter flounder catch limits, as exemplified through the adoption of increased FY 2012 - 2014 catch limits for this stock under FW 47, an emergency action can be developed and implemented by NMFS more swiftly than a Council action that is subject to procedural and other requirements not applicable to the Secretary. If the normal regulatory process is used to revise the GOM winter flounder catch limits, it would take substantially longer for the new limits to be implemented, and could result in triggering restrictive, and economically harmful management actions that otherwise may have been avoided. If implemented through emergency action, it may be possible to increase catch limits for GOM winter flounder for the remainder of FY 2011, a period of 3-4 months, and could substantially increase revenue to vessels and avoid unnecessary adverse economic impacts. Therefore, NMFS has determined that the current situation meets the criteria for emergency action.

2.2 Purpose and Need

The purpose of this action is to revise the GOM winter flounder catch limits for the remainder of FY 2011. This action is needed to provide for a catch limit that most accurately reflects the most recent scientific information for this stock and to increase economic benefits to the fishing industry without waiting for FW 47, which would not become effective until May 1, 2012. The scope of this action is limited to the remainder of FY 2011 (January through April 2012). Accordingly, the purpose of this action is to implement a short-term increase in the FY 2011 GOM winter flounder ACL to provide increased catch and associated economic benefits to the fishing industry to the maximum extent practicable until long-term increases in the ACL for this stock can be implemented under FW 47 in May 2012. Such economic benefits include higher revenue associated with increasing landings of GOM winter flounder and maintaining

affordable access to additional GOM winter flounder quota through the ACE leasing market, but not to the extent that higher landings would substantially reduce ex-vessel price or eliminate any benefits associated with leasing available GOM winter flounder ACE to other sectors. In addition, because of the comingled nature of the groundfish fishery, increases in catch of GOM winter flounder under this action are intended to increase the fisheries ability to fully harvest available ACLs for other stocks, but not to such a degree that it would result in overfishing of another stock, or compromise other conservation objectives under the FMP.

Given the short duration that this action would be in effect, and the fact that the proposed alternative is within the context of management measures already in place, it is not feasible to consider a broad range of alternatives. Consideration of a broader suite of alternatives would undermine NMFS's ability to analyze and implement new catch specifications in a timely manner. In addition, the Council has already considered alternatives for long-term modifications to the FMP as part of FW 47, which, if approved, would be effective at the beginning of FY 2012.

3.0 Alternatives

As described above, the purpose of this action is to revise the GOM winter flounder catch limits for the remainder of FY 2011 (January 2012 – April 2012) in order to reflect the most recent scientific information for this stock and to increase economic benefits to the fishing industry. In addition to the No Action alternative, only one alternative is analyzed because of the narrow objectives of this action. Although the GOM winter flounder catch limit specifications would be revised under this action, they do not change the catch limit parameters and methods of calculating catch limits implemented by Amendment 16 to the FMP. Given the short duration that this action will be in effect, and the fact that the proposed alternative is within the context of management measures already in place, it is not feasible to consider a broader range of alternatives. Furthermore, consideration of a broader suite of alternatives would undermine NMFS's ability to analyze and implement new catch specifications in a timely manner. The Council has already considered alternatives for long-term modifications to the FMP as part of FW 47.

3.1 Status Determination Criteria

3.1.1 No Action

Under the No Action alternative, the status determination criteria adopted by Amendment 16 for GOM winter flounder would not be changed. Amendment 16 adopted two elements of these criteria: The criteria specified as a parameter that describes a quantity, and the most recent numerical estimate of that parameter. Under the No Action Alternative, the biomass target parameter for GOM winter flounder, where spawning stock biomass is at maximum sustainable yield (SSB_{MSY}) or its proxy, is SSB at 40 percent maximum spawning potential (MSP), or 3,792 mt. The maximum F threshold would remain the F_{MSY} proxy ($F_{40\%MSP}$), or 0.28.

3.1.2 Proposed Action (Preferred Alternative) Revised Status Determination Criteria

Under the proposed action, the GOM winter flounder biomass target parameter (SSBMSY or its proxy) would be classified as "undefined." The maximum fishing mortality threshold would be the F_{MSY} proxy ($F_{40\%MSP}$), or 0.31. To be consistent with the swept area biomass approach used to model the status of this stock, F_{MSY} must be converted to an exploitation rate. The threshold exploitation rate using $F_{40\%MSP}$ (0.31) as a proxy for F_{MSY} is 0.23. Additional information regarding the pertinent stock assessment is in Section 4.2.2.

3.2 Catch Limits

3.2.1 No Action

Under the No Action alternative, no revisions would be made to any of the GOM winter flounder catch limits for FY 2011 (OFL, ABC, total ACL, other sub-component sub-ACL, state waters sub-ACL, groundfish sub-ACL, sector sub-ACL, common pool sub-ACL, or sector ACEs. Tables 2 and 3 indicate distribution of the FY 2011 GOM winter flounder ACL, as specified by the FW 44 final rule and based on GARM III stock assessment, after considering actual participation in sectors during FY 2011 documented in a June 15, 2011, notice in the *Federal Register* (76 FR 34903).

Table 2. No-Action GOM Winter Flounder Catch Limits for FY 2011 (mt)

GOM Winter Flounder Catch Limit	Current Specification (mt)
Overfishing Level	570
Acceptable Biological Catch (U.S.)	239
Total ACL	231
Other sub-component sub-ACL	12
State Waters sub-ACL	60
Groundfish sub-ACL	159
* Sector sub-ACL	150
* Common pool sub-ACL	8

*Final rule that updated sector membership (76 FR 34903; June 15, 2011)

Table 3. No Action Fishing Year 2011 GOM Winter Flounder Annual Catch Entitlements for Each Sector (mt)

Sector	Current ACE (mt)
Fixed Gear Sector	3.49
Maine Permit Bank Sector	1.38
Northeast Coastal Communities Sector	1.43
Northeast Fisheries Sector II	33.34
Northeast Fisheries Sector III	17.37
Northeast Fisheries Sector IV	7.45
Northeast Fisheries Sector V	0.51
Northeast Fisheries Sector VI	5.84
Northeast Fisheries Sector VII	1.38
Northeast Fisheries Sector VIII	5.33
Northeast Fisheries Sector IX	3.85
Northeast Fisheries Sector X	43.21

Northeast Fisheries Sector XI	3.20
Northeast Fisheries Sector XII	0.50
Northeast Fisheries Sector XIII	1.98
Port Clyde Community Groundfish Sector	2.03
Sustainable Harvest Sector 1	9.37
Sustainable Harvest 3	5.15
Tri State Sector	3.29

All ACE values for sectors assume that each sector member has a valid permit for FY 2011.

3.2.2 Proposed Action (Preferred Alternative) – Revised Catch Limits

The proposed action would modify the FY 2011 GOM winter flounder catch limits to reflect the results of the 2011 updated stock assessment (SAW 52) by taking the FY 2012 GOM winter flounder ACL proposed in FW 47 and applying it to the remainder of FY 2011. In accordance with procedures specified in both Amendment 16 and FW 44, the calculation of the OFL, ABC, and management uncertainty of the revised catch limit was completed in the same manner as the originally specified GOM winter flounder catch limit, but based on the new scientific information. However, rather than providing the full fishing year ACL to the fishery, the FY 2011 GOM winter flounder ACL was revised to increase the GOM winter flounder ACL available to the components of the fishery that catch this stock by an amount equivalent to the monthly proportion of the FY 2012 ACL applied over the expected duration of this action (January – April 2012, or 4 months). In other words, the FY 2012 sub-ACL for each component of the fishery would be divided by 12 to determine the monthly sub-ACL increase. This would then be multiplied by 4 to reflect the expected 4-month duration of this action, which would then be added to the catch of GOM winter flounder by each component in the fishery through December 2011 to arrive at the revised sub-ACLs for FY 2011, as follows:

- Revised commercial groundfish sub-ACL = FY 2011 catch + ((FY 2012 sub-ACL/12)*4)
- Revised state waters subcomponent = FY 2011 catch + ((FY 2012 state subcomponent/12)*4)
- Revised "other" subcomponent = FY 2011 catch + ((FY 2012 other subcomponent/12)*4)

Based on these formulas, this action would provide an additional 238 mt of GOM winter flounder sub-ACL to commercial groundfish vessels, 91 mt of GOM winter flounder sub-ACL to vessels operating in state waters without a federal groundfish permit (including an estimate of recreational catch in state waters), and 18 mt of GOM winter flounder sub-ACL to all other vessels. Through December 31, 2011, it was estimated that federally-permitted groundfish vessels caught 90.6 mt of GOM winter flounder, state-waters vessels caught 72 mt of GOM winter flounder, and all other vessels caught 14.1mt of GOM winter flounder. This results in the revised total ACL, groundfish sub-ACL, state waters sub-ACL, and other sub-component sub-ACL listed in Table 4. Sector ACLs in Tables 4 and 5 are based upon sector membership as of May 1, 2011, as documented in the *Federal Register* (76 FR 34903; June 15, 2011).

Consistent with FW 47, the FY 2012 GOM winter flounder OFL and ABC used in determining the revised FY 2011 GOM winter flounder catch limits proposed in this action and described above are calculated by applying F_{MSY} or 75% F_{MSY}, respectively, to the 2010 stock biomass and expressed in metric tons (mt). Twenty-five percent of the GOM winter flounder ABC is used to account for anticipated state-waters catch, five percent of the ABC accounts for

anticipated GOM winter flounder catch by non-groundfish fisheries (other sub-components), and the remaining amount is allocated to the groundfish fishery. To account for management uncertainty, these amounts were then reduced by five percent.

Table 4. Revised GOM Winter Flounder Catch Levels for FY 2011

GOM Winter Flounder Catch Limit	Current Specification (mt)	Revised Specification (mt)
Overfishing Level	570	1,458
Acceptable Biological Catch (ABC)	239	1,078
Total ACL	231	524
Other sub-component sub-ACL	12	32
State Waters sub-ACL	60	163
Groundfish sub-ACL	159	329
*Sector sub-ACL	150	313
*Common pool sub-ACL	8	16

*Final rule that updated sector membership (76 FR 34903; June 15, 2011)

Table 5. Revised GOM Annual Catch Entitlement by Sector (mt) for FY 2011

Sector*	Current ACE (mt)	Revised ACE (mt)
Fixed Gear Sector	3.49	7.26
Maine Permit Bank Sector	1.38	2.87
Northeast Coastal Communities Sector	1.43	2.98
Northeast Fisheries Sector 10	43.21	89.97
Northeast Fisheries Sector 11	3.20	6.66
Northeast Fisheries Sector 12	0.50	1.04
Northeast Fisheries Sector 13	1.98	4.12
Northeast Fisheries Sector 2	33.34	69.43
Northeast Fisheries Sector 3	17.37	36.16
Northeast Fisheries Sector 4	7.45	15.51
Northeast Fisheries Sector 5	0.51	1.06
Northeast Fisheries Sector 6	5.84	12.15
Northeast Fisheries Sector 7	1.38	2.87
Northeast Fisheries Sector 8	5.33	11.09
Northeast Fisheries Sector 9	3.85	8.02
Port Clyde Community Groundfish Sector	2.03	4.22
Sustainable Harvest Sector 1	9.37	19.52
Sustainable Harvest 3	5.15	10.72
Tri State Sector	3.29	6.86

*All ACE values for sectors assume that each sector member has a valid permit for FY 2011.

Duration of GOM Winter Flounder Catch Limits:

Because the revised specifications would be implemented based upon the authority of the Secretary of Commerce to take emergency action, the duration of the action would be limited by the MSA to an initial period of 180 days, with a potential extension of an additional 186 days. However, because the intent of this action is to only implement such increased catch limits for the remainder of FY 2011, the increased catch limits would expire on April 30, 2012. NMFS anticipates that revised catch limits for GOM winter flounder for FYs 2012 and 2013 outlined in FW 47 will be approved by the Secretary of Commerce and implemented by the start of FY 2012 on May 1, 2012.

Rationale

Based on the recent updated stock assessment for GOM winter flounder, and the revised status of the stock, increased annual catch limits for 2011 are warranted. This action would increase the FY 2011 GOM winter flounder catch limits by an amount that reflects an annualized catch rate resulting from the FY 2012-2013 GOM winter flounder ACLs adopted by the Council in FW 47 applied to the remainder of FY 2011 (January – April). This is necessary to ensure that the fishery can harvest more GOM winter flounder at a level that would not result in overfishing, or lead to market gluts and associated reduction in ex-vessel market price. This action would avoid substantial economic impacts caused by unnecessarily restricting catch of GOM winter flounder to lower levels that were previously specified based on an outdated evaluation of stock status. In addition, increasing the GOM winter flounder catch limits for the remainder of FY 2011 would enable the fishery to more effectively harvest available ACL for other stocks caught in conjunction with GOM winter flounder, but not to a degree that it would compromise efforts to rebuild other overfished stocks. Further, increasing available catch for this stock would likely reduce demand and associated price for leased ACE, increasing the availability of this stock to vessels with less capital to invest in such operational expenses, while still maintaining some benefits to those sectors that do not wish to land all of their available GOM winter flounder ACE, but would prefer to lease at least some of it to other sectors.

3.3 Considered but Rejected

NMFS considered, but rejected a revision to the DAS counting rate or allocation. For common pool vessels, current regulations under the FMP authorize the Regional Administrator to adjust either the DAS counting rate or allocation in response to catch projections in order to optimize catch or prevent catch from exceeding a sub-ACL. However, because DAS management measures apply to broad stock areas, and therefore affect fishing effort on multiple stocks, relaxing the DAS measures would need to be justified for all stocks in the broad stock areas. NMFS determined that adjustment of DAS is not a practical alternative for this emergency action, given the impact of DAS measures on multiple stock areas.

Sectors are exempt from DAS measures and trip limits, and sector ACE is used as the primary effort control for sector catch of a particular species. Accordingly, adjustments to the GOM winter flounder ACL, and associated adjustments to sector ACE for this stock, are the only alternatives to increase sector vessel catch of GOM winter flounder during the remainder of FY 2011. There are an infinite number of ways that the FY 2011 GOM winter flounder ACL could be increased. One alternative considered in this action was to implement the SSC's recommended FY 2012 GOM winter flounder ABC and ACL (1,458 and 1,078 mt, respectively) for the remainder of FY 2011 (January – April 2012). However, NMFS rejected this alternative

because it would be inconsistent with the purpose and need for this action. Such a substantial increase in the ACL available to the groundfish fishery may result in excessively high catch rates during the spring that could substantially reduce the market price for this species and reduce the potential economic benefits to the fishing industry. A substantial increase in the availability of sector ACE for this stock could also lower the leasing market price for this stock and potentially eliminate demand for this stock on the ACE leasing market. While this would benefit those seeking to acquire ACE for this stock, it could eliminate any benefits to those wishing to sell ACE of this stock to others. Thus, the potential economic benefits to the fishing industry would potentially be reduced under this alternative compared to the preferred alternative. Finally, because GOM cod is often caught in conjunction with GOM winter flounder, there is the potential that substantially increasing the FY 2011 GOM winter flounder ACL might result in a concurrent substantial increase in the catch of GOM cod. Preliminary information from an updated stock assessment for GOM cod completed during the week of November 28, 2011, indicated that substantial reductions in F on GOM cod is necessary in FY 2012 to prevent overfishing and rebuild this stock. Therefore, to avoid adverse impacts to the status of GOM cod and reducing the economic benefits to the fishing industry, it would be inconsistent with the purpose and need for this action to increase the GOM winter flounder ACL to reflect the FY 2012 ACLs adopted by the Council in FW 47 during the remainder of FY 2011 under this action.

NMFS also considered increasing the GOM winter flounder trip limits applicable to common pool vessels. An evaluation of historic fishing patterns conducted to determine the appropriate trip limit to apply for the remainder of FY 2011. This analysis concluded that there is little relationship between possession limit and catch rates of GOM winter flounder, and that trip limits have not been a limiting factor in the catch of GOM winter flounder. NMFS is concerned that a high GOM winter flounder trip limit may increase the catch of GOM cod due to the commingled nature of the groundfish fishery. As noted above, preliminary information from the most recent stock assessment suggests that catch of GOM cod must be substantially reduced during 2012 to maintain consistency with conservation objectives of the FMP. Finally, current regulations allow the NMFS Northeast Regional Administrator to increase or decrease common pool trip limits to ensure that available sub-ACLs are caught, but not exceeded. Based on these factors, NMFS has decided to maintain the current GOM winter flounder 250 lb per trip limit for common pool vessels for the remainder of FY 2011, but will monitor landings of GOM winter flounder by common pool vessels and increase this trip limit, as necessary, to ensure that vessels are not constrained by such trip limits during the remainder of FY 2011.

4.0 Affected Environment

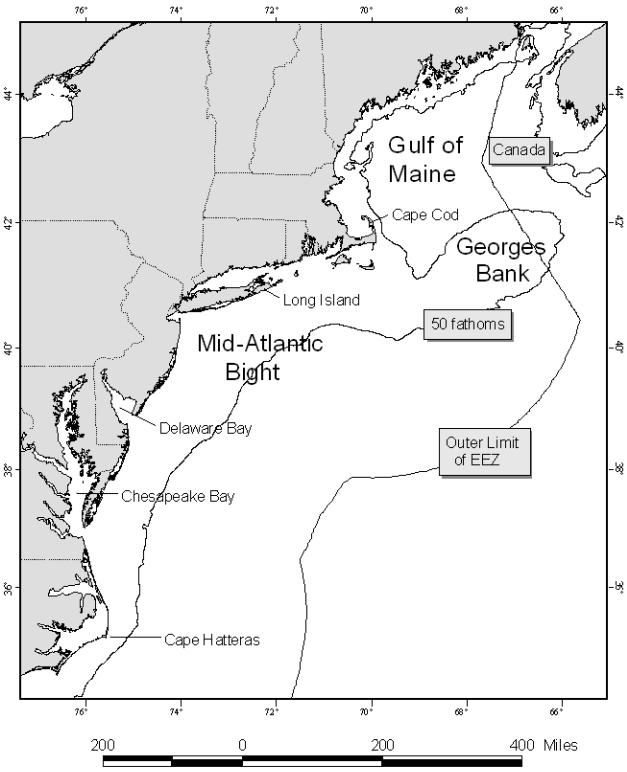
The Valued Ecosystem Components (VECs) affected by the Proposed Action include the physical environment, Essential Fish Habitat (EFH), target species, non-target species/bycatch, protected resources, and human communities, which are described below.

4.1 Physical Environment/Habitat/EFH

The Northeast U.S. Shelf Ecosystem (Figure 6) has been described as including the area from the GOM south to Cape Hatteras, North Carolina, extending from the coast seaward to the edge of the continental shelf, including offshore to the Gulf Stream (Sherman et al. 1996). The continental slope includes the area east of the shelf, out to a depth of 2,000 meters (m). Four

distinct sub-regions comprise the NOAA Fisheries Northeast Region: The GOM, Georges Bank (GB), the southern New England (SNE)/Mid-Atlantic (MA) region, and the continental slope. Since the groundfish fleet will primarily be fishing in the inshore and offshore waters of the GOM, GB, and the SNE/MA areas, the description of the physical and biological environment is focused on these sub-regions. Information on the affected environment was extracted from Stevenson et al. (2004).

Figure 1. Northeast U.S. Shelf Ecosystem



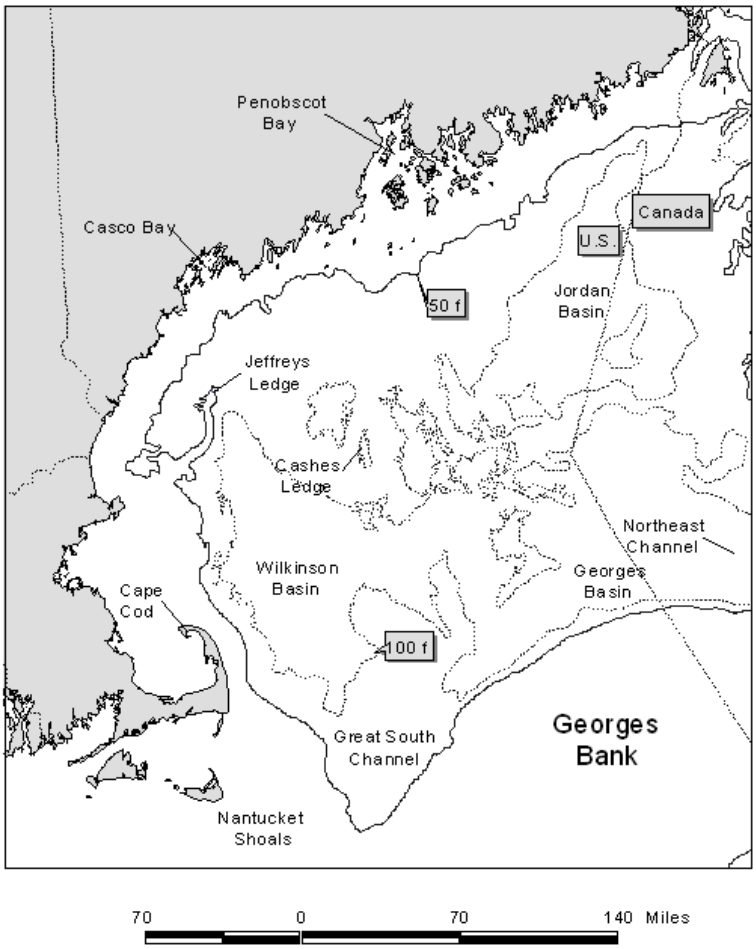
4.1.1 Affected Physical Environment

Because this action is focused on GOM winter flounder, the affected physical environment is limited to the GOM. That is not to suggest that the fishery does not operate in other areas. The groundfish fishery occurs in Georges Bank (GB) as well as Southern New England (SNE) and Mid-Atlantic (MA) waters. These areas are described in more detail in Section 7.1 of the EA prepared for FW 45 (NEFMC 2011), including sediment type, geologic morphology, habitat types, and species presence. While groundfish vessels may operate in both the GOM and other areas on the same trip, it is expected that the impacts of this action will be minimal in areas outside of the GOM.

The GOM is an enclosed coastal sea, bounded on the east by Browns Bank, on the north by the Nova Scotian (Scotian) Shelf, on the west by the New England states, and on the south by Cape Cod and GB (Figure 6). The GOM is a boreal environment and is characterized by relatively cold waters and deep basins, with a patchwork of various sediment types. There are 21 distinct basins separated by ridges, banks, and swells. Depths in the basins exceed 250 m, with a

maximum depth of 350 m in Georges Basin, just north of GB. High points within the Gulf of Maine include irregular ridges, such as Cashes Ledge, which peaks at 9 m below the surface.

Figure 2. Gulf of Maine



The GOM is an enclosed coastal sea that was glacially derived and is characterized by a system of deep basins, moraines, and rocky protrusions (Stevenson et al. 2004). The GOM is topographically diverse from the rest of the continental border of the U.S. Atlantic coast (Stevenson et al. 2004). Very fine sediment particles created and eroded by the glaciers have collected in thick deposits over much of the seafloor of the GOM, particularly in its deep basins. These mud deposits blanket and obscure the irregularities of the underlying bedrock, forming topographically smooth terrains. In the rises between the basins, other materials are usually at the surface. Unsorted glacial till covers some morainal areas, sand predominates on some high areas, and gravel,[1] sometimes with boulders, predominates others. Bedrock is the predominant

[1] The term "gravel," as used in this analysis, is a collective term that includes granules, pebbles, cobbles, and

substrate along the western edge of the GOM, north of Cape Cod in a narrow band out to a depth of about 60 m. Mud predominates in coastal valleys and basins that often abruptly border rocky substrates. Gravel, often mixed with shell, is common adjacent to bedrock outcrops and in fractures in the rock. Gravel is most abundant at depths of 20 to 40 m, except off eastern Maine where a gravel-covered plain exists to depths of at least 100 m. Sandy areas are relatively rare along the inner shelf of the western Gulf of Maine, but are more common south of Casco Bay, especially offshore of sandy beaches.

The geologic features of the GOM coupled with the vertical variation in water properties (e.g. salinity, depth, temperature) combine to provide a great diversity of habitat types that support a rich biological community. To illustrate this, a brief description of benthic invertebrates and demersal (i.e., bottom-dwelling) fish that occupy the GOM is provided below. Additional information is provided in Stevenson et al. (2004), which is incorporated by reference.

The most common groups of benthic invertebrates in the GOM reported by Theroux and Wigley (1998) in terms of numbers collected were annelid worms, bivalve mollusks, and amphipod crustaceans. Biomass was dominated by bivalves, sea cucumbers, sand dollars, annelids, and sea anemones. Watling (1998) identified seven different bottom assemblages that occur on the following habitat types:

- Sandy offshore banks: fauna are characteristically sand dwellers with an abundant interstitial component;
- Rocky offshore ledges: fauna are predominantly sponges, tunicates, bryozoans, hydroids, and other hard bottom dwellers;
- Shallow (< 60 m) temperate bottoms with mixed substrate: fauna population is rich and diverse, primarily comprised of polychaetes and crustaceans;
- Primarily fine muds at depths of 60 to 140 m within cold GOM Intermediate Water[2]: fauna are dominated by polychaetes, shrimp, and cerianthid anemones;
- Cold deep water, muddy bottom: fauna include species with wide temperature tolerances which are sparsely distributed, diversity low, dominated by a few polychaetes, with brittle stars, sea pens, shrimp, and cerianthids also present;
- Deep basin, muddy bottom, overlaying water usually 7 to 8°C: fauna densities are not high, dominated by brittle stars and sea pens, and sporadically by a tube-making amphipods; and
- Upper slope, mixed sediment of either fine muds or mixture of mud and gravel, water temperatures always greater than 8°C: upper slope fauna extending into the Northeast Channel.

Two studies (Gabriel 1992, Overholtz and Tyler 1985) reported common[3] demersal fish species by assemblages in the GOM and GB:

- Deepwater/Slope and Canyon: offshore hake, blackbelly rosefish, Gulf stream flounder;

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boulders in order of increasing size. Therefore, the term "gravel" refers to particles larger than sand and generally denotes a variety of "hard bottom" substrates.

[2] Maine Intermediate Water is described as a mid-depth layer of water that preserves winter salinity and temperatures, and is located between more saline Maine bottom water and the warmer, stratified Maine surface water. The stratified surface layer is most pronounced in the deep portions of the western Gulf of Maine.

[3] Other species were listed as found in these assemblages, but only the species common to both studies are listed.

- Intermediate/Combination of Deepwater Gulf of Maine-GB and Gulf of Maine-GB Transition: silver hake, red hake, goosefish (monkfish);
- Shallow/Gulf of Maine-GB Transition Zone: Atlantic Cod, haddock, pollock;
- Shallow water GB-SNE: yellowtail flounder, windowpane flounder, winter flounder, winter skate, little skate, longhorn sculpin;
- Deepwater Gulf of Maine-GB: white hake, American plaice, witch flounder, thorny skate; and
- Northeast Peak/Gulf of Maine-GB Transition: Atlantic cod, haddock, pollock.

4.1.2 Habitat

Habitats provide living things with the basic life requirements of nourishment and shelter, ultimately providing for both individual and population growth. The fishery resources of a region are influenced by the quantity and quality of available habitat. Depth, temperature, substrate, circulation, salinity, light, dissolved oxygen, and nutrient supply are important parameters of a given habitat which, in turn, determine the type and level of resource population that the habitat supports. Table 6 briefly summarizes the habitat requirements for each of the 12 groundfish species managed by the Northeast Multispecies (large-mesh) FMP, some of which consist of multiple stocks within the Northeast Multispecies FMP. Information for this table was extracted from the original FMP and profiles available from NMFS (Clark 1998). Essential fish habitat information for egg, juvenile and adult life stages for these species was compiled from Stevenson et al. 2004 (Table 6). Note that EFH for the egg stage was included for species that have a demersal egg stage (winter flounder and ocean pout); all other species' eggs are found either in the surface waters, throughout the water column, or are retained inside the parent until larvae hatch. The egg habitats of these species are therefore not generally subject to interaction with gear and are not listed in Table 6.

Table 6. Summary of geographic distribution, food sources, essential fish habitat features, and commercial gear used to catch each species in the Northeast Multispecies Fishery Management Unit

Species	Geographic Region of the Northwest Atlantic	Food Source	Essential Fish Habitat		Commercial Fishing Gear Used
			Water Depth	Substrate	
Atlantic cod	Gulf of Maine, GB and southward	Omnivorous (invertebrates and fish)	(J): 25-75 m (82-245 ft)	(J): Cobble or gravel bottom substrates	Otter trawl, longlines, gillnets
			(A): 10-150 m (33-492 ft)	(A): Rocks, pebbles, or gravel bottom substrate	
Haddock	southwestern Gulf of Maine and shallow waters of GB	Benthic feeders (amphipods, polychaetes, echinoderms), bivalves, and some fish	(J): 35-100 m (115– 28 ft)	(J): Pebble and gravel bottom substrates	Otter trawl, longlines, gillnets
			(A): 40-150 m (131-492 ft)	(A): Broken ground, pebbles, smooth hard sand, smooth areas between rocky patches	
Acadian redfish	Gulf of Maine, deep portions of GB and Great South Channel	Crustaceans	(J): 25-400 m (82-1,312 ft)	(J): Bottom habitats with a substrate of silt, mud, or hard bottom	Otter trawl
			(A): 50-350 m (164–1,148 ft)	(A): Same as for (J)	
Pollock	Gulf of Maine, extends to GB, and the northern part of MA Bight	Juvenile feed on crustaceans, adults also feed on fish and mollusks	(J): 0-250 m (0-820 ft)	(J): Bottom habitats with aquatic vegetation or substrate of sand, mud, or rocks	Otter trawl, gillnets
			(A): 15-365 m (49-1,198 ft)	(A): Hard bottom habitats including artificial reefs	
Ocean Pout	Gulf of Maine, Cape Cod Bay, GB, SNE, middle Atlantic south to Delaware Bay	Juveniles feed on amphipods and polychaetes. Adults feed mostly on echinoderms as well as on mollusks and crustaceans	(E): <50 m (<164 ft)	(E): Bottom habitats, generally hard bottom sheltered nests, holes, or crevices where juveniles are guarded.	Otter trawl
			(L): <50 m (<164 ft)	(L): Hard bottom nesting areas	
			(J): <80 m (262 ft)	(J): Bottom habitat, often smooth areas near rocks or algae	
			(A): <110 m (361 ft)	(A): Bottom habitats; dig depressions in soft sediments	
Atlantic Halibut	Gulf of Maine, GB	Juveniles feed on annelid worms and crustaceans, adults mostly feed on fish	(J): 20-60 m (66-197 ft)	(J): Bottom habitat with a substrate of sand, gravel, or clay	Otter trawl, longlines
			(A):100-700 m (328-2,297 ft)	(A): Same as for (J)	

Species	Geographic Region of the Northwest Atlantic	Food Source	Essential Fish Habitat		Commercial Fishing Gear Used
			Water Depth	Substrate	
White hake	Gulf of Maine, GB, SNE	Juveniles feed mostly on polychaetes and crustaceans; adults feed mostly on crustaceans, squids, and fish	(J): 5-225 m (16-738 ft)	(J): Bottom habitat with seagrass beds or substrate of mud or fine-grained sand	Otter trawl, gillnets
			(A): 5-325 m (16-1,066 ft)	(A): Bottom habitats with substrate of mud or fine grained sand	
Yellowtail flounder	Gulf of Maine, SNE, GB	Amphipods and polychaetes	(J): 20-50 m (66-164 ft)	(J): Bottom habitats with substrate of sand or sand and mud	Otter trawl
			(A): 20-50 m (66-164 ft)	(A): Same as for (J)	
American plaice	Gulf of Maine, GB	Polychaetes, crustaceans, mollusks, echinoderms	(J): 45-150 m (148-492 ft)	(J): Bottom habitats with fine grained sediments or a substrate of sand or gravel	Otter trawl
			(A): 45–175 m (148-574 ft)	(A): Same as for (J)	
Witch flounder	Gulf of Maine, GB, MA Bight/SNE	Mostly polychaetes (worms), echinoderms	(J): 50-450 m (164-1,476 ft)	(J): Bottom habitats with fine grained substrate	Otter trawl
			(A): 25-300 m (82-984 ft)	(A): Same as for (J)	
Winter flounder	Gulf of Maine, GB, MA Bight/SNE	Polychaetes, crustaceans	(E): <5 m (16 ft)	(E): Bottom habitats with a substrate of sand, muddy sand, mud, and gravel	Otter trawl, gillnets
			(J): 0.1-10 m (0.3-32 ft) (1-50 m age 1+) (3.2-164 ft)	(J): Bottom habitats with a substrate of mud or fine grained sand	
			(A): 1-100 m (3.2-328 ft)	(A): Bottom habitats including estuaries with substrates of mud, sand, gravel	
Atlantic wolffish	Gulf of Maine & GB	Mollusks, brittle stars, crabs, and sea urchins	(J): 40-240 m (131.2-787.4 ft)	J): Rocky bottom and coarse sediments	Otter trawl, longlines, and gillnets
			(A): 40-240 m (131.2-787.4 ft)	(A): Same as for (J)	
Windowpane flounder	Gulf of Maine, GB, MA Bight/SNE	Juveniles mostly crustaceans; adults feed on crustaceans and fish	(J): 1-100 m (3.2-328 ft)	(J): Bottom habitats with substrate of mud or fine grained sand	Otter trawl
			(A): 1-75 m (3.2-574 ft)	(A): Same as for (J)	

Note: Species life stages are summarized by letter in parentheses following species name. A = adult; E = egg; J = juvenile; m = meter.

4.1.3 Essential Fish Habitat (EFH)

EFH is defined by the Sustainable Fisheries Act of 1996 as "[t]hose waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The environment that could potentially be affected by the Proposed Action has been identified as EFH for benthic life stages of species that are managed under the Northeast Multispecies FMP; Atlantic sea scallop; monkfish; deep-sea red crab; northeast skate complex; Atlantic herring; summer flounder, scup, and black sea bass; tilefish; squid, Atlantic mackerel, and butterfish; Atlantic surfclam and ocean quahog FMPs. EFH for the species managed under these FMPs includes a wide variety of benthic habitats in state and Federal waters throughout the Northeast U.S. Shelf Ecosystem. EFH descriptions of the general substrate or bottom types for all the benthic life stages of the species managed under these FMPs are summarized in Table 6. Full descriptions and maps of EFH for each species and life stage (except Atlantic wolffish) are available on the NMFS Northeast Region website at http://www.nero.noaa.gov/hcd/index2a.htm. In general, EFH for species and life stages that rely on the seafloor for shelter (e.g., from predators), reproduction, or food is vulnerable to disturbance by bottom tending gear. The most vulnerable habitat is more likely to be hard or rough bottom with attached epifauna.

4.1.4 Gear Types and Interaction with Habitat

The groundfish fleet fishes for target species, including pollock, with a number of gear types: trawl, gillnet, and hook and line gear (including jigs, handline, and non-automated demersal longlines). This section discusses the characteristics of each of the gear types as well as the typical impacts to the physical habitat associated with each of these gear types.

4.1.4.1 Gear Types

The characteristics of typical gear types used by the multispecies fishery are summarized in Table 7.

Table 7. Descriptions of the Fixed Gear Types Used by the Multispecies Fishery

Gear Type	Trawl	Sink/ Anchor Gillnets	Bottom Longlines	Hook and Line
Total Length	Varies	90 m long per net.	~450 m.	Varies
Lines	N/A	Leadline and floatline with webbing (mesh) connecting	Mainline is parachute cord. Gangions (lines from mainline to hooks) are 15 inches long, 3 to 6 inches apart, and made of shrimp twine	One to several with mechanical line fishing
Nets	Rope or large-mesh size, depends upon target Species	Monofilament, mesh size depends on the target species (groundfish nets minimum mesh size of 6.5 inches	No nets, but 12/0 circle hooks are required.	No nets, but single to multiple hooks, "umbrella rigs"
Anchoring	N/A	22 lb (9–11 kg) Danforth-style anchors	20-24lb (9-11kg) anchors, anchored at each end,	No anchoring, but sinkers used

		are required at each end of the net string	using pieces of railroad track, sash weights, or Danforth anchors, depending on currents	(stones, lead)
Frequency/ Duration of Use	Tows last for several hours	Frequency of trending changes from daily (when targeting groundfish) to semi-weekly (when targeting monkfish and skate)	Usually set for a few hours at a time	Depends upon cast/target species

4.1.4.2 Trawl Gear

Trawls are classified by their function, bag construction, or method of maintaining the mouth opening. Function may be defined by the part of the water column where the trawl operates (e.g., bottom) or by the species that it targets (Hayes 1983). Mid-water trawls are designed to catch pelagic species in the water column and do not normally contact the bottom. Bottom trawls are designed to be towed along the seafloor and to catch a variety of demersal fish and invertebrate species.

The mid-water trawl is used to capture pelagic species throughout the water column. The mouth of the net typically ranges from 110 m to 170 m and requires the use of large vessels (Sainsbury 1996). Successful mid-water trawling requires the effective use of various electronic aids to find the fish and maneuver the vessel while fishing (Sainsbury 1996). Tows typically last for several hours and catches are large. The fish are usually removed from the net while it remains in the water alongside the vessel by means of a suction pump. In some cases, the fish are removed from the net by repeatedly lifting the cod end aboard the vessel until the entire catch is in the hold.

Three general types of bottom trawl are used in the Northeast Region, but bottom otter trawls account for nearly all commercial bottom trawling activity. There is a wide range of otter trawl types used in the Northeast as a result of the diversity of fisheries and bottom types encountered in the region (NREFHSC 2002). The specific gear design used is often a result of the target species (whether found on or off the bottom) as well as the composition of the bottom (smooth versus rough and soft versus hard). A number of different types of bottom otter trawl used in the Northeast are specifically designed to catch certain species of fish, on specific bottom types, and at particular times of year. Bottom trawls are towed at a variety of speeds, but average about 5.6 km/hour (3 knots). Use of this gear in the Northeast is managed under several federal FMPs. Bottom trawling is also subject to a variety of state regulations throughout the region.

A flatfish trawl is a type of bottom otter trawl designed with a low net opening between the headrope and the footrope and more ground rigging on the sweep. This type of trawl is designed so that the sweep follows the contours of the bottom, and to get fish like flounders - that lie in contact with the seafloor - up off the bottom and into the net. It is used on smooth mud and sand bottoms. A high-rise or fly net with larger mesh has a wide net opening and is used to catch demersal fish that rise higher off the bottom than flatfish (NREFHSC 2002).

Bottom otter trawls that are used on "hard" bottom (i.e., gravel or rocky bottom), or mud or sand bottom with occasional boulders, are rigged with rockhopper gear. The purpose of the "ground gear" in this case is to get the sweep over irregularities in the bottom without damaging the net. The purpose of the sweep in trawls rigged for fishing on smooth bottoms is to herd fish

into the path of the net (Mirarchi 1998).

The raised-footrope trawl was designed to provide vessels with a means of continuing to fish for small-mesh species without catching groundfish. Raised-footrope trawls fish about 0.5 to 0.6 m above the bottom (Carr and Milliken 1998). Although the doors of the trawl still ride on the bottom, underwater video and observations in flume tanks have confirmed that the sweep in the raised-footrope trawl has much less contact with the seafloor than the traditional cookie sweep that it replaces (Carr and Milliken 1998).

4.1.4.3 Gillnet Gear

The fishery also uses individual sink/anchor gillnets which are about 90 m long and are usually fished as a series of 5 to 15 nets attached end-to-end. A vast majority of "strings" consist of 10 gillnets. Gillnets typically have three components: The leadline, webbing and floatline. In New England, leadlines are approximately 30 kilogram (kg)/net. Webs are monofilament, with the mesh size depending on the species of interest. Nets are anchored at each end using materials such as pieces of railroad track, sash weights, or Danforth anchors, depending on currents. Anchors and leadlines have the most contact with the bottom. For New England groundfish, frequency of tending ranges from daily to semiweekly [Northeast Region Essential Fish Habitat Steering Committee (NREFHSC 2002)].

A bottom gillnet is a large wall of netting equipped with floats at the top and lead weights along the bottom. Bottom gillnets are anchored or staked in position. Fish are caught while trying to pass through the net mesh. Gillnets are highly selective because the species and sizes of fish caught are dependent on the mesh size of the net. Bottom gillnets are used to catch a wide range of species. Bottom gillnets are fished in two different ways, as "standup" and "tiedown" nets (Williamson 1998). Standup nets are typically used to catch Atlantic cod, haddock, pollock, and hake and are soaked (duration of time the gear is set) for 12 to 24-hours. Tiedown nets are used to catch flounders and monkfish and are left in the water for 3 to 4 days. Other species caught in bottom gillnets in are dogfish and skates.

4.1.4.4 Hook and Line Gear

4.1.4.4.1 Hand Lines/Rod and Reel

The simplest form of hook-and-line fishing is the hand line, which may be fished using a rod and reel or simply "by hand". The gear consists of a line, sinker (weight), gangion, and at least one hook. The line is typically stored on a small spool and rack and varies in length and the sinkers vary from stones to cast lead. The hooks can vary from single to multiple arrangements in "umbrella" rigs. An attraction device must be used with the hook, usually consisting of a natural bait or an artificial lure. Hand lines can be carried by currents until retrieved or fished in such as manner as to hit bottom and bounce (Stevenson et al. 2004). Hand lines and rods and reels are used in the Northeast Region to catch a variety of demersal species.

4.1.4.4.2 Mechanized Line Fishing

Mechanized line-hauling systems have been developed to allow smaller fishing crews to work more lines, and to use electrical or hydraulic power to work the lines on the spools. The

reels, also called "bandits", are mounted on the vessel bulwarks with the mainline wound around a spool. The line is taken from the spool over a block at the end of a flexible arm and each line may have a number of branches and baited hooks.

Jigging machines are used to jerk a line with several unbaited hooks up in the water to snag a fish in its body and is commonly used to catch squid. Jigging machine lines are generally fished in waters up to 600 m (1970 ft) deep. Hooks and sinkers can contact the bottom, depending upon the way the gear is used and may catch a variety of demersal species.

4.1.4.5 Longlines

The remaining gear type that is used by the fishery are bottom longlines which are a long length of line, often several miles long, to which short lengths of line ("gangions") carrying baited hooks are attached. Longlining is undertaken for a wide range of bottom species. Bottom longlines typically have up to six individual longlines strung together for a total length of more than 450 m and are deployed with 9 to 11 kg anchors. The mainline is a parachute cord. Gangions are typically 40 centimeters (cm) long and 1 to 1.8 m apart and are made of shrimp twine. These longlines are usually set for a few hours at a time (NREFHSC 2002).

When fishing with hooks, all hooks must be 12/0 circle hooks. A "circle hook" is, defined as a hook with the point turned back towards the shank and the barbed end of the hook is displaced (offset) relative to the parallel plane of the eyed-end or shank of the hook when laid on its side. The design of circle hooks enables them to be employed to reduce the damage to habitat features that would occur with use of other hook shapes (NREFHSC 2002).

4.1.4.6 Gear Interaction with Habitat

Historically, commercial fishing in the region have been using hook and line, longline, gillnets and trawls. For decades, trawls have been intensively used throughout the region and have accounted for the majority of commercial fishing activity in the multispecies fishery off New England.

Amendment 13 (NEFMC 2003) describes the general effects of bottom trawls on benthic marine habitats. The primary source document used for this analysis was an advisory report prepared for the International Council for the Exploration of the Seas (ICES) that identified a number of possible effects of beam trawls and bottom otter trawls on benthic habitats (ICES 2000). This report is based on scientific findings summarized in Lindeboom and de Groot (1998), which were peer-reviewed by an ICES working group. The focus of the report is the Irish Sea and North Sea, but it also includes assessments of effects in other areas. Two general conclusions were: 1) low-energy environments are more affected by bottom trawling; and 2) bottom trawling affects the potential for habitat recovery (i.e., after trawling ceases, benthic communities and habitats may not always return to their original pre-impacted state). Regarding direct habitat effects, the report also concluded that:

- Loss or dispersal of physical features such as peat banks or boulder reefs (<u>changes are always permanent</u> and lead to an overall change in habitat diversity, which in turn leads to the local loss of species and species assemblages dependent on such features);
- Loss of structure-forming organisms such as bryozoans, tube-dwelling polychaetes, hydroids, seapens, sponges, mussel beds, and oyster beds (<u>changes may be permanent</u>

leading to an overall change in habitat diversity, which could in turn lead to the local loss of species and species assemblages dependent on such biogenic features);

- Reduction in complexity caused by redistributing and mixing of surface sediments and the degradation of habitat and biogenic features, leading to a decrease in the physical patchiness of the seafloor (changes are not likely to be permanent); and
- Alteration of the detailed physical features of the seafloor by reshaping seabed features such as sand ripples and damaging burrows and associated structures that provide important habitats for smaller animals and can be used by fish to reduce their energy requirements (changes are not likely to be permanent).

A more recent evaluation of the habitat effects of trawling and dredging was prepared by the Committee on Ecosystem Effects of Fishing for the National Research Council's Ocean Studies Board (NRC 2002). Trawl gear evaluated included bottom otter trawls and beam trawls. This report identified four general conclusions regarding the types of habitat modifications caused by trawls:

- Trawling reduces habitat complexity;
- Repeated trawling results in discernable changes in benthic communities;
- Bottom trawling reduces the productivity of benthic habitats; and
- Fauna that live in low natural disturbance regimes are generally more vulnerable to fishing gear disturbance.

An additional source of information for various gear types that relates specifically to the Northeast region is the report of a "Workshop on the Effects of Fishing Gear on Marine Habitats off the Northeastern U.S." sponsored by the NEFMC and MA Fishery Management Council (MAFMC) in October 2001 (NEFSC 2002). A panel of invited fishing industry members and experts in the fields of benthic ecology, fishery ecology, geology, and fishing gear technology convened for the purpose of assisting the NEFMC, MAFMC, and NMFS with: 1) evaluating the existing scientific research on the effects of fishing gear on benthic habitats; 2) determining the degree of impact from various gear types on benthic habitats in the Northeast; 3) specifying the type of evidence that is available to support the conclusions made about the degree of impact; 4) ranking the relative importance of gear impacts on various habitat types; and 5) providing recommendations on measures to minimize those adverse impacts. The panel was provided with a summary of available research studies that summarized information relating to the effects of bottom otter trawls, bottom gillnets, and longlines. Relying on this information plus professional judgment, the panel identified the effects and the degree of impact of these gears on mud, sand, and gravel/rock habitats.

Additional information is provided in this report on the recovery times for each type of impact for each gear type in mud, sand, and gravel habitats ("gravel" includes other hard-bottom habitats). This information made it possible to rank these three substrates in terms of their vulnerability to the effects of bottom trawling, although other factors such as frequency of disturbance from fishing and from natural events are also important. In general, impacts from trawling were determined to be greater in gravel/rock habitats with attached epifauna. Impacts on biological structure were ranked higher than impacts on physical structure. Effects of trawls on major physical features in mud (deep water clay-bottom habitats) and gravel bottom were described as permanent, and impacts to biological and physical structure were given recovery times of months to years in mud and gravel. Impacts of trawling on physical structure in sand

were of shorter duration (days to months) given the exposure of most continental shelf sand habitats to strong bottom currents and/or frequent storms.

According to the panel, impacts of sink gillnets and longlines on sand and gravel habitats would result in low degree impacts (NEFSC 2002). Duration of impacts to physical structures from these gear types would be expected to last days to months on soft mud but could be permanent on hard bottom clay structures along the continental slope. Impacts to mud would be caused by gillnet lead lines and anchors. Physical habitat impacts from sink gillnets and longlines on sand would not be expected.

The contents of a second expert panel report, produced by the Pew Charitable Trusts and entitled "Shifting Gears: Addressing the Collateral Impacts of Fishing Methods in U.S. Waters" (Morgan and Chuenpagdee 2003), was also summarized in Amendment 13. This group evaluated the habitat effects of 10 different commercial fishing gears used in U.S. waters. The report concluded that bottom trawls have relatively high habitat impacts, bottom gillnets and pots and traps have low to medium impacts, and bottom longlines have low impacts. As in the International Council for Exploration of the Sea (ICES) and National Research Council (NRC) reports, individual types of trawls and dredges were not evaluated. The impacts of bottom gillnets, traps, and longlines were limited to warm or shallow water environments with rooted aquatic vegetation or "live bottom" environments (e.g., coral reefs).

4.2 Target Species

This section is primarily focused on GOM winter flounder, as the impact of this action on other northeast groundfish stocks is expected to be minimal. Information regarding the GOM winter flounder stock assessment is discussed in Section 4.2.2. GOM winter flounder life history information is presented in Section 4.2.3. A summary of GOM winter flounder landings and revenue is included in Section 4.5.2.

4.2.1 Species and Stock Status Descriptions

The 14 allocated target stocks managed under the Northeast Multispecies FMP are presented in Table 8. The stock status descriptions for these groundfish stocks (including all management units of each species) are based primarily on the GARM III report (NEFSC 2008) benchmark assessments. With the exception of winter flounder stocks, the most recent stock status descriptions can be accessed via the NMFS website at http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm.

Table 8. Status of the Northeast Groundfish Stocks in 3rd Quarter 2011

Stock	Overfished? (Is Biomass below Threshold?)	Overfishing Occurring? (Is Fishing Mortality above Threshold?)
GOM Cod	Yes	Yes
GB (GB) Cod	Yes	Yes
GOM Haddock	No	No
GB Haddock	No	No
Redfish	No	No
Pollock	No	No
White Hake	Yes	Yes
Cape Cod/GOM Yellowtail Flounder	Yes	Yes
GB Yellowtail Flounder	Yes	No
SNE (SNE)/MA (MA) Yellowtail Flounder	Yes	Yes
GOM Winter Flounder	Unknown	Unknown
GB Winter Flounder	Yes	Yes
SNE/MA Winter Flounder	Yes	Yes
Witch Flounder	Yes	Yes
American Plaice	No	No
Northern Windowpane Flounder	Yes	Yes
Southern Windowpane Flounder	No	Yes
Ocean Pout	Yes	No
Atlantic Halibut	Yes	No
Atlantic Wolffish	Yes	Unknown

4.2.2 SAW 52 GOM Winter Flounder Stock Assessment Summary for 2011

The following is an abridged version of the Assessment Summary Report (NEFSC 2011).

State of Stock:

According to SAW 52, overfishing was not occurring for the stock in 2010. It is not known whether this stock is overfished because a biomass reference point or proxy could not be determined and an analytical assessment model was not accepted (NEFSC 2011). A proxy value for the overfishing threshold was derived from a length-based yield per recruit analysis that assumes all fish above 30 cm are fully recruited to the fishery and that natural mortality is 0.3. Using $F_{40\%}$ (0.31) as a proxy for F_{MSY}, the corresponding threshold exploitation rate is 0.23. The overfishing status is based on the ratio of 2010 catch (195 mt) to survey based swept area estimate of biomass for winter flounder exceeding 30 cm in length (6,341 mt). The exploitation rate in 2010 was estimated at 0.03 (80 percent confidence interval: 0.02 - 0.05), which is less than the threshold exploitation rate (0.23). It was observed that the biomass estimate for 2010 is 16 percent lower than that for 2009 using the same survey methods, although this difference is not statistically significant (NEFSC 2011).

Projections:

Because an analytical assessment model was not adopted, it was not possible to run projections for the future biomass or catch for this stock.

Stock Distribution and Identification:

Winter flounder (*Pseudopleuronectes americanus*) is a demersal flatfish species commonly found in North Atlantic estuaries and on the continental shelf. The species is distributed between the Gulf of St. Lawrence, Canada and North Carolina, U.S., although it is not abundant south of Delaware Bay. GOM winter flounder undergo annual migrations from estuaries and near shore areas, where spawning occurs in the late winter and early spring, to offshore shelf areas of less than 60 fathoms (110 meters). The current GOM stock extends from the coastal shelf east of Provincetown, MA northward to the Bay of Fundy (NEFSC 2011).

Data and Assessment:

Several models used to estimate stock status were considered too unreliable due to the conflicting trends within the assessment, specifically the large decrease in the catch over the time series with very little change in the indices or age structure in both the catch and surveys (NEFSC 2011). A new value for natural mortality was adopted, changing from M = 0.20 to M = 0.30, which was then used in the estimation of the $F_{40\%}$ reference point. Fall surveys conducted by the NEFSC, the Massachusetts Division of Marine Fisheries, and the states of Maine and New Hampshire were used to estimate biomass based on the 30+ cm biomass area swept (NEFSC 2011). Spring surveys were not used because they did not sample within estuaries where a portion of the stock is located. Uncertainty in the individual estimates of survey abundance and swept area trawl footprints were characterized empirically and used to construct an overall estimate of uncertainty in the aggregate biomass estimate. The efficiency value of 0.6 was supported when evaluated against the efficiency for GB winter flounder and calibration experiments between the FSV Bigelow and the R/V Albatross.

Biological Reference Points:

As noted above, biological reference points for stock biomass are unknown. A proxy value of the overfishing threshold was derived for the 2011 assessment from a length-based yield per recruit analysis that assumes all fish above 30 cm are fully recruited to the fishery and that natural mortality is 0.3. Von Bertalanffy parameters were estimated from the spring and fall NEFSC survey age data (n = 2,035) from 2006 to 2010. Maturity at length information is estimated from the spring survey by the Massachusetts Division of Marine Fisheries (L50=29cm). The reference points were converted to exploitation rates to be consistent with the swept area biomass approach. Using F40% (0.31) as a proxy for F_{MSY}, the corresponding threshold exploitation rate is 0.23. This serves as a proxy for the overfishing threshold.

Fishing Mortality:

The exploitation rate in 2010 was estimated at 0.03 using the 2010 ratio of catch (195 mt) to the 30+ area swept biomass (6,341 mt) from the fall surveys. An assumed efficiency of 60 percent was used to construct this estimate from the three surveys used in this assessment and referenced above.

Biomass:

As noted above, fall surveys conducted by the NEFSC, the Massachusetts Division of Marine Fisheries, and the states of Maine and New Hampshire were used to estimate biomass based on the 30+ cm biomass area swept (NEFSC 2011). Using a survey trawl efficiency value

of 0.6 the estimated stock biomass in 2010 of fish greater than 30 cm was 6,341 mt (80% CI 4,230 - 8,800 mt). Spawning stock biomass for this stock is unknown.

Recruitment:

Recruitment for GOM winter flounder is unknown.

4.2.3 GOM Winter Flounder Life History

The life history of GOM winter flounder is described thoroughly in the EA supporting FW 44 (NEFMC 2009c). The following represents a summary of that information.

GOM winter flounder is a demersal flatfish distributed in the northwest Atlantic from Labrador to Georgia sought by both the U.S. commercial and recreational fisheries within the GOM. Adult GOM winter flounder migrate inshore in the fall and early winter and spawn in late winter and early spring. After spawning, adults typically leave inshore areas when water temperatures exceed 15°C, although some remain inshore year-round. The eggs of winter flounder are demersal, but larvae are initially planktonic and then become increasingly bottom-oriented as metamorphosis approaches. Winter flounder spawn from winter through spring, with peak spawning occurring during February and March in Massachusetts Bay and south of Cape Cod, and somewhat later along the coast of Maine, continuing into May.

4.2.4 Assemblages of Fish Species

GB and the GOM have been historically characterized by high levels of fish production. Several studies have attempted to identify demersal fish assemblages over large spatial scales. Overholtz and Tyler (1985) found five depth-related groundfish assemblages for GB and the GOM that were persistent temporally and spatially. Depth and salinity were identified as major physical influences explaining assemblage structure. Gabriel (1992) identified six assemblages, which are compared with the results of Overholtz and Tyler (1985) in Table 9 (adapted from Amendment 16). For the affected area, these assemblages and relationships are considered to be relatively consistent for purposes of general description. The assemblages include allocated target, non-allocated target, and bycatch species. As presented in Table 9, the terminology and definitions of habitat types varies slightly between the two studies. For further information on fish habitat relationships, see Table 6.

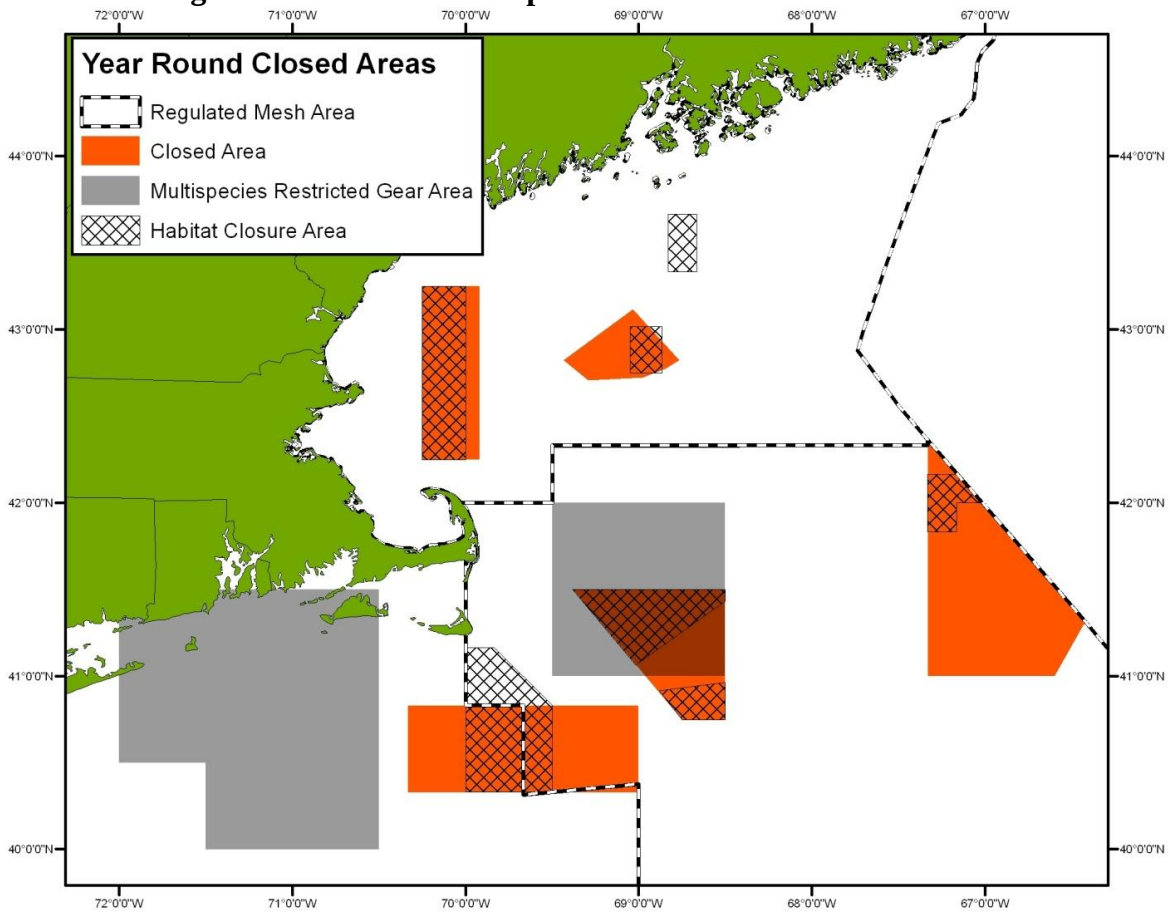
Table 9. Comparison of demersal fish assemblages of GB and the Gulf of Maine

Overholtz and Tyler (1985)		Gabriel (1992)	
Assemblage	**Species**	**Species**	**Assemblage**
Slope and Canyon	offshore hake blackbelly rosefish Gulf stream flounder fourspot flounder, goosefish, silver hake, white hake, red hake	offshore hake blackbelly rosefish Gulf stream flounder fawn cusk-eel, longfin hake, armored sea robin	Deepwater
Intermediate	silver hake red hake goosefish Atlantic cod, haddock, ocean pout, yellowtail flounder, winter skate, little skate, sea raven, longhorn sculpin	silver hake red hake goosefish northern shortfin squid, spiny dogfish, cusk	Combination of Deepwater Gulf of Maine/GB and Gulf of Maine-GB Transition
Shallow	Atlantic cod haddock pollock silver hake white hake red hake goosefish ocean pout	Atlantic cod haddock pollock	Gulf of Maine-GB Transition Zone
	yellowtail flounder windowpane winter flounder winter skate little skate longhorn sculpin summer flounder sea raven, sand lance	yellowtail flounder windowpane winter flounder winter skate little skate longhorn sculpin	Shallow Water GB-SNE
Gulf of Maine-Deep	white hake American plaice witch flounder thorny skate silver hake, Atlantic cod, haddock, cusk, Atlantic wolffish	white hake American plaice witch flounder thorny skate redfish	Deepwater Gulf of Maine-GB
Northeast Peak	Atlantic cod haddock pollock ocean pout, winter flounder, white hake, thorny skate, longhorn sculpin	Atlantic cod haddock Pollock	Gulf of Maine-GB Transition Zone

4.2.5 Areas Closed to Fishing within the Groundfish Fishery Area

Select areas are closed to some level of fishing to protect the sustainability of fishery resources. The designation of long-term closures has resulted in the removal or reduction of fishing effort from important fishing grounds, with an expected result that fishery-related mortalities to stocks utilizing the closed areas may have been reduced. Figure 3 depicts the Northeast Multispecies year round closed areas, regulated mesh areas, habitat closure areas, and restricted gear areas. Additional areas in the GOM and GB are closed on an intermittent basis.

Figure 3. Northeast Multispecies Closed and Restricted Areas



4.2.6 Interaction between Gear and Target Species

The analysis of interactions between gear and allocated species is based on catch information for the Northeast Multispecies FMP common pool fishery from FY 1996 through FY 2006 as presented in GARM III. Historic landings for select target species by gear type from FY 1996 through FY 2006 (Table 10) show that the majority of fish of all species are caught with trawls. Only cod and white hake are caught in significant numbers by gillnets. Only haddock are caught in significant numbers by hook and line.

Table 10. Historic landings for groundfish species by gear type from Fishing Year 1996 to Fishing Year 2006 in metric tons (mt) as presented in GARM III.

Stock/species	Trawl	Large-mesh trawl discards	Small-mesh trawl discards	Gillnet	Gillnet discards	Hook/ line	Hook/ line discards	Scallop dredge	Scallop dredge discards	Other	Other discards	Total discards	Total landings
GB Cod		2,742	551						170			2,862	73,806
GB Haddock	38,989	3,950		883	61	2,461	380		31	297		4,423	42,626
GB Yellowtail Flounder		1,280	134						2,562			3,976	27,960
So. New England/MA Yellowtail Flounder		725	129						1,119			1,972	7,968
Gulf of Maine/Cape Cod Yellowtail Flounder		1,123	33		510				944			2,611	15,796
Gulf of Maine Cod	22,435	5,301		17,532	4,036					3,639		9,337	43,606
Witch Flounder		1,911	469								71	2,481	27,031
American Plaice		3,059	1,237								350	4,533	31,031
Gulf of Maine Winter Flounder	4,479	259	54	1,346	163					168		476	5,993
So. New England/MA Winter Flounder[a]												1,481	31,146
GB Winter Flounder	18,202	169	47					210	418	135		634	18,546
White Hake	22,532			9,355	239					2,191		2,173	32,547
Pollock												N/A	51,568

Table 10. (continued)

Stock/species	Trawl	Large-mesh trawl discards	Small-mesh trawl discards	Gillnet	Gillnet discards	Hook/ line	Hook/ line discards	Scallop dredge	Scallop dredge discards	Other	Other discards	Total discards	Total landings
Acadian Redfish												6,200	4,115
Ocean Pout[a]												5,165	207
Gulf of Maine Haddock	6,396	5	0.49	1,091	1					969	2		8,456
Atlantic Halibut [a]												157	138
Gulf of Maine/GB Windowpane [a]	1,966	3,584	403	4				3	615	7		4,850	1,978
SNE/MA Windowpane [a]	1,071	1,762	433	3				1	1,004	18		3,197	1,093
Atlantic Wolffish[b]													

Notes:
[a] as adopted by the NEFMC June, 2009
[b] provisionally added to list of stocks not allocated

4.3 Other Species (non-groundfish incidental and bycatch species)

Species likely to be affected by the multispecies fishery include monkfish, skates, and spiny dogfish. These species have no allocation under the Northeast Multispecies FMP and are managed under separate FMPs. The discussion in this section is limited to these three groups of fish. Monkfish and skates are commonly landed when caught. Monkfish may be discarded when regulations or market conditions constrain the amount of the catch that could be landed. Spiny dogfish, which tend to be relatively abundant in catches, may be landed but are often the predominant component of the discarded bycatch. Full descriptions of the life histories and management plans for monkfish, skates, and spiny dogfish can be found in Framework 44.

The monkfish FMP defines two management areas for monkfish (northern and southern), divided roughly by an east-west line bisecting GB. Monkfish in both management regions are not overfished and overfishing is not occurring.

Skate landings have been reported to be generally increasing since 2000, and reached historical highs in 2007 and 2008. Due to insufficient information about the population dynamics of skates, there remains considerable uncertainty about the status of skate stocks. Thorny skates are currently considered overfished, but overfishing is not occurring. The other species in the complex are above their minimum biomass thresholds, and are either rebuilding (smooth, barndoor, and rosette) or are above their biomass targets (winter, little, and clearnose) The landings and catch limits associated with Amendment 3 and the 2011 Secretarial Emergency Action are considered to have an acceptable probability of promoting biomass growth and achieving the rebuilding (biomass) targets for thorny skates and smooth skates. Controlling landings and a stabilization of total catch below the median relative exploitation ratio is expected to cause skate biomass and future yield to increase.

The spiny dogfish fishery is managed under a FMP developed jointly by the NEFMC and Mid Atlantic Fishery Management Council (MAFMC) for federal waters and a plan developed concurrently by the Atlantic States Marine Fisheries Commission for state waters. Spawning stock biomass of spiny dogfish declined rapidly in response to a directed fishery during the 1990s. Management measures, initially implemented in 2001, have been effective in reducing landings and reducing fishing mortality. Based upon the 2011 updated stock assessment performed by the Northeast Fisheries Science Center, the spiny dogfish stock is not presently overfished and overfishing is not occurring. NMFS declared the spiny dogfish stock rebuilt for the purposes of U.S. management in May 2010 (Rago 2010).

4.3.1 Interaction between Gear and Incidental Catch Species

The analysis of interactions between gear and non-allocated species and by catch is based on catch information for the Northeast Multispecies FMP Common Pool fishery from FY 1996 to FY 2006. The Final Supplemental Environmental Impact Statement (FSEIS) to Amendment 2 (NEFMC and MAFMC 2003) evaluated the potential adverse effects of gears used in the directed monkfish fishery for monkfish and other federally-managed species and the effects of fishing activities regulated under other federal FMPs on monkfish. The two gears used in the directed monkfish fishery are bottom trawls and bottom gill nets which are described in detail in Section 1.2.1 of Appendix 2 to Amendment 2 to the Monkfish FMP (NEFMC and MAFMC 2003).

Regionally, skates are harvested in two very different fisheries, one for lobster bait and one for wings for food. Vessels tend to catch skates when targeting other species like groundfish, monkfish, and scallops and land them if the price is high enough. Therefore, gear interactions with skate can be expected in the conduct of fishing for groundfish. Detailed information about skate fisheries, gear and conduct can be found in Section 7.6 of the recent NEFMC Amendment to the Skate FMP and accompanying FSEIS (NEFMC 2009b).

Of the non-allocated target species considered in the EA, dogfish have the potential for an interaction with all gear types expected to be used by the groundfish fleet. Historic landings by groundfish vessels for non-allocated target species from FY 1996 to FY 2007 (Table 11) show that the majority of fish of all species are caught with otter trawls.

Table 11. Historic catch (mt) for other species by gear type from Fishing Year 1996 to Fishing Year 2006[a]

Species	Gear Type								
	Trawl		Gillnet		Dredge		Other Gear[b]	Total	
	landed	discard	land	discard	land	discard	land	land	discard
Monkfish	122,700	16,520	7,440	6,526	31,555	16,136	8,811	228,000	35,100
Skates	117,381	189,741	29,711	19,448	38,638	--	4,413	151,505	247,827
Dogfish	24,368	61,914	72,712	39,852	--	--	946	98,026	101,766

Notes:
[a] monkfish 1997-2006, skates 1996-2006, dogfish 1996-2005
[b] discards not available for other gear
Source: Northeast Data Poor Stocks Working Group 2007; Sosebee et al. 2008; NEFSC 2006b.

4.4 Protected Resources

There are numerous species that inhabit the environment within the Northeast Multispecies FMP management unit, and that therefore potentially occur in the operations area of the groundfish fishery, that are afforded protection under the Endangered Species Act of 1973 (ESA; i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA), and are under NMFS' jurisdiction. Fifteen species are classified as endangered or threatened under the ESA, while the remainder are protected by the provisions of the MMPA.

4.4.1 Species Present in the Area

Table 12 lists the species, protected either by the ESA, the MMPA, or both, that may be found in the environment that would be utilized by the fishery. Table 12 also includes two candidate fish species and one proposed fish species (species being considered for listing as an endangered or threatened species), as identified under the ESA. Candidate species are those petitioned species that are actively being considered for listing as endangered or threatened under the ESA, as well as those species for which NMFS has initiated an ESA status review that it has announced in the Federal Register. Atlantic sturgeon, alewife, blueback herring, and cusk are known to occur within the action area of the Northeast multispecies fishery and have documented interactions with types of gear used in the Northeast multispecies fishery.

Table 12. Species protected under the Endangered Species Act and Marine Mammal Protection Act that may occur in the operations area for the groundfish fishery.[a]

Species	Status
Cetaceans	
North Atlantic right whale (*Eubalaena glacialis*)	Endangered
Humpback whale (*Megaptera novaeangliae*)	Endangered
Fin whale (*Balaenoptera physalus*)	Endangered
Sei whale (*Balaenoptera borealis*)	Endangered
Blue whale (*Balaenoptera musculus*)	Endangered
Sperm whale (*Physeter macrocephalus*	Endangered
Minke whale (*Balaenoptera acutorostrata*)	Protected
Pilot whale (*Globicephala spp.*)	Protected
Risso's dolphin (*Grampus griseus*)	Protected
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected
Common dolphin (*Delphinus delphis*)	Protected
Spotted dolphin (*Stenella frontalis*)	Protected
Bottlenose dolphin (*Tursiops truncatus*)[b]	Protected
Harbor porpoise (*Phocoena phocoena*)	Protected
Sea Turtles	
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered[c]
Loggerhead sea turtle (*Caretta caretta*)	Threatened
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered
Fish	
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)	Endangered
Cusk *(Brosme brosme)*	Candidate
Atlantic sturgeon *(Acipenser oxyrinchus)*	Proposed
Alewife (*Alosa pseudo harengus*)	Candidate
Blueback herring (*Alosa aestivalis*)	Candidate
Pinnipeds	
Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected
Harp seal (*Phoca groenlandicus*)	Protected
Hooded seal (*Cystophora cristata*)	Protected

Notes:
[a] MMPA-listed species occurring on this list are only those species that have a history of interaction with similar gear types within the action area of the Northeast Multispecies Fishery, as defined in the 2010 List of Fisheries.
[b] Bottlenose dolphin (*Tursiops truncatus*), Western North Atlantic coastal stock is listed as depleted.
[c] Green turtles in U.S. waters are listed as threatened except for the Florida breeding population which is listed as endangered. Due to the inability to distinguish between these populations away from the nesting beach, green turtles are considered endangered wherever they occur in U.S. waters.

A status review for Atlantic sturgeon was completed in 2007 which indicated that five distinct population segments (DPS) of Atlantic sturgeon exist in the United States (ASSRT 2007). On October 6, 2010, NMFS proposed listing these five DPSs of Atlantic sturgeon along the U.S. East Coast as either threatened or endangered species (75 FR 61872 and 75 FR 61904).

The GOM DPS of Atlantic sturgeon is proposed to be listed as threatened, and the New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs of Atlantic sturgeon are proposed as endangered. A final listing rule is expected in early 2012. Atlantic sturgeon from any of the five DPSs could occur in areas where the multispecies fishery operates. Atlantic sturgeon have been captured in small mesh otter trawl gear, albeit less often than in large mesh otter trawl gear (Stein et al. 2004a, ASMFC 2007).

Candidate species receive no substantive or procedural protection under the ESA; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed project. NMFS has initiated review of recent stock assessments, bycatch information, and other information for these candidate and proposed species. The results of those efforts are needed to accurately characterize recent interactions between fisheries and the candidate/proposed species in the context of stock sizes. Any conservation measures deemed appropriate for these species will follow the information reviews. Please note that once a species is proposed for listing the conference provisions of the ESA apply (see 50 CFR 402.10).

4.4.2 Species Potentially Affected

The multispecies fishery has the potential to affect the sea turtle, cetacean, and pinniped species discussed below. A number of documents contain background information on the range-wide status of sea turtle and marine mammal species that occur in the area and are known or suspected of interacting with fishing gear (demersal gear including trawls, gillnets, and bottom longlines). These documents include sea turtle status reviews and biological reports (NMFS and USFWS 1995; Turtle Expert Working Group 1998, 2000, 2007, 2009; NMFS and USFWS 2007a, 2007b, recovery plans for ESA-listed cetaceans and sea turtles (NMFS 1991, 2005; NMFS and USFWS 1991a, 1991b; NMFS and USFWS 1992), the marine mammal stock assessment reports (e.g., Waring et al. 2006; 2007; 2009), and other publications (e.g., Clapham et al. 1999, Perry et al. 1999, Best et al. 2001, Perrin et al. 2002).

4.4.2.1 Sea Turtles

Loggerhead, leatherback, Kemp's ridley, and green sea turtles occur seasonally in southern New England and Mid-Atlantic continental shelf waters north of Cape Hatteras, North Carolina. Turtles generally move up the coast from southern wintering areas as water temperatures warm in the spring (James et al. 2005, Morreale and Standora 2005, Braun-McNeill and Epperly 2004, Morreale and Standora 1998, Musick and Limpus 1997, Shoop and Kenney 1992, Keinath et al. 1987). A reversal of this trend occurs in the fall when water temperatures cool. Turtles pass Cape Hatteras by December and return to more southern waters for the winter (James et al. 2005, Morreale and Standora 2005, Braun-McNeill and Epperly 2004, Morreale and Standora 1998, Musick and Limpus 1997, Shoop and Kenney 1992, Keinath et al. 1987). Hard-shelled species typically occur as far north as Cape Cod whereas the more cold-tolerant leatherbacks occur in more northern Gulf of Maine waters in the summer and fall (Shoop and Kenney 1992, STSSN database http://www.sefsc.noaa.gov/seaturtleSTSSN.jsp).

On March 16, 2010, NMFS and USFWS published a proposed rule (75 FR 12598) to divide the worldwide population of loggerhead sea turtles into nine DPSs, as described in the 2009 Status Review. Two of the DPSs were proposed to be listed as threatened and seven of the

DPSs, including the Northwest Atlantic Ocean DPS, were proposed to be listed as endangered. NMFS and the USFWS accepted comments on the proposed rule through September 13, 2010 (June 2, 2010, 75 FR 30769). On March 22, 2011 (76 FR 15932), NMFS and USFWS extended the date by which a final determination on the listing action will be made to no later than September 16, 2011. This action was taken to address the interpretation of the existing data on status and trends and its relevance to the assessment of risk of extinction for the Northwest Atlantic Ocean DPS, as well as the magnitude and immediacy of the fisheries bycatch threat and measures to reduce this threat. New information or analyses to help clarify these issues were requested by April 11, 2011.

On September 22, 2011, NMFS and USFWS issued a final rule (76 FR 58868), determining that the loggerhead sea turtle is composed of nine DPSs (as defined in Conant et al., 2009) that constitute species that may be listed as threatened or endangered under the ESA. Five DPSs were listed as endangered (North Pacific Ocean, South Pacific Ocean, North Indian Ocean, Northeast Atlantic Ocean, and Mediterranean Sea), and four DPSs were listed as threatened (Northwest Atlantic Ocean, South Atlantic Ocean, Southeast Indo-Pacific Ocean, and Southwest Indian Ocean). Note that the Northwest Atlantic Ocean (NWA) DPS and the Southeast Indo-Pacific Ocean DPS were original proposed as endangered. The NWA DPS was determined to be threatened based on review of nesting data available after the proposed rule was published, information provided in public comments on the proposed rule, and further discussions within the agencies. The two primary factors considered were population abundance and population trend. NMFS and USFWS found that an endangered status for the NWA DPS was not warranted given the large size of the nesting population, the overall nesting population remains widespread, the trend for the nesting population appears to be stabilizing, and substantial conservation efforts are underway to address threats.

The September 2011 final rule also noted that critical habitat for the two DPSs occurring within the U.S. (NWA DPS and North Pacific DPS) will be designated in a future rulemaking. Information from the public related to the identification of critical habitat, essential physical or biological features for this species, and other relevant impacts of a critical habitat designation was solicited.

This proposed action only occurs in the Atlantic Ocean. As noted in Conant et al. (2009), the range of the four DPSs occurring in the Atlantic Ocean are as follows: NWA DPS – north of the equator, south of 60° N latitude, and west of 40° W longitude; Northeast Atlantic Ocean (NEA) DPS – north of the equator, south of 60° N latitude, east of 40° W longitude, and west of 5° 36’ W longitude; South Atlantic DPS – south of the equator, north of 60° S latitude, west of 20° E longitude, and east of 60° W longitude; Mediterranean DPS – the Mediterranean Sea east of 5° 36’ W longitude. These boundaries were determined based on oceanographic features, loggerhead sightings, thermal tolerance, fishery bycatch data, and information on loggerhead distribution from satellite telemetry and flipper tagging studies. Sea turtles from the NEA DPS are not expected to be present over the North American continental shelf in U.S. coastal waters, where the proposed action occurs (P. Dutton, NMFS, personal communication, 2011). Previous literature (Bowen et al. 2004) has suggested that there is the potential, albeit small, for some juveniles from the Mediterranean DPS to be present in U.S. Atlantic coastal foraging grounds. These data should be interpreted with caution however, as they may be representing a shared common haplotype and lack of representative sampling at Eastern Atlantic rookeries. Given that updated, more refined analyses are ongoing and the occurrence of Mediterranean DPS juveniles in U.S. coastal waters is rare and uncertain, if even occurring at all, for the purposes of this

assessment we are making the determination that the Mediterranean DPS is not likely to be present in the action area. Sea turtles of the South Atlantic DPS do not inhabit the action area of this subject fishery (Conant et al. 2009). As such, the remainder of this assessment will only focus on the NWA DPS of loggerhead sea turtles, listed as threatened.

In general, sea turtles are a long-lived species and reach sexual maturity relatively late (NMFS SEFSC 2001; NMFS and USFWS 2007a, 2007b, 2007c, 2007d). Sea turtles are injured and killed by numerous human activities (NRC 1990; NMFS and USFWS 2007a, 2007b, 2007c, 2007d). Nest count data are a valuable source of information for each turtle species since the number of nests laid reflects the reproductive output of the nesting group each year. A decline in the annual nest counts has been measured or suggested for four of five western Atlantic loggerhead nesting groups through 2004 (NMFS and USFWS 2007a), however, data collected since 2004 suggests nest counts have stabilized or increased (TEWG 2009). Nest counts for Kemp's ridley sea turtles as well as leatherback and green sea turtles in the Atlantic demonstrate increased nesting by these species (NMFS and USFWS 2007b, 2007c, 2007d).

4.4.2.2 Large Cetaceans

The most recent Marine Mammal Stock Assessment Report (SAR) (Waring et al. 2011) reviewed the current population trend for each of these cetacean species within U.S. Economic Exclusion Zone (EEZ) waters. The SAR also estimated annual human-caused mortality and serious injury. Finally, it described the commercial fisheries that interact with each stock in the U.S. Atlantic. The following paragraphs summarize information from the SAR.

The western North Atlantic baleen whale species (North Atlantic right, humpback, fin, sei, and minke whales) follow a general annual pattern of migration. They migrate from high latitude summer foraging grounds, including the Gulf of Maine and Georges Bank, to and latitude winter calving grounds (Perry et al. 1999, Kenney 2002). However, this is a simplification of species movements as the complete winter distribution of most species is unclear (Perry et al. 1999, Waring et al. 2011). Studies of some of the large baleen whales (right, humpback, and fin) have demonstrated the presence of each species in higher latitude waters even in the winter (Swingle et al. 1993, Wiley et al. 1995, Perry et al. 1999, Brown et al. 2002). Blue whales are most often sighted along the east coast of Canada, particularly in the Gulf of St. Lawrence. They occur only infrequently within the U.S. EEZ (Waring et al. 2002).

Available information suggests that the North Atlantic right whale population increased at a rate of 1.8 percent per year between 1990 and 2005. The total number of North Atlantic right whales is estimated to be at least 361 animals in 2005 (Waring et al. 2011). The minimum rate of annual human-caused mortality and serious injury to right whales averaged 2.8 mortality or serious injury incidents per year during 2004 to 2008 (Waring et al. 2011). Of these, fishery interactions resulted in an average of 0.8 mortality or serious injury incidents per year.

The North Atlantic population of humpback whales is conservatively estimated to be 7,698 (Waring et al. 2011). The best estimate for the GOM stock of humpback whale population is 847 whales (Waring et al. 2011). Based on data available for selected areas and time periods, the minimum population estimates for other western North Atlantic whale stocks are 3,269 fin whales, 208 sei whales (Nova Scotia stock), 3,539 sperm whales, and 6,909 minke whales (Waring et al. 2009). Current data suggest that the GOM humpback whale stock is steadily increasing in size (Waring 2011). Insufficient information exist to determine trends for these other large whale species.

Recent revisions to the Atlantic Large Whale Take Reduction Plan (ALWTRP) (72 FR 57104, October 5, 2007) continue to address entanglement risk of large whales (right, humpback, and fin whales, and acknowledge benefits to minke whales) in commercial fishing gear. The revisions seek to reduce the risk of death and serious injury from entanglements that do occur.

4.4.2.3 Small Cetaceans

There is anthropogenic mortality of numerous small cetacean species (dolphins, pilot whales, and harbor porpoise) in Northeast multispecies fishing gear. Seasonal abundance and distribution of each species off the coast of the Northeast U.S. varies with respect to life history characteristics. Some species such as white-sided dolphin and harbor porpoise primarily occupy continental shelf waters. Other species such as the Risso's dolphin occur primarily in continental shelf edge and slope waters. Still other species like the common dolphin and the spotted dolphin occupy all three habitats. Waring et al. (2009) summarizes information on the western North Atlantic stocks of each species.

4.4.2.4 Pinnipeds

Harbor seals have the most extensive distribution of the four species of seal expected to occur in the area. Harbor seals sighting have occurred far south as 30° N (Katona et al. 1993, Waring et al. 2009). Gray seals are the second most common seal species in U.S. EEZ waters. They occur primarily in waters off of New England (Katona et al. 1993; Waring et al. 2009). Pupping for both species occurs in both U.S. and Canadian waters of the western North Atlantic. Although there are at least three gray seal pupping colonies in U.S., the majority of harbor seal pupping likely occurs in U.S. waters and the majority of gray seal pupping likely occurs in Canadian waters. Observations of harp and hooded seals are less common in U.S. EEZ waters. Both species form aggregations for pupping and breeding off eastern Canada in the late winter/early spring. They then travel to more northern latitudes for molting and summer feeding (Waring et al. 2006). Both species have a seasonal presence in U.S. waters from Maine to New Jersey, based on sightings, stranding, and fishery bycatch information (Waring et al. 2009).

4.4.2.5 Atlantic Sturgeon

Atlantic sturgeon is an anadromous species that spawns in relatively low salinity, river environments, but spends most of its life in the marine and estuarine environments from Labrador, Canada to the Saint Johns River, Florida (Holland and Yelverton 1973, Dovel and Berggen 1983, Waldman et al. 1996, Kynard and Horgan 2002, Dadswell 2006, ASSRT 2007). Tracking and tagging studies have shown that subadult and adult Atlantic sturgeon that originate from different rivers mix within the marine environment, utilizing ocean and estuarine waters for life functions such as foraging and overwintering (Stein et al. 2004a, Dadswell 2006, ASSRT 2007, Laney et al. 2007, Dunton et al. 2010). Fishery-dependent data as well as fishery-independent data demonstrate that Atlantic sturgeon use relatively shallow inshore areas of the continental shelf; primarily waters less than 50 m (Stein et al. 2004b, ASMFC 2007, Dunton et al. 2010). The data also suggest regional differences in Atlantic sturgeon depth distribution with sturgeon observed in waters primarily less than 20 m in the Mid-Atlantic Bight and in deeper waters in the Gulf of Maine (Stein et al. 2004b, ASMFC 2007, Dunton et al. 2010). Information

on population sizes for each Atlantic sturgeon DPS is very limited. Based on the best available information, NMFS has concluded that bycatch, vessel strikes, water quality and water availability, dams, lack of regulatory mechanisms for protecting the fish, and dredging are the most significant threats to Atlantic sturgeon.

Comprehensive information on current abundance of Atlantic sturgeon is lacking for all of the spawning rivers (ASSRT 2007). Based on data through 1998, an estimate of 863 spawning adults per year was developed for the Hudson River (Kahnle et al. 2007), and an estimate of 343 spawning adults per year is available for the Altamaha River, GA, based on data collected in 2004-2005 (Schueller and Peterson 2006). Data collected from the Hudson River and Altamaha River studies cannot be used to estimate the total number of adults in either subpopulation, since mature Atlantic sturgeon may not spawn every year, and it is unclear to what extent mature fish in a non-spawning condition occur on the spawning grounds. Nevertheless, since the Hudson and Altamaha Rivers are presumed to have the healthiest Atlantic sturgeon subpopulations within the United States, other U.S. subpopulations are predicted to have fewer spawning adults than either the Hudson or the Altamaha (ASSRT 2007). It is also important to note that the estimates above represent only a fraction of the total population size as spawning adults comprise only a portion of the total population (e.g., this estimate does not include subadults and early life stages).

4.4.2.6 Species Not Likely to be Affected

NMFS has determined that the action being considered in this EA is not likely to adversely affect shortnose sturgeon, the Gulf of Maine distinct population segment (DPS) of Atlantic salmon, hawksbill sea turtles, blue whales, or sperm whales, all of which are listed as endangered species under the ESA. Further, the action considered in this EA is not likely to adversely affect North Atlantic right whale (discussed in Section 4.4.2.2) critical habitat. The following discussion provides the rationale for these determinations.

Shortnose sturgeon are benthic fish that mainly occupy the deep channel sections of large rivers. They occupy rivers along the western Atlantic coast from St. Johns River in Florida, to the Saint John River in New Brunswick, Canada. Although, the species is possibly extirpated from the Saint Johns River system. The species is anadromous in the southern portion of its range (i.e., south of Chesapeake Bay), while some northern populations are amphidromous (NMFS 1998). Since sectors would not operate in or near the rivers where concentrations of shortnose sturgeon are most likely found, it is highly unlikely that sectors would affect shortnose sturgeon.

The wild populations of Atlantic salmon are listed as endangered under the ESA. Their freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River. Juvenile salmon in New England rivers typically migrate to sea in spring after a one- to three-year period of development in freshwater streams. They remain at sea for two winters before returning to their U.S. natal rivers to spawn (Kocik and Sheehan 2006). Results from a 2001-2003 post-smolt trawl survey in the nearshore waters of the Gulf of Maine indicate that Atlantic salmon post-smolts are prevalent in the upper water column throughout this area in mid to late May (Lacroix, Knox, and Stokesbury 2005). Therefore, commercial fisheries deploying small-mesh active gear (pelagic trawls and purse seines within 10 m of the surface) in nearshore waters of the Gulf of Maine may have the potential to incidentally take smolts. However, it is highly unlikely that the action being considered will

affect the Gulf of Maine DPS of Atlantic salmon given that operation of the multispecies fishery does not occur in or near the rivers where concentrations of Atlantic salmon are likely to be found. Additionally, multispecies gear operates in the ocean at or near the bottom rather than near the surface where Atlantic salmon are likely to occur. Thus, this species will not be considered further in this EA.

North Atlantic right whales occur in coastal and shelf waters in the western North Atlantic (NMFS 2005). Section 4.4.2.2 discusses potential fishery entanglement and mortality interactions with North Atlantic right whale individuals. The western North Atlantic population in the U.S. primarily ranges from winter calving and nursery areas in coastal waters off the southeastern U.S. to summer feeding grounds in New England waters (NMFS 2005). North Atlantic Right Whales use five well-known habitats annually, including multiple in northern waters. These northern areas include the Great South Channel (east of Cape Cod); Cape Cod and Massachusetts Bays; the Bay of Fundy; and Browns and Baccaro Banks, south of Nova Scotia. NMFS designated the Great South Channel and Cape Cod and Massachusetts Bays as Northern Atlantic right whale critical habitat in June 1994 (59 FR 28793). NMFS has designated additional critical habitat in the southeastern U.S. Multispecies gear operates in the ocean at or near the bottom rather than near the surface. It is not known whether the bottom-trawl, or any other type of fishing gear, has an impact on the habitat of the Northern right whale (59 FR 28793). As discussed in the FY 2010 and FY 2011 sector EAs and further in Section 5.0, sectors would result in a negligible effect on physical habitat. Therefore, FY 2012 sector operations would not result in a significant impact on Northern right whale critical habitat. Further, mesh sizes used in the multispecies fishery do not significantly impact the Northern right whale's planktonic food supply (59 FR 28793). Therefore, Northern right whale food sources in areas designated as critical habitat would not be adversely affected by sectors. For these reasons, Northern right whale critical habitat will not be considered further in this EA.

The hawksbill turtle is uncommon in the waters of the continental U.S. Hawksbills prefer coral reefs, such as those found in the Caribbean and Central America. Hawksbills feed primarily on a wide variety of sponges, but also consume bryozoans, coelenterates, and mollusks. The Culebra Archipelago of Puerto Rico contains especially important foraging habitat for hawksbills. Nesting areas in the western North Atlantic include Puerto Rico and the Virgin Islands. There are accounts of hawksbills in south Florida and individuals have been sighted along the east coast as far north as Massachusetts; however, east coast sightings north of Florida are rare (NMFS 2009a). Operations in the NE multispecies fishery would not occur in waters that are typically used by hawksbill sea turtles. Therefore, it is highly unlikely that fishery operations would affect this turtle species.

Blue whales do not regularly occur in waters of the U.S. EEZ (Waring et al. 2002). In the North Atlantic region, blue whales are most frequently sighted from April to January (Sears 2002). No blue whales were observed during the Cetacean and Turtle Assessment Program surveys of the mid- and North Atlantic areas of the outer continental shelf (Cetacean and Turtle Assessment Program 1982). Calving for the species occurs in low latitude waters outside of the area where the sectors would operate. Blue whales feed on euphausiids (krill) that are too small to be captured in fishing gear. There were no observed fishery-related mortalities or serious injuries to blue whales between 1996 and 2000 (Waring et al. 2002). The species is unlikely to occur in areas where the sectors would operate, and sector operations would not affect the availability of blue whale prey or areas where calving and nursing of young occurs. Therefore, the Proposed Action would not be likely to adversely affect blue whales.

Unlike blue whales, sperm whales do regularly occur in waters of the U.S. EEZ. However, the distribution of the sperm whales in the U.S. EEZ occurs on the continental shelf edge, over the continental slope, and into mid-ocean regions (Waring et al. 2007). Sperm whale distribution is typically concentrated east-northeast of Cape Hatteras in winter and shifts northward in spring when whales are found throughout the MA Bight (Waring et al. 2006). Distribution extends further northward to areas north of GB and the Northeast Channel region in summer and then south of New England in fall, back to the MA Bight (Waring et al. 1999). In contrast, the sectors would operate in continental shelf waters. The average depth over which sperm whale sightings occurred during the Cetacean and Turtle Assessment Program surveys was 5,879 ft (1,792 m) (Cetacean and Turtle Assessment Program 1982). Female sperm whales and young males almost always inhabit open ocean, deep water habitat with bottom depths greater than 3,280 ft (1,000 m) and at latitudes less than 40° N (Whitehead 2002). Sperm whales feed on large squid and fish that inhabit the deeper ocean regions (Perrin et al. 2002). There were no observed fishery-related mortalities or serious injuries to sperm whales between 2001 and 2005 (Waring et al. 2007). Sperm whales are unlikely to occur in water depths where the sectors would operate, sector operations would not affect the availability of sperm whale prey or areas where calving and nursing of young occurs. Therefore, the Proposed Action would not be likely to adversely affect sperm whales.

Although marine turtles and large whales could be potentially affected through interactions with fishing gear, NMFS has determined that the continued authorization of the multispecies fishery, and therefore the FY 2011 sectors, would not have any adverse effects on the availability of prey for these species. Sea turtles feed on a variety of plants and animals, depending on the species. However, none of the turtle species are known to feed upon groundfish. Right whales and sei whales feed on copepods (Horwood 2002, Kenney 2002). The multispecies fishery will not affect the availability of copepods for foraging right and sei whales because copepods are very small organisms that will pass through multispecies fishing gear rather than being captured in it. Humpback whales and fin whales also feed on krill as well as small schooling fish such as sand lance, herring and mackerel (Aguilar 2002, Clapham 2002). Multispecies fishing gear operates on or very near the bottom. Fish species caught in multispecies gear are species that live in benthic habitat (on or very near the bottom) such as flounders. As a result, this gear does not typically catch schooling fish such as herring and mackerel that occur within the water column. Therefore, the continued authorization of the multispecies fishery or the approval of the FY 2012 sector operations plans will not affect the availability of prey for foraging humpback or fin whales.

4.4.3 Interactions Between Gear and Protected Resources

NMFS categorizes commercial fisheries based on a two-tiered, stock-specific fishery classification system that addresses both the total impact of all fisheries on each marine mammal stock as well as the impact of individual fisheries on each marine mammal stock. NMFS bases the system on the numbers of animals per year that incur incidental mortality or serious injury due to commercial fishing operations relative to a marine mammal stock's Potential Biological Removal (PBR) level.[4] Tier 1 takes into account the cumulative mortality and serious injury to

[4] PBR is the maximum number of animals, not including natural mortalities, which may be removed from a marine mammal stock while allowing that stock to reach or maintain its

marine mammals caused by commercial fisheries. Tier 2 considers marine mammal mortality and serious injury caused by the individual fisheries. This EA uses Tier 2 classifications to indicate how each type of gear proposed for use in the Proposed Action may affect marine mammals (NMFS 2009b). Table 13 identifies the classifications used in the final List of Fisheries (for FY 2010 (75 FR 68468; November 8, 2010; NMFS 2010b), which are broken down into Tier 2 Categories I, II, and III. A proposed List of Fisheries for FY 2012 was published on June 28, 2011 (76 FR 37716), but the List of Fisheries for FY 2012 has not yet been adopted and is not discussed further in this document.

Table 13. Descriptions of the Tier 2 Fishery Classification Categories

Category	Category Description
Category I	A commercial fishery that has frequent incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is, by itself, responsible for the annual removal of 50 percent or more of any stock's PBR level.
Category II	A commercial fishery that has occasional incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is one that, collectively with other fisheries, is responsible for the annual removal of more than 10 percent of any marine mammal stock's PBR level and that is by itself responsible for the annual removal of between 1 percent and 50 percent, exclusive of any stock's PBR.
Category III	A commercial fishery that has a remote likelihood of, or no known incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is one that collectively with other fisheries is responsible for the annual removal of: a. Less than 50 percent of any marine mammal stock's PBR level, or b. More than 1 percent of any marine mammal stock's PBR level, yet that fishery by itself is responsible for the annual removal of 1 percent or less of that stock's PBR level. In the absence of reliable information indicating the frequency of incidental mortality and serious injury of marine mammals by a commercial fishery, the Assistant Administrator would determine whether the incidental serious injury or mortality is "remote" by evaluating other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, qualitative data from logbooks or fisher reports, stranding data, and the species and distribution of marine mammals in the area or at the discretion of the Assistant Administrator.

Interactions between gear and a given species occur when fishing gear overlaps both spatially and trophically with the species' niche. Spatial interactions are more "passive" and involve inadvertent interactions with fishing gear when the fishermen deploy gear in areas used by protected resources. Trophic interactions are more "active" and occur when protected species attempt to consume prey caught in fishing gear and become entangled in the process. Spatial and trophic interactions can occur with various types of fishing gear used by the multispecies fishery through the year. Many large and small cetaceans and sea turtles are more prevalent within the operations area during the spring and summer. However they are also relatively abundant during the fall and would have a higher potential for interaction with sector activities that occur during these seasons. Although harbor seals may be more likely to occur in the operations area between fall and spring, harbor and gray seals are year-round residents. Therefore, interactions could occur year-round. The uncommon occurrences of hooded and harp seals in the operations area

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optimum sustainable population.

are more likely to occur during the winter and spring, allowing for an increased potential for interactions during these seasons.

Although interactions between protected species and gear deployed by the Northeast multispecies fishery would vary, interactions generally include:

- Becoming caught on hooks (bottom longlines)
- Entanglement in mesh (gillnets and trawls)
- Entanglement in the float line (gillnets and trawls)
- Entanglement in the groundline (gillnets, trawls, and bottom longlines)
- Entanglement in anchor lines (gillnets and bottom longlines), or
- Entanglement in the vertical lines that connect gear to the surface and surface systems (gillnets, traps/pots, and bottom longlines).

NMFS assumes the potential for entanglements to occur is higher in areas where more gear is set and in areas with higher concentrations of protected species.

Table 14 lists the marine mammals known to have had interactions with gear used by the Northeast multispecies fishery. This gear includes sink gillnets, traps/pots, bottom trawls, and bottom longlines within the Northeast multispecies region, as excerpted from the List of Fisheries for FY 2011 ([75 FR 68468; November 8, 2010], also see Waring et al. 2009). Sink gillnets have the greatest potential for interaction with protected resources, followed by bottom trawls. There are no observed reports of interactions between longline gear and marine mammals in FY 2009 and FY 2010. However, interactions between the pelagic longline fishery and both pilot whales and Risso's dolphins led to the development of the Pelagic Longline Take Reduction Plan.

Table 14. Marine Mammals Impacts Based on Groundfishing Gear and Northeast Multispecies Fishing Areas (Based on 2010 List of Fisheries)

Fishery		Estimated Number of Vessels/Persons	Marine Mammal Species and Stocks Incidentally Killed or Injured
Category	Type		
Category I	MA gillnet	5,495	Bottlenose dolphin, Northern Migratory coastal [a] Bottlenose dolphin, Southern Migratory coastal [a] Bottlenose dolphin, Northern NC estuarine system [a] Bottlenose dolphin, Southern NC estuarine system [a] Bottlenose dolphin, WNA offshore Common dolphin, WNA Gray seal, WNA Harbor porpoise, GOM/Bay of Fundy Harbor seal, WNA Harp seal, WNA Humpback whale, Gulf of Maine Long-finned pilot whale, WNA Minke whale, Canadian east coast Risso's dolphin, WNA Short-finned pilot whale, WNA White-sided dolphin, WNA
	Northeast sink gillnet	7,712	Bottlenose dolphin, WNA, offshore Common dolphin, WNA Fin whale, WNA Gray seal, WNA Harbor porpoise, GOM/Bay of Fundy Harbor seal, WNA Harp seal, WNA Hooded seal, WNA Humpback whale, GOM Minke whale, Canadian east coast North Atlantic right whale, WNA Risso's dolphin, WNA White-sided dolphin, WNA

Fishery		Estimated	
Category	Type	Number of Vessels/Persons	Marine Mammal Species and Stocks Incidentally Killed or Injured
Category II	MA bottom trawl	1,182	Bottlenose dolphin, WNA offshore Common dolphin, WNA [a] Long-finned pilot whale, WNA [a] Short-finned pilot whale, WNA [a] White-sided dolphin, WNA
	Northeast bottom trawl	1,635	Common dolphin, WNA Harbor porpoise, GOM/ Bay of Fundy Harbor seal, WNA Harp seal, WNA Long-finned pilot whale, WNA Short-finned pilot whale, WNA White-sided dolphin, WNA [a]
	Atlantic mixed species trap/pot [c]	1,912	Fin whale, WNA Humpback whale, GOM
Category III	Northeast/MA bottom longline/hook-and-line	1,183	None documented in recent years

Notes:
[a] Fishery classified based on serious injuries and mortalities of this stock, which are greater than 50 percent (Category I) or greater than 1 percent and less than 50 percent (Category II) of the stock's PBR.
[b] Although not included in the 2010 List of Fisheries, Waring et al. (2009) indicates that nine gray seal mortalities in 2007 were attributed to incidental capture in the northeast bottom trawl.
[c] This fishery is classified by analogy.

Marine mammals are taken in gillnets, trawls, and trap/pot gear used in the Northeast multispecies area. Documented protected species interactions in Northeast sink gillnet fisheries include harbor porpoise, white-sided dolphin, harbor seal, gray seal, harp seal, hooded seal, long-finned pilot whale, offshore bottlenose dolphin, Risso's dolphin, and common dolphin. Not mentioned here are possible interactions with sea turtles and sea birds. Multispecies fishing vessels would be required to adhere to measures in the Atlantic Large Whale Take Reduction Plan (ALWTRP) to minimize potential impacts to certain cetaceans. ALWTRP was developed to address entanglement risk to right, humpback, and fin whales, and to acknowledge benefits to minke whales in specific Category I or II commercial fishing efforts that utilize traps/pots and gillnets. The ALWTRP calls for the use of gear markings, area restrictions, weak links, and sinking groundline. Fishing vessels would be required to comply with the ALWTRP in all areas where gillnets were used. Fishing vessels would also need to comply with the Bottlenose Dolphin Take Reduction Plan and Harbor Porpoise Take Reduction Plan (HPTRP) within the Northeast multispecies area. The Bottlenose Dolphin Take Reduction Plan restricts night time use of gillnets in the MA gillnet region. The HPTRP aims to reduce interactions between the harbor porpoise and gillnets in the Gulf of Maine. The HPTRP implements seasonal area closures and the seasonal use of pingers (acoustic devices that emit a sound) to deter harbor porpoises from approaching the nets.

Data from sector trips in FY 2010 and FY 2009 indicate no overall significant increase in take of protected resources or sea turtles. There may be a decrease in annual take in sink gillnet gear, and the data suggest an overall decrease in the winter take, and in the fall for turtles. However, this decrease in take corresponds well to the decrease in ACL. Within individual stat areas there does appear to be some trends in take of protected resources (includes all species).

Sea turtles have been caught and injured or killed in multiple types of fishing gear, including gillnets, trawls, and hook and line gear. However, impact due to inadvertent interaction with trawl gear is almost twice as likely to occur when compared with other gear types (NMFS 2009c). Interaction with trawl gear is more detrimental to sea turtles as they can be caught within the trawl itself and will drown after extended periods underwater. A study conducted in the MA region showed that bottom trawling accounts for an average annual take of 616 loggerhead sea turtles, although Kemp's ridleys and leatherbacks were also caught during the study period (Murray 2006). Sea turtles generally occur in more temperate waters than those in the Northeast multispecies area. Gillnets are considered more detrimental to marine mammals such as pilot whales, dolphins, porpoises, and seals, as well as large marine whales; however, protection for marine mammals would be provided through various Take Reduction Plans outlined above.

Atlantic sturgeon are known to be captured in sink gillnet, drift gillnet, and otter trawl gear (Stein et al. 2004a, ASMFC TC 2007). Of these gear types, sink gillnet gear poses the greatest known risk of mortality for bycaught sturgeon (ASMFC TC 2007). Sturgeon deaths were rarely reported in the otter trawl observer dataset (ASMFC TC 2007). However, the level of mortality after release from the gear is unknown (Stein et al. 2004a). In a review of the Northeast Fishery Observer Program (NEFOP) database for the years 2001-2006, observed bycatch of Atlantic sturgeon was used to calculate bycatch rates that were then applied to commercial fishing effort to estimate overall bycatch of Atlantic sturgeon in commercial fisheries. This review indicated sturgeon bycatch occurred in statistical areas abutting the coast from Massachusetts (statistical area 514) to North Carolina (statistical area 635) (ASMFC TC 2007). Based on the available data, participants in an ASMFC bycatch workshop concluded that sturgeon encounters tended to occur in waters less than 50 m throughout the year, although seasonal patterns exist (ASMFC TC 2007). The ASMFC analysis determined that an average of 650 Atlantic sturgeon mortalities occurred per year (during the 2001 to 2006 timeframe) in sink gillnet fisheries. Stein et al. (2004a), based on a review of the NMFS Observer Database from 1989-2000, found clinal variation in the bycatch rate of sturgeon in sink gillnet gear with lowest rates occurring off of Maine and highest rates off of North Carolina for all months of the year.

In an updated, preliminary analysis, the Northeast Fisheries Science Center (NEFSC) was able to use data from the NEFOP database to provide updated estimates for the 2006 to 2010 timeframe. Data were limited by observer coverage to waters outside the coastal boundary (fzone>0) and north of Cape Hatteras, NC. Sturgeon included in the data set were those identified by federal observers as Atlantic sturgeon, as well as those categorized as unknown sturgeon. At this time, data were limited to information collected by the NEFOP; limited data collected in the At-Sea Monitoring Program were not included, although preliminary views suggest the incidence of sturgeon encounters was low.

The preliminary analysis apportioned the estimated weight of all sturgeon takes to specific fishery management plans. The analysis estimates that between 2006 and 2010, a total of 15,587 lbs of Atlantic sturgeon were captured and discarded in bottom otter trawl (7,740 lbs) and sink gillnet (7,848 lbs) gear. The analysis found that 7.1% (549.5 lbs) of the weight of sturgeon discards in bottom otter trawl gear could be attributed to the large mesh gillnet fisheries if a correlation of FMP species landings (by weight) was used as a proxy for fishing effort; this equates to 3.5% of the weight of sturgeon discards in both gear types.

These additional data support the conclusion from the earlier bycatch estimates that the multispecies fishery may interact with Atlantic sturgeon from now until the time a final listing

determination is made for the species, but the magnitude of that interaction during the timeframe of interest is not likely to cause an appreciable reduction in survival and recovery. If any of the proposed Atlantic sturgeon DPSs are listed as endangered or threatened under the Endangered Species Act, the Biological Opinion for the multispecies fisheries will be reinitiated, and additional evaluation will be included to describe any impacts of the fisheries on Atlantic sturgeon and define any measures needed to mitigate those impacts, if necessary. It is anticipated that any measures, terms and conditions included in an updated Biological Opinion will further reduce impacts to the species.

If Atlantic sturgeon is listed, it is expected that both the decision and the completion of the Biological Opinion will occur before the beginning of the 2012 multispecies fishing year (May1).

4.5 Human Communities/Social-Economic Environment

This EA considers changes to the multispecies FMP and evaluates the effect such changes may have on people's way of life, traditions, and community. These "social impacts" may be driven by changes in fishery flexibility, opportunity, stability, certainty, safety, and/or other factors. Although it is possible that social impacts would be solely experienced by individual fishery participants, it is more likely that impacts would be experienced across communities, gear cohorts, and/or vessel size classes.

The remainder of this section reviews the Northeast multispecies fishery and describes the human communities potentially impacted by the Proposed Action. This includes a description of the fishery participants as well as their homeports.

4.5.1 Overview of New England Groundfish Fishery

A detailed overview of the New England groundfish fishery is presented in FW 45 (NEFMC 2011). In summary, New England's fishery has been identified with groundfishing both economically and culturally for over 400 years. Broadly described, the Northeast multispecies fishery includes the landing, processing, and distribution of commercially important fish that live on the sea bottom. In the early years, the Northeast multispecies fishery related primarily to cod and haddock, but evolved to include a total of 13 large-mesh species of groundfish (Atlantic cod, haddock, pollock, yellowtail flounder, witch flounder, winter flounder, windowpane flounder, American plaice, Atlantic halibut, redfish, ocean pout, white hake, and Atlantic wolffish) harvested from three geographic areas (GOM, GB, and MA Bight/SNE) and representing twenty distinct stocks.

Prior to the industrial revolution, the groundfish fishery focused primarily on cod, supported a hook and line fishery that included hundreds of sailing vessels and shore-side industries including salt mining, ice harvesting, and boat building. From 1900 to 1930, the fleet transitioned to steam powered trawlers and increasingly targeted haddock for delivery to the fresh and frozen fillet markets. Foreign effort levels remained elevated until the passage of the Magnuson Fishery Conservation and Management Act in 1976. The exclusion of the foreign fishermen in 1976, coupled with technological advances and some strong classes of cod and haddock, caused a rapid increase in the number and efficiency of U.S. vessels participating in the Northeast groundfish fishery in the late 1970's.

In 1986, NEFMC implemented the Northeast Multispecies FMP with the goal of rebuilding stocks. From that time, the multispecies fishery has been administered as a limited access fishery managed through a variety of effort control measures including DAS, area closures, trip limits, minimum size limits, and gear restrictions. In 2004, the final rule implementing Amendment 13 to the FMP allowed for self-selected groups of limited access groundfish permit holders to form sectors that operate under an ACE – a quota that limits catch. In 2007, the Northeast multispecies fishery included 2,515 permits, about 1,500 of which are limited access, and about 690 active fishing vessels. Those vessels include a range of gear types including hook, bottom longline, gillnet, and trawlers (NEFMC 2009a). In FY 2009, between 40 and 50 of these vessels were members of the GB Cod Sectors. In FY 2010, approximately 762 vessels were associated with a sector. The remaining vessels were common pool groundfish vessels.

There are over 100 communities that are homeport to one or more Northeast groundfishing vessels. These ports are distributed throughout the coastal northeast and in New Jersey. Vessels from these ports pursue stocks in three geographic regions: GOM, GB, and SNE. In 2007, the estimated dockside value of these groundfish landings was less than $60 million and represented approximately ½ of the total revenue received on trips where groundfish were landed. Many groundfish captains and crew are second- or third-generation fishermen who hope to pass the tradition on to their children. This occupational transfer is an important component of community continuity as an important alternative occupation in these port areas, tourism, is largely seasonal.

There is little hard socio-economic data upon which to evaluate the regional or community specific importance of the multispecies fishery. In addition to the direct employment of captains and crew, the industry is known to support ancillary businesses such as gear, tackle, and bait suppliers; fish processing and transportation; marine construction and repair; and restaurants. The perceived importance of these economic interrelationships is reflected by the creation of the Cape Cod regional competitiveness council, government recommendations that NEFMC begin compiling the data necessary to evaluate the importance of the fishery to the regional economy, and the inclusion of social and economic impact analysis in the NEFMC research priorities and data needs 2009-2013.

4.5.2 Economic Status of Commercial Groundfish Harvesting Sector

4.5.2.1 Number of Vessels

In 2010, the first year of sector management, the Northeast multispecies fishery issued 1,347 permits, not including groundfish limited access eligibilities held as confirmation of permit history (CPH). Out of these permits, 740 vessels belonged to a sector and 607 remained in the common pool (Table 15). Not all permitted vessels were active and not all active vessels fished groundfish. Of the 740 sector vessels issued groundfish permits, only 444 were considered active, having revenue from any landed species, and only 305 of those had revenue from at least one groundfish trip. Among common pool vessels, 456 were considered active, and only 145 vessels had made at least one groundfish trip.

Table 15. Number of vessels by fishing year.

	2007	2008	2009	2010		
				Overall	Sector Vessels	Common Pool
Vessels issued limited access groundfish permits as of May 1 each year*	1,413	1,410	1,381	1,347	740	607
With limited access groundfish permit and revenue from any species	1,082	1,012	973	900	444	456
With limited access groundfish permit and revenue from at least one groundfish trip	658	611	566	450	305	145
Number and percent of inactive (no landings) vessels	331 (32%)	398 (28%)	408 (30%)	447 (33%)	296 (40%)	151 (25%)

* These numbers exclude groundfish limited access eligibilities held as Confirmation of Permit History (CPH). Starting in 2010, Amendment 16 authorized CPH owners to join Sectors and to lease DAS. For purposes of comparison, CPH vessels are not included in the 2010 data for either Sector or Common Pool.

A key aspect of Amendment 16, and catch share programs in general, is the ability to jointly decide how a sector will harvest its ACE through redistribution of PSC within a sector and the ability to transfer ACE between sectors. Because it is then not possible to identify the extent to which inactive vessels in sectors may benefit if other sector vessels harvest their allocation, changes in the number of inactive vessels may describe a transfer of allocation and not necessarily vessels exiting the fishery. In 2010, 447 vessels (33%) were inactive (no landings). Of these inactive vessels, 296 were sector vessels and 151 were common pool vessels. The number of inactive vessels in 2010 can be compared to the number of inactive vessels in other years: 331 vessels (32 percent) in 2007, 398 vessels (28 percent) in 2008, and 408 vessels (30 percent) in 2009.

4.5.2.2 Landings and Revenues

4.5.2.2.1 Landings and Revenue

Total groundfish landings on trips made by vessels possessing a limited access groundfish permit in 2010 were 58.5 million pounds, which had declined from a recent high of 72.2 million pounds in 2008. Because only 20 groundfish stocks are limited by sector allocations it is important to consider the landings of non-groundfish species and groundfish species separately as a means of describing any possible shift in effort to other fisheries. Non-groundfish landings made by limited access vessels also declined from a high of 205.0 million pounds in 2008 to 180.6 million pounds in 2010. The total landings of all species by limited access vessels in the Northeast multispecies fishery was about 239.1 million pounds in 2010. This compares to landings ranging from 259.5 million pounds to 277.1 million pounds in the 2007–2009 fishing years (Table 16). While sector vessels accounted for 65 percent of all landings made in 2010, sector vessels also made 98 percent of groundfish landings and 54 percent of non-groundfish landings.

Table 16. Landings in thousands of pounds per year.

Landings	Year					
	2007	2008	2009	2010	2010	
					Sector Vessels	Common Pool
Total Landings	259,448	277,118	262,679	239,103	155,032	84,072
Total Groundfish Landings	64,004	72,162	70,568	58,492	57,068	1,424
Total Non-groundfish Landings	195,444	204,955	192,111	180,611	97,963	82,647

Combined, 171 million (live) pounds of ACE was allotted to the sectors in 2010 but only 65 million (live) pounds were landed. Of the 16 groundfish stocks that sectors were given allocation, only landings of 6 stocks approached (>80 percent conversion) the catch limit set by the total allocated ACE (Table 17). The majority of the unrealized landings were caused by a failure to land GB haddock that when combined, East and West GB haddock, accounted for 66 million pounds (62 percent) of the un-landed ACE.

Table 17. Catch and ACE at the stock level (live lbs).

Stock	Allocated ACE	2010 Catch	% caught
GB cod, East	690,614	559,490	81%
GB cod, West	6,317,690	5,441,462	86%
GOM cod	9,355,985	7,911,669	85%
GB haddock, East	24,875,632	4,094,549	16%
GB haddock, West	59,039,163	14,171,789	24%
GOM haddock	1,683,057	818,239	49%
Plaice	5,836,518	3,336,272	57%
Pollock	34,156,917	11,483,386	34%
Redfish	14,109,702	4,702,621	33%
White hake	5,292,674	4,951,889	94%
GB winter flounder	3,980,218	3,048,553	77%
GOM winter flounder	288,899	176,784	61%
Witch flounder	1,745,117	1,540,038	88%
CC/GOM yellowtail flounder	1,581,720	1,233,481	78%
GB yellowtail flounder	1,738,477	1,632,512	94%
SNE/MA yellowtail flounder	504,685	351,362	70%
Grand Total	171,197,069	65,454,096	38%

Among vessels with limited access groundfish permits, groundfish revenues in 2010 were $83.3 million which is lower than 2007 – 2009 nominal revenues which ranged from $85.1 million in 2009 to $90.1 million in 2008 (Table 18). Non-groundfish revenues in 2010 rose to $214.4 million, higher than 2007 – 2009 non-groundfish revenues which ranged from $186.1 million in 2009 to $209.2 million in 2007. Revenues from all species for 2010 totaled $297.7 million. This compares to revenues that ranged from a low of $271.1 million in 2009 to a high of $298.2 million in 2007. Although total landings by vessels possessing a limited access groundfish permit in 2010 were down compared to the previous three years, combined revenues

from groundfish and non-groundfish species were almost as high as the highest earning year. Sector vessels accounted for about 67 percent of all revenue earned by limited access permitted vessels in 2010. Sector vessels also earned 97 percent of revenue from groundfish landings and 55 percent of non-groundfish revenue.

Table 18. Revenue in thousands of dollars per year.

Revenue	Year					
	2007	2008	2009	2010	2010	
					Sector Vessels	Common Pool
Total Revenue	$298,246	$291,479	$271,140	$297,720	$198,264	$99,456
Total Groundfish Revenue	$89,055	$90,132	$85,088	$83,294	$81,026	$2,268
Total Non-groundfish Revenue	$209,191	$201,347	$186,052	$214,426	$117,239	$97,188

The following tables present economic data relevant to landings of GOM winter flounder in recent years. Tables 19 and 20 show GOM winter flounder landings and revenue by state and major ports during FYs 2007-2010, respectively. Table 21 lists the average price per pound of GOM winter flounder landings in recent years for several major ports.

Table 19. GOM winter flounder landings and revenue by state and fishing year.

State	2007		2008		2009		2010	
	Landings (lb)	Revenue	Landings (lb)	Revenue	Landings (lb)	Revenue	Landings (lb)	Revenue
ME	27,046	$54,566	9,090	$16,810	1,525	$2,400	1,754	$2,896
NH	8,947	$18,325	9,894	$17,068	10,991	$19,284	2,781	$5,268
MA	538,589	$1,104,651	551,257	$971,221	512,013	$859,404	218,807	$407,023
Other States	599	$1,481	1,060	$1,680	2,547	$4,008	0	$0
Totals	**575,180**	**$1,179,022**	**571,301**	**$1,006,779**	**527,076**	**$885,095**	**223,342**	**$415,187**

Based on dealer data available to NMFS as of December 22, 2011, including an estimate of missing dealer reports.

Table 20. GOM Winter flounder landings and revenue by major ports and fishing year.

Port	2007		2008		2009		2010	
	Landings (lb)	Revenue	Landings (lb)	Revenue	Landings (lb)	Revenue	Landings (lb)	Revenue
Boston, MA	26,371	$54,233	33,133	$64,254	40,566	$68,969	26,603	$45,792
Gloucester, MA	176,999	$361,432	171,579	$294,644	127,226	$228,311	107,782	$195,623
New Bedford, MA	6,900	$14,342	22,646	$39,620	20,166	$35,775	20,879	$49,698
Portland, ME	26,367	$52,940	9,079	$16,787	1,423	$2,258	149	$259
Portsmouth, NH	968	$1,638	2,087	$3,298	2,107	$3,686	1,134	$2,390
Provincetown, MA	91,302	$193,692	86,254	$156,966	53,540	$98,898	13,931	$26,890
Sandwich, MA	86,592	$168,860	98,945	$167,134	131,175	$192,118	16,345	$27,093
Scituate, MA	89,659	$197,156	79,894	$141,984	77,254	$135,394	25,359	$47,589
Total (All Ports)	575,180	$1,179,022	571,301	$1,006,779	527,076	$885,095	223,342	$415,187

Based on dealer data available to NMFS as of December 22, 2011, including an estimate of missing dealer reports.

Table 21. Average price per pound of GOM winter flounder by major port and year.

Port	2007	2008	2009	2010
Boston, MA	$2.06	$1.94	$1.70	$1.72
Gloucester, MA	$2.04	$1.72	$1.79	$1.81
New Bedford, MA	$2.08	$1.75	$1.77	$2.38
Portland, ME	$2.01	$1.85	$1.59	$1.74
Portsmouth, NH	$1.69	$1.58	$1.75	$2.11
Provincetown, MA	$2.12	$1.82	$1.85	$1.93
Sandwich, MA	$1.95	$1.69	$1.46	$1.66
Scituate, MA	$2.20	$1.78	$1.75	$1.88
Total (All Ports)	$2.05	$1.76	$1.68	$1.86

Based on dealer data available to NMFS as of December 22, 2011, including an estimate of missing dealer reports.

This action also has the potential to impact the leasing market for GOM winter flounder. In FY 2010, over 22.2 million lb of groundfish was leased between sectors, or among participants within a sector (intra-sector leasing not controlled or monitored by NMFS), including over 94,000 lb of GOM winter flounder ACE leased. The value of ACE traded was estimated at $13.5 million for all groundfish stocks allocated to sectors, with over half being attributed to leases between unique owners (i.e. unaffiliated entities) (Kitts, et al., 2011). Based on single-stock leases, the price for leasing GOM winter flounder ACE ranged from $0.31 to $1.23 per pound. Data from 2010 show that price for leased ACE dropped by $0.25 in March and April concurrent with a drop in landings late in the FY, suggesting ACE leasing price is linked with the demand for ACE which is, in turn, linked to landings of a particular species (Kitts, et al., 2011).

4.5.2.2.2 Effort

Some of the proposed benefits of a catch share system of management are the potential efficiency gains associated with increasing operational flexibility. Being released from the former effort controls but being held by ACLs, sector vessels were expected to increase their catch per unit effort by decreasing effort. Between 2007 and 2010, the total number of groundfish fishing trips and total days absent on groundfish trips declined by 48 percent and 33 percent, respectively (27,004 trips in 2007 vs. 14,045 trips in 2010; 28,158 days absent in 2007 vs. 18,818 days absent in 2010) (Table 22). Note, in the following analysis, a groundfish trip is defined as a trip where the vessel owner or operator declared, either through the vessel monitoring system or through the interactive voice response system, that the vessel was making a groundfish trip. The following data is taken from different source materials (VMS, etc.) than the data presented earlier in Section 4, and for the reasons stated in Section 4.1, this data may be slightly different than what is presented elsewhere in the document. During this same four-year period, the number of non-groundfish trips, and days absent on non-groundfish trips, increased slightly (46,635 trips in 2007 vs. 47,539 trips in 2010; 35,186 days absent in 2007 vs. 35,220 days absent in 2010) (Table 22). Average trip length on both groundfish and non-groundfish trips were not statistically different during the time series.

Table 22. Effort by active groundfish vessels.

Effort	2007	2008	2009	2010		
				Overall	Sector Vessels	Common Pool
Number of groundfish trips	27,004	26,468	26,032	14,045	11,770	2,275
Number of non-groundfish trips	46,635	46,721	46,815	47,539	20,061	27,478
Number of days absent on groundfish trips	28,158	27,146	24,947	18,818	17,216	1,602
Number of days absent on non-groundfish trips	35,186	36,134	36,397	35,220	17,785	17,435
Average trip length on groundfish trips	7.63	7.82	8.06	8.55	8.70	3.31
Average trip length on non-groundfish trips	5.42	4.78	4.85	4.82	5.52	4.21

4.5.2.2.3 Fleet Characteristics

The groundfish fishery has traditionally been made up of a diverse fleet, comprised of a range of vessels sizes and gear types. Over the years, as vessels entered and exited the fishery, the "typical" characteristics defining the fleet changed as well. The groundfish fleet is divisible into four "vessel size categories," vessels less than 30 feet in length, vessels between 30 and 50 feet in length, vessels between 50 and 75 feet in length and vessels greater than 75 feet in length. As mentioned above, the number of active vessels in 2010 had declined compared to the previous three years and this decline occurred across all vessel size categories between 2007 and 2010. The 30' to < 50' vessel size category, which has the largest number of active vessels, experienced a 17 percent decline (572 to 476 active vessels) during the past 4 years. Most (224) sector vessels fell into this 30' to 50' size category. The 50' to < 75' vessel size category, containing the second largest number of vessels, experienced a 20 percent reduction during 2007 to 2010 (289 to 229 active vessels). The 50' to < 75' size category also had the second largest number of sector vessels with 127. The number of active vessels in both the smallest (less than 30') and largest (75' and above) vessel size categories declined by 12 percent between 2007 and 2010. The decline was consistent across all four years in all vessel size categories.

The 30' to 50' vessel size category also contains the largest number of active groundfish vessels making at least one groundfish trip. Between 2007 and 2010, this vessel size category experienced a 30 percent reduction in active groundfish vessels (350 to 247 vessels). The 50' to 75' vessel size category, containing the second largest number of active groundfish vessels, underwent a 39 percent reduction, declining from 193 vessels in 2007 to 119 vessels in 2010. Between 2007 and 2010, the over 75' vessel size category experienced a 25 percent decline in active groundfish vessels (85 to 63 vessels), while the number of active groundfish vessels in the < 30' vessel size category declined by 24 percent (29 to 22 vessels). The decline was consistent across all four years in all vessel size categories except for the 30' to < 50' category in which the largest decline occurred between 2009 and 2010 (Table 23).

Table 23. Number of active vessels by size class.

Vessel size	2007	2008	2009	2010		
				Overall	Sector Vessels	Common Pool
Vessels with landings from any species						
Less than 30	83	77	83	73	12	61
30 to < 50	572	528	510	476	224	252
50 to < 75	289	267	248	230	127	103
75 and above	139	140	132	121	81	40
Total	1,082	1,012	973	900	444	456
Vessels with at least one groundfish trip						
Less than 30	29	26	33	22	1	21
30 to < 50	351	331	312	246	155	91
50 to < 75	194	175	150	119	88	31
75 and above	84	79	71	63	61	2
Total	658	611	566	450	305	145

Fishing effort, as described by either the number of trips taken or the total number of days absent, varies considerably by vessel size (Table 24). In 2010 more than two thirds of groundfish trips were made by vessels ranging in size from 30 to 50 feet in total length. 2010 saw large reductions in the number of groundfish trips and the total number of days absent on groundfish trips across all vessel size classes compared to the previous three years. In percentage terms, the largest reductions in groundfish trips and days absent on groundfish trips occurred in the less than 30' vessel size category (63 and 59 percent, respectively). However, there were only a couple hundred trips per year in this vessel size category. In terms of magnitude, the 30' to < 50' vessel size category had the greatest reductions in groundfish trips and days absent (8,478 fewer groundfish trips and 4,187 fewer days absent on groundfish trips from 2007 to 2010). The largest vessel class (75' and above) experienced reductions of 12 percent in groundfish trips and 5 perccent in days absent on groundfish trips. The 50' to < 75' vessel size category had reductions of about 59 percent in groundfish trips and about 45 percent in days absent on groundfish trips. From 2007- 2010, non-groundfish trips and the number of days absent on non-groundfish trips, has remained relatively constant for all vessel size classes.

Table 24. Vessel effort (number of trips and days absent) by vessel size category.

Vessel Size	2007	2008	2009	2010		
				Overall	Sector Vessels	Common Pool
Number of groundfish trips						
Less than 30	272	239	412	101	1	100
30 to < 50	18,200	18,453	19,384	9,716	7,957	1,759
50 to < 75	7,018	6,356	4,909	2,895	2,505	390
75 and above	1,525	1,424	1,328	1,337	1,311	26
Total	27,015	26,472	26,033	14,049	11,774	2,275

Number of non-groundfish trips						
Less than 30	2,534	2,249	2,287	2,236	514	1,722
30 to < 50	28,892	27,586	27,316	28,480	11,462	17,018
50 to < 75	11,979	12,825	13,425	13,523	6,419	7,104
75 and above	3,248	4,073	3,792	3,310	1,672	1,638
Total	46,653	46,733	46,820	47,549	20,067	27,482
Number of days absent on groundfish trips						
Less than 30	101	82	147	42	1	41
30 to < 50	9,580	9,586	9,246	5,393	4,237	1,156
50 to < 75	10,701	9,857	8,256	5,745	5,375	370
75 and above	7,750	7,582	7,276	7,182	7,149	33
Total	28,132	27,107	24,925	18,362	16,762	1,600
Number of days absent on non-groundfish trips						
Less than 30	665	678	689	698	210	488
30 to < 50	11,069	10,455	10,504	11,196	4,668	6,528
50 to < 75	13,006	13,557	14,258	13,797	7,491	6,306
75 and above	10,472	11,483	10,969	9,986	5,871	4,115
Total	35,212	36,173	36,419	35,677	18,240	17,437

Historically, a range of gear types are used in the Northeast groundfish fishery, and often a single vessel will use multiple gear types. Examining gear use at the trip level shows that in 2010, trawl gear and gillnets were used by limited access permitted vessels for 36 percent and 56 percent of all groundfish trips, respectively. For non-groundfish trips in 2010, 34 percent were made with pot or trap gear and an additional 34 percent of trips were made using trawl gear.

Since 2007 the percentage of groundfish trips that use trawl gear has declined while those trips that use gillnets has been increasing (Table 25). Changes in the type of gear used could represent a conscious decision by the captain and crew of individual vessels to switch fishing methods and gear or it could represent a more general shift in activity among vessels. Both sector vessel and common pool vessel gear use follow a similar patterns. The primary gear (by percentage of trips) for groundfish trips are gillnets for both sector and common pool vessels. But while the percentage of groundfish trips made by sector vessels are almost equally made using gillnet and trawl gear, the percentage of groundfish trips made by common pool vessels are overwhelmingly made using gillnets.

Table 25. Percentage of groundfish and non-groundfish trips made by gear type.

Gear type	2007	2008	2009	2010		
				Overall	Sector Vessels	Common Pool
Gear use on Groundfish trips						
Gillnet	46.2%	48.9%	53.7%	56.3%	44.8%	11.5%
Handline	2.1%	3.0%	3.8%	2.7%	1.0%	1.7%
Longline	3.4%	2.1%	2.8%	4.0%	3.8%	0.3%

Trawl	46.9%	44.7%	38.6%	35.6%	32.6%	3.0%
Purse seine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pot and Trap	0.2%	0.3%	0.2%	0.4%	0.2%	0.2%
Scallop gear	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	1.1%	0.9%	0.9%	1.1%	0.9%	0.2%
Total	100.0%	100.0%	100.0%	100.0%	83.1%	16.9%
Gear use on non-Groundfish trips						
Gillnet	3.4%	3.8%	4.2%	3.6%	1.0%	2.6%
Handline	12.9%	12.9%	11.9%	12.8%	1.9%	10.9%
Longline	0.3%	0.4%	0.6%	0.3%	0.1%	0.2%
Trawl	26.6%	29.4%	32.9%	33.7%	19.1%	14.7%
Purse seine	0.5%	0.5%	0.5%	0.7%	0.2%	0.5%
Pot and Trap	32.3%	31.8%	31.9%	34.1%	12.5%	21.5%
Scallop gear	10.2%	9.1%	7.1%	6.1%	2.1%	3.9%
Other	13.7%	12.1%	10.8%	8.7%	2.5%	6.1%
Total	100.0%	100.0%	100.0%	100.0%	39.5%	60.5%

4.5.3 Multispecies Fleet Home Ports

Mulitspecies fleet home ports are described in detail in Amendment 16 (NEFMC 2009a) and FW 45 (NEFMC 2011). The descriptions include a discussion on history and commercial fishing activities for each of these ports. The primary source of information for these descriptions is the Community Profiles for Northeast US Fisheries, by NEFSC (2009).

4.5.3.1 Fishing Communities

There are over 100 communities that are homeport to one or more Northeast groundfishing vessels. These ports occur throughout the coastal northeast and mid-Atlantic. Consideration of the social impacts on these communities from proposed fishery regulations is required as part of the NEPA and the MSA. A "fishing community" is defined in the MSA as "a community which is substantially dependent on or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community" (16 U.S.C. § 1802(17)). Determining which fishing communities are "substantially dependant" on, and "substantially engaged" in, the groundfish fishery can be difficult. In recent amendments to the fishery management plan the council has categorized communities dependant on the groundfish resource into primary and secondary port groups so that community data can be cross-referenced with other demographic information. Amendment 16 (NEFMC 2009a) provides descriptions of 26 of the most important communities involved in the multispecies fishery, with further descriptions of Northeast fishing communities in general found on NEFSC's website (http://www.nefsc.noaa.gov/read/socialsci/community_profiles/).

Although it is useful to narrow the focus to individual communities in the analysis of fishing dependence, there are a number of potential issues with the confidential nature of the information. There are privacy concerns with presenting the data in such a way that proprietary

information (landings, revenue, etc.) can be attributed to an individual vessel or a small group of vessels. This is particularly difficult when presenting information on small ports and communities that may only have a small number of vessels and that information can easily be attributed to a particular vessel or individual.

At the state level, Massachusetts has the highest number of active vessels with a limited access groundfish permit. From 2007 to 2010 the total number of active vessels with revenue from any species on all trips declined 17 percent (1,082 to 900). All states have shown a decline in the number of active vessels since 2007, but the largest percentage decline has occurred in Connecticut where the number of active vessels dropped 33% by 2010 (Table 26). Just over half of the active vessels belonging to a sector have a homeport in Massachusetts (266 vessels), while New Jersey and Connecticut are the two states in the North East with the fewest vessels belonging to a sector. At the level of home port, there is even greater variation between the ports with regard to the numbers of active vessels.

Table 26. Number of active vessels with revenue from any species (all trips) by home port and state.

Home Port State/City		Year					
		2007	2008	2009	2010		
					Overall	Sector Vessels	Common Pool
CT		18	13	13	12	4	8
MA		544	502	488	446	266	180
	BOSTON	80	69	66	56	40	16
	CHATHAM	46	41	44	43	31	12
	GLOUCESTER	124	116	113	110	71	39
	NEW BEDFORD	93	91	87	71	50	21
	SCITUATE	19	20	20	16	10	6
ME		128	116	115	107	64	43
	PORTLAND	22	18	16	16	14	2
NH		70	65	62	57	37	20
	PORTSMOUTH	23	18	19	18	12	6
	RYE	16	16	15	14	10	4
NJ		67	71	63	58	2	56
	BARNEGAT LIGHT	21	19	16	15		15
NY		98	100	96	94	15	79
	MONTAUK	37	40	40	39	9	30
RI		110	104	95	88	43	45
	NEWPORT	20	19	16	14	3	11
	POINT JUDITH	58	54	49	47	34	13
All Other States		47	41	41	38	13	25
Grand Total		1,082	1,012	973	900	444	456

Massachusetts is also the state with the highest number of active vessels with revenue from at least one groundfish trip. From 2007 to 2010 the total number of active vessels with

revenue from at least one groundfish trip declined 32 percent (658 to 450). While all states showed a decline in the number of vessels making groundfish trips the largest percentage decline (51%: 41 to 20 vessels) occurred in New Jersey (Table 27). Of the sector vessels making groundfish trips in 2010 almost two thirds of them have a homeport in Massachusetts (191 vessels). Again, New Jersey and Connecticut are the two states with the fewest sector vessels making groundfish trips.

Table 27. Number of vessels with revenue from at least one groundfish trip by home port and state.

Home Port State/City		Year					
		2007	2008	2009	2010		
					Overall	Sector Vessels	Common Pool
CT		9	8	8	7	3	4
MA		341	321	312	240	191	49
	BOSTON	54	49	43	36	33	3
	CHATHAM	26	27	28	25	22	3
	GLOUCESTER	95	88	96	75	60	15
	NEW BEDFORD	60	62	53	33	29	4
	SCITUATE	12	14	14	8	8	
ME		78	69	63	42	37	5
	PORTLAND	20	16	14	14	13	1
NH		44	42	43	32	26	6
	PORTSMOUTH	14	11	13	10	8	2
	RYE	11	11	11	8	7	1
NJ		41	34	25	20	1	19
	BARNEGATE LIGHT	16	11	11	9		9
NY		52	56	44	41	8	33
	MONTAUK	20	24	18	19	5	14
RI		78	70	60	57	34	23
	NEWPORT	11	11	8	7	2	5
	POINT JUDITH	43	36	32	33	28	5
All Other States		15	11	11	11	5	6
Grand Total		658	611	566	450	305	145

5.0 Analysis of Impacts

5.1 Biological Impacts

5.1.1 Impacts on the Physical Environment/Habitat/EFH

5.1.1.1 No Action

Under this alternative, there would be no change to the GOM winter flounder status determination criteria or FY 2011 catch levels for this stock. Because the status determination criteria are an abstract specification, it would have no impact on essential fish habitat. The No Action catch limits are consistent with the fishing mortality targets of Amendment 16, and the catch limits specified by FW 44. Because the GOM winter flounder catch limits would not change under the No Action Alternative, the No Action Alternative would not impact fishing opportunities or effort, and would not impact the interactions of groundfish gear with EFH in contrast to the proposed action that would result in increased fishing effort and impacts to EFH that are expected to be negligible.

5.1.1.2 Proposed Action (Preferred Alternative)

Under the proposed action, the GOM winter flounder status determination criteria and FY 2011 catch levels would be revised for the remainder of FY 2011 (January – April 2012). Because the status determination criteria are an abstract specification, revised criteria would have no impact on EFH. The increase the GOM winter flounder catch levels allowed would be substantial (approximately double the current ACLs specified in the No Action Alternative), and could result in limited additional fishing effort as compared to the No Action Alternative. In general, the impacts of the proposed action on EFH will track the trend in fishing effort. An increase in fishing effort compared to the No Action Alternative would slightly increase the interactions of groundfish gear with EFH, although the scope of this increase with respect to the overall fishery is expected to be negligible.

Similar to impacts to protected species, it is difficult to predict the amount of fishing effort that will occur in FY 2011 due to the novelty and complexity of many aspects of the FMP. Although the amount of fishing effort associated with the proposed action will likely be greater than that associated with the No Action Alternative, the overall fishing effort in the groundfish fishery and effort targeting GOM winter flounder will still likely be reduced compared with previous fishing years, due to the DAS restrictions and catch limits for all stocks implemented for FY 2011. It is highly unlikely that the amount of fishing effort overall, or the amount of fishing behavior targeting GOM winter flounder will be greater than the fishing effort in the fishery during recent years, due to the regulatory constraints. Current regulations require reductions in fishing effort when the sub-ACL for managed stocks is caught by the groundfish fishery in the form of AMs. These AMs include restrictive trip limits or modifications to the DAS counting rules for the common pool and area closures for sector vessels. Thus, such AMs could offset any potential for impacts due to the increased catch limits for GOM winter flounder proposed by this action. Therefore, in the context of the NE multispecies fishery as a whole, and in light of the overall recent effort reductions in the fishery and the constrains in fishing effort in effect, the net effect of the increase in the GOM winter flounder catch limits for the remainder of FY 2011 will likely be neutral.

5.1.2 Impacts on Target Species and Other Species

5.1.2.1 No Action

Under the No Action Alternative described under Sections 3.1.1, 3.2.1, and 3.3.1, no revisions would be made to the status determination criteria for GOM winter flounder or any of

the FY 2011 GOM winter flounder catch limits (OFL, ABC, other sub-component, state waters sub-component, Groundfish sub-ACL, sector sub-ACL, common pool sub-ACL, or sector ACEs). Those values would remain as specified by the Amendment 16 (status determination criteria) and FW 44 final rules, as modified by the final rule that made revisions to FW 44 (75 FR 29459; May 26, 2010) and the final FY 2011 sector rosters (76 FR 34903; June 15, 2011), as shown in Table 3.

Two elements of the No Action Alternative (status determination criteria and catch limits) are closely tied together, and cannot realistically be analyzed independently of each other. Both the status determination criteria and catch limits for GOM winter flounder are based upon the results of a stock assessment, and theoretically could remain the same based upon the old stock assessment (GARM III), or revised based upon the recent stock assessment (SAW 52). However, it would not be logical or consistent to revise one element and not the other.

The existing status determination criteria for GOM winter flounder (i.e., the No Action Alternative for this action) can be represented by the proposed action in Section7.2.1.1.1 of the FEIS for Amendment 16 (NEFMC 2009). For GOM winter flounder, the existing status determination criteria are based on the result of GARM III (NEFSC 2008) using a virtual population assessment model. As noted in the Amendment 16 FEIS, because the MSA requires management measures to be based upon the best available scientific information, selecting the No Action Alternative is also not consistent the MSA requirement to use the best available science for management actions.

The No Action Alternative for FY 2011 GOM winter flounder catch limits can be represented by the proposed action in Section 7.1.1.1.1 of the EA for FW 44 (NEFMC 2009c). Catch limits are based upon the estimate of stock size and F_{MSY} from GARM III (i.e., status determination criteria), and the methods used to determine ACLs, as described above in Section 3.2. The impacts on stock size of setting the catch limits can be estimated using short-term projections for most stocks. Since the projections for GOM winter flounder from GARM III were considered to be too unreliable, it was not possible to evaluate the impact of such catch limits on the status of the stock. However, given that GOM winter flounder ABC was set below the OFL, and that the ACL was set below ABC, the resulting catch is more likely to be at or below the ABC, resulting in less risk that the ABCs will be exceeded, overfishing will occur, and stock biomass will decline.

Given the current understanding of the status of the stock (overfishing is not occurring), the fact that the No Action GOM winter flounder catch limits are well below the catch level associated with the maximum sustainable level of catch, and that AMs would be triggered if the ACLs specified for this stock are exceeded, the No Action Alternative is unlikely to have negative biological impacts on the stock, as compared to the proposed action. If NMFS takes no action to revise the status determination criteria and catch limits for FY 2011, revised status determination criteria and updated catch limits will likely be implemented for FY 2012 as part of FW 47. Based on comments by the fishing industry, the current catch limits specified in the No Action Alternative will continue to constrain the catch of other stocks in addition to GOM winter flounder, due to the relatively low catch limit and the constraining management measures that are triggered when catch limits are reached in either the common pool or sectors, as noted in the purpose and need for this action (Section 2.0).

5.1.2.2 Proposed Action (Preferred Alternative)

The revision to the GOM winter flounder status determination criteria and catch limits will align current management measures with the best available scientific information from SARC 52. The revised F_{MSY} proxy included in the preferred alternative (0.31) slightly higher than that in the No Action (0.28). Over time, this would allow slightly higher fishing mortalities and lead to a slight decline in stock size compared to the No Action Alternative. However, because SARC 52 utilized swept area biomass approach, it is more appropriate to evaluate the status determination criteria using the exploitation rate of 0.23, and a direct comparison between the No Action F_{MSY} proxy and the proposed exploitation rate would not be appropriate.

Revision to the FY 2011 GOM winter flounder catch limits will result in the possibility that substantially greater amount of this stock will be caught than under the No Action Alternative. The level of catch is consistent with a level that would prevent overfishing from occurring and sustaining the biomass over the long-term when fishing at a sustainable level of mortality (F_{MSY}). Both scientific and management uncertainty are accounted for in this catch level, so the risks of negative biological impacts have been minimized. Further, as with the catch limits specified in the No Action Alternative, AMs will be triggered if the FY 2011 GOM winter flounder ACLs are exceeded, further reducing the risk of overfishing and adverse impacts to the stock.

The groundfish sub-ACL for GOM winter flounder (common pool and sector sub-ACLs combined) of 329 mt is 106 percent greater than the No Action sub-ACL of 159 mt. Although this is a relatively large increase, it is not significant, because this amount of GOM winter flounder could theoretically be caught between landings and discards, in reality, there will be other factors in the fishery that limit the amount of GOM winter flounder caught. For the common pool such limiting factors include: Relatively low DAS allocations, limitations in the market for leasing DAS, limited ability of vessel owners to afford leased DAS; and low annual catch limits for other stocks that will constrain the fishery. For sector vessels such factors include: Low GOM winter flounder allocations based on historical catch as well other constraining stocks. A constraining stock is a stock for which the ACL (or ACE) is relatively low and, due to the FMP rules, will constrain a vessels ability to fish. The increase in groundfish sub-ACLs is far larger than observed catch during previous FYs, suggesting that it may not be possible for the fishery to catch the additional amount of GOM winter flounder during the remainder of FY 2011.

A larger catch limit for GOM winter flounder may result in greater catch of other stocks (GOM cod, Cape Cod/GOM yellowtail flounder, monkfish, skates, and dogfish) in addition to GOM winter flounder, as compared to the No Action Alternative, because it is not likely that GOM winter flounder will serve as a constraining stock. Because all stocks have catch limits, and management measures designed to constrain catch, the additional fishing effort that could result from a larger GOM winter flounder catch limit is not likely to negatively impact other groundfish stocks, or result in catch exceeding catch limits for other stocks. The revised GOM winter flounder annual catch limits are expected to have little impact on the rate of bycatch, but could increase the net amount of bycatch slightly, if the increased catch limit enables vessels to increase their fishing effort.

5.1.3 Impacts on Protected Species

5.1.3.1 No Action

Under this alternative, there would be no change to the GOM winter flounder status determination criteria or FY 2011 catch levels for this stock. Because the status determination criteria are abstract specifications, they would have no impact on protected resources. The No Action catch limits are consistent with the fishing mortality targets of Amendment 16, and the catch limits specified by FW 44. In general, the impacts of the proposed action on protected resources will track the trend in fishing effort. Because the catch limits would not change under the No Action Alternative, there may be fewer interactions with protected resources relative to the preferred alternative. The scope of this change with respect to the overall fishery is expected to be negligible, however, especially considering the duration of this action (January – April 2012).

5.1.3.2 Proposed Action (Preferred Alternative)

Under the proposed action, the GOM winter flounder status determination criteria and the FY 2011 catch levels would be revised for the remainder of FY 2011 (January – April 2012). Because the status determination criteria are abstract specifications, they would have no impact on protected resources compared to the No Action Alternative. The increase in GOM winter flounder catch levels allowed would be substantial (approximately double the current ACLs specified in the No Action Alternative), and could result in limited additional fishing effort as compared to the No Action Alternative. In general, the impacts of the proposed action on protected resources will track the trend in fishing effort. An increase in fishing effort compared to the No Action Alternative would slightly increase the interactions of groundfish gear with protected resources. The scope of this increase with respect to the overall fishery is expected to be negligible, however, especially considering the duration of this action (January – April 2012) and the fact that other regulations restricting catch of other groundfish stocks will likely limit the overall increase in fishing effort resulting from this proposed action, as detailed in Section 5.1.1.2.

5.2 Economic Impact

Setting an ACL constrains the upper limit of the revenue possibilities that may be derived from any one stock in the groundfish fishery. The realized revenue potential for the groundfish complex as a whole depends on the technical interactions among species that may constrain the ability to obtain the full value from one or more stocks due to conservation requirements of another.

The proposed action would revise the commercial FY 2011 GOM winter flounder ACL from 231 mt to 524 mt. Potential revenues were calculated assuming 2007-2010 average live weight price of about $1.84 per pound among all ports (see Table 21). Whereas the historical GOM winter flounder prices reported in Table 21 above were based on landed weight, the ACLs are expressed in live weight. Therefore, for purposes of this economic analysis, landed weights were converted to live weight equivalents. A price of $1.84 per pound was selected even though this action, and FW 47, if approved, would substantially increase the amount of GOM winter flounder available to the fishery. It is possible that additional landings will decrease ex-vessel price. However, as indicated in Table 21, although landings in 2010 were substantially lower than that observed in 2007, the average price for GOM winter flounder in 2010 was still well below the average price in 2007. This suggests that market supply for GOM winter flounder

may not be as important in determining price for this stock. Therefore, it appears that using the average price of $1.84 per pound is a reasonable approach for determining potential revenues for this action.

The economic impact of the revised 2011 GOM winter flounder ACL may be substantially greater than the value of GOM winter flounder alone since the current ACL of 231 mt may be expected to constrain many sectors from utilizing ACE for other stocks, and may be anticipated to result in either an in-season adjustment to the common pool measures or trigger the common pool AM. The following provides an analysis of the potential economic impacts of the No Action Alternative and the proposed action. The values for the sector ACEs in the economic impacts analysis below are expressed in pounds, whereas the values specified under the description of alternatives in Section 3.0 are expressed in metric tons.

5.2.1 No Action

Taking No Action Alternative would leave the ABC and ACL specifications for GOM winter flounder unchanged from those implemented through FW 44, and revised by the final rule to adjust the ACL specifications due to changes in the sector roster. In FW 44, the upper bound of economic impact (revenues) for the combined ACLs for all stocks was estimated to be $189 million (NEFMC 2009c). This estimate was noted as being unlikely to be obtained due a number of factors, including: (1) Nearly half of the potential revenue was GB haddock, (2) neither of the two original sectors ever harvested their full allocation of GB cod, (3) the combined common pool and sector vessels have never harvested the available GB haddock or redfish, and (4) catches of many other stocks have been less than the target TACs in recent years. Alternative estimates of aggregate potential commercial revenues for the 2011 ACLs specified in FW 44 (representing the No Action Alternative in this EA) ranged from $63 million to $87 million depending on whether sectors are successful in reducing discard rates of limiting stocks (see Table 88 in NEFMC 2009c).

The realized impacts of taking No Action are uncertain, but may be expected to differ among sectors depending on PSC for GOM winter flounder compared to more recent landings patterns. For some sectors, the amount of GOM winter flounder available to them under the No Action Alternative represents substantial reductions from recent landings. For example, the difference between FY 2010 landings and FY 2011 sub-ACL for the common pool is over 35,000 lb (Table 28). In contrast, the No Action Alternative provides substantial amounts of surplus ACE compared to catches in FY 2010 (e.g., NEFS 4, NEFS 8, and NEFS 10). Nevertheless, the primary benefit associated with the revised ACL specified in the preferred alternative – reducing the likelihood that an AM would be triggered for the common pool or individual sectors, and increasing the potential to realize higher economic yield from other stocks – is a benefit that would not be realized if the No Action Alternative is selected. When compared to the proposed action, the No Action Alternative is expected to result in up to $1.1 million less revenue assuming that the proposed increased GOM winter flounder ACL is fully harvested during the remainder of FY 2011 (Table 29).

Table 28. Difference between No Action Alternative 2011 GOM winter flounder ACE and FY 2010 landings for common pool and by sector (lb).

Common Pool/ Sector Name	No Action GOM Winter Flounder ACE	FY 2010 GOM Winter Flounder Landings	No Action ACE Difference
Common Pool	17,426	53,263	-35,837
Fixed Gear Sector	7,685	354	7,331
Maine Permit Bank Sector	3,043	*	3,043
NCCS	3,155	0	3,155
NEFS 10	95,261	43,822	51,439
NEFS 11	7,051	2,568	4,483
NEFS 12	1,103	2,578	-1,475
NEFS 13	4,366	2,047	2,319
NEFS 2	73,506	69,830	3,676
NEFS 3	38,289	34,114	4,175
NEFS 4	16,423	0	16,423
NEFS 5	1,127	0	1,127
NEFS 6	12,869	10,691	2,178
NEFS 7	3,036	1	3,035
NEFS 8	11,745	26	11,719
NEFS 9	8,495	17	8,478
Port Clyde Community Groundfish Sector	4,473	398	4,075
Sustainable Harvest Sector 1	20,668	6,699	13,969
Sustainable Harvest Sector 3	11,346	*	11,346
Tri-State Sector	7,260	3,639	3,621
Total (including common pool)	348,330	230,047	118,283

*Not applicable; this sector was not in operation in FY 2010.

5.2.2 Proposed Action (Preferred Alternative)

The preferred alternative would increase the FY 2011 GOM winter flounder ABC to 1,078 mt and the total ACL to 524 mt. The proposed action's revised total ACL (over 1.1 million pounds) would represent an increase of over 646,000 pounds compared to the No Action Alternative, and would exceed FYs 2009 and 2010 GOM winter flounder landings by 282 mt (621,704 lb) and 418 mt (921,311 lb), respectively. Assuming recent average prices for GOM winter flounder during FYs 2007 – 2010 ($1.84 per pound) and that all available GOM winter flounder would be harvested, the potential revenue from the GOM winter flounder total ACL under the proposed action would be $2,068,818 compared to $937,053 under the No Action alternative (Table 29). In absolute terms, the proposed action could provide upwards of $1.2 million more in additional potential revenue from increased GOM winter flounder landings alone compared to the No Action Alternative. Additional potential revenue would likely result from increased catch of other groundfish stocks due to additional GOM winter flounder ACL being made available under the proposed action. However, realized benefits from this proposed action would likely be lower than $1.2 million, as it is not likely that the entire increased GOM winter flounder will be landed during the remainder of FY 2011.

It is difficult to quantify the amount of additional revenue that may be realized from the harvest of other stocks and, thus, total revenue and economic benefits expected as part of this action. Realized revenue depends upon potential changes in discard rates and fishing practices. An analysis to estimate potential revenue from all stocks was attempted in FW 44 (see Section 7.4.1.1.1 of the EA prepared for that action) that utilized both recent catch rates as well as inflated catch rates for each stock. It was not possible to update that analysis for this action because it would have delayed the implementation of this action contrary with the purpose and need for this action. Overall, however, it is expected that the proposed increase in GOM winter flounder ACL will allow for higher catches of other groundfish stocks, resulting in positive economic impacts compared to the No Action Alternative.

These calculations are based on the assumption that the available GOM winter flounder groundfish sub-ACL will be fully utilized by the combined common pool and sector participants. Whether full utilization of the GOM winter flounder groundfish sub-ACL will be realized or not is uncertain. In recent years GOM winter flounder landings have been well below the levels that would be allowed under the proposed action. For example, FY 2010 U.S. domestic GOM winter flounder catch by all commercial groundfish vessels was 106.1 mt (only 21 percent of the total ACL under the proposed action). Recent catch rates for GOM winter flounder are only available for FY 2009 and 2010 because target TACs or ACLs for this stock were not specified in previous years because excessive uncertainty in the stock assessment prevented the use of short-term projections to develop target TACs and ACLs. Even when increasing recent catch rates (about 65 percent of target TACs/ACLs) by 50 percent to 363 mt and 159 mt in FYs 2009 and 2010, respectively, recent catches are still within previously established catch limits. Therefore, assuming previous catch rates for GOM winter flounder persist, it is highly unlikely that the increased ACL proposed in this action will be caught. Nevertheless, the primary benefit of the revised ACL in this action is expected to be associated with reducing the likelihood that an AM would be triggered for the common pool or individual sectors, and increasing the potential to realize higher economic yield from GOM winter flounder and other groundfish stocks. Failing to take the proposed action would eliminate any potential for the industry to benefit from increased revenue from the increased landings of GOM winter flounder allowed by updated stock status information.

Table 29. Comparison of Potential Commercial Groundfish Revenue Between the No Action and Proposed Action ABC and Total ACL.

Alternative	ABC			Total ACL		
	MT	lb	Revenue	MT	lb	Revenue
No Action	239	526,905	$969,505	231	509,268	$937,053
Proposed Action	1,078	2,376,583	$4,372,913	524	1,155,222	$2,125,609
Difference	839	1,849,678	$3,403,408	293	645,954	$1,188,556

Due to the qualification criteria used to establish initial potential sector contributions (history from 1996 to 2006), the revised allocations of sector GOM winter flounder ACE may not reflect current or desired fishing practices. For example, even with a total increase in the revised sector specifications of 163 mt (nearly 360,000 pounds) for GOM winter flounder under the proposed action, the common pool one other sector (NEFS 12) would still be left with less GOM winter flounder ACE than the collective sector membership landed during FY 2010 (Table 30). That is, even though the proposed increased aggregate GOM winter flounder ACE would

exceed FY 2010 landings, the ACE for some sectors would still be lower than the sector members' 2010 combined GOM winter flounder landings. It should be noted that the ACE deficit for sectors operating under the umbrella of the Northeast Seafood Coalition (NEFS Sectors 2-13) may be readily overcome due to ACE trading agreements among such sectors (a requirement to offer ACE to other NEFS sectors before trading ACE to an outside sector). Theoretically, it is possible that the aggregate GOM winter flounder ACE will be sufficient to obtain sufficient GOM winter flounder to cover the needs of a sector through inter-sector trading of ACE, although doing so would increase costs.

The sector operations plans indicate that the sector's ACE would be subdivided among each member according to the PSC brought into the sector by each member. This means that even though the ACE allocated to a sector may exceed the combined sector's GOM winter flounder landings, this may not be the case for every specific member of the sector. Note that sector membership is defined in each operations plan as being an individual that may own more than one permitted vessel. As explained above, for a sector or a vessel, the differences between historical catch and available catch may be offset by the ability to obtain additional GOM winter flounder quota either through an intra-sector or inter-sector transfer. Given these available transfer options, the proposed action groundfish sub-ACL would be sufficient to enable sectors and sector members to obtain at least as much GOM winter flounder needed to sustain recent landings for the remainder of FY 2011.

Table 30. Difference Between Preferred Alternative 2011 GOM Winter Flounder Sub-ACL/ACE and FY 2010 GOM Winter Flounder Landings for Common Pool and by Sector

	Preferred Alternative GOM Winter Flounder Sub-ACL or Sector ACE (lb, live weight)	FY 2010 GOM Winter Flounder Landings (lb, live weight)	Difference Between Preferred Alternative and FY 2010 GOM Winter Flounder Landings (lb, live weight)
Common Pool	36,286	53,263	-16,977
Fixed Gear Sector	16,003	354	15,649
Maine Permit Bank Sector	6,337	-	6,337
NCCS	6,570	0	6,570
NEFS 10	198,360	43,822	154,538
NEFS 11	14,682	2,568	12,114
NEFS 12	2,298	2,578	-280
NEFS 13	9,091	2,047	7,044
NEFS 2	153,061	69,830	83,231
NEFS 3	79,728	34,114	45,614
NEFS 4	34,198	0	34,198
NEFS 5	2,348	0	2,348
NEFS 6	26,797	10,691	16,106
NEFS 7	6,323	1	6,322
NEFS 8	24,456	26	24,430
NEFS 9	17,689	17	17,672
Port Clyde Community Groundfish Sector	9,314	398	8,916

Sustainable Harvest Sector 1	43,036	6,699	36,337
Sustainable Harvest Sector 3	23,625	-	23,625
Tri-State Sector	15,118	3,639	11,479
Total (including common pool)	725,321	230,047	495,274

NCCS: Northeast Coastal Communities Sector; NEFS: Northeast Fishery Sectors

The proposed action may also have an effect, at least in terms of market price, on the ACE leasing market. As noted above in Section 4.5.2, over 94,000 pounds of GOM winter flounder ACE was leased during FY 2010, with the lease price ranging from $0.31 to $1.23 per pound. It is unclear how, exactly, the proposed increase in GOM winter flounder ACE would affect lease price. As suggested in Kitts et al. (2011), as landings and associated demand for GOM winter flounder ACE decreased toward the end of FY 2010, so too did the leasing price of ACE. Increasing the GOM winter flounder ACE available to the fishery as part of this action is likely to have a similar effect (i.e., decreasing demand for GOM winter flounder ACE), and will likely lead to decreased lease price through the remainder of FY 2011. The anticipated scale of the price decrease is highly uncertain. However, a decrease in lease price would reduce operational costs for individual vessels with low GOM winter flounder individual shares (compared to their historic landings) that must lease additional ACE to remain fishing. As noted in the purpose and need for this action, NMFS was concerned about making more GOM winter flounder ACL available to the fishery without collapsing the leasing price. It is expected that such declines would be related to the scale of the decrease in ACE leasing demand. While this action would likely result in decreased lease prices, the decline would not be as large as that which would likely result from other options to increase the GOM winter flounder ACL beyond that which is proposed in this action (see the letter from the Council in the Appendix).

5.3 Social Impacts

5.3.1 No Action

There is likely to be little difference between the social impacts of the No Action and the proposed action. Under both circumstances, catches are limited, they may be viewed as conservative limits, and the complexity of the catch limits and regulations in general may deter participation in the management process. The relatively minor differences in catch levels in the context of all the ACLs, is not likely to alter the perception of the management program compared to the proposed action. The social impacts of the proposed action are explained more below.

5.2.2 Proposed Action (Preferred Alternative)

The following discussion is based upon the FW 44 social impacts analysis.

Implementation of ACLs as required by the MSA may have social impacts that are difficult to define. The most likely type of impact is a change in the formation of attitudes toward the management process. The standardization of a process to determine fishing levels may lend a sense of legitimacy to fisheries management in the eyes of the public. However, the process for setting ACLs is quite complicated and technical, and some would-be public

participants could be deterred from engaging in management forums.

Reductions in fishing effort are not likely to result from the revision of the GOM winter flounder catch limits under this proposed action. However, if the additional GOM winter flounder does not result in increases in overall effort due to the constraints of low ACLs for other stocks, industry frustration may be increased. Further, industry may also be frustrated that action was not taken earlier in the year to increase the FY 2011 GOM winter flounder catch limits based on the June SARC 52, or to increase the FY 2011 catch limits higher than what is proposed in this action. However, as noted in Section 2.0, increasing the FY 2011 catch limits sooner, or increasing them beyond what is proposed in this action is not consistent with the purpose and need for this action.

Disruptions in revenue, daily living, and regulatory discards (for the common pool) are other potential social impacts that will result, especially if catch of the FY 2011 GOM winter flounder ACL results in inseason modifications to management measures. Such additional social impacts would occur if the ACL was exceeded during FY 2011, and AMs are triggered for FY 2012. However, these concerns should be mitigated through the implementation of higher FY 2011 catch limits for GOM winter flounder as part of this action, along with the adoption of higher catch limits for FY 2012 as part of FW 47.

Because the ACLs are simply caps on the amount of catch that can occur for each stock in the fishery, the adoption of specific GOM winter flounder ACLs in itself does not have major social impacts. Rather, low ACLs drive conservative management strategies, and the methods for reducing effort or allocating the ACL are the largest contributors to impacts of a social nature. The sector and effort control systems were adopted in Amendment 16 and impacts of each measure were described in that document.

In summary, there is likely to be little difference between the social impacts of the Proposed Action and the No Action Alternative. Under both circumstances, catches are limited, they may be viewed as conservative limits, and the complexity may deter participation in the management process. The relatively minor differences in catch levels are not likely to alter the perception of the management program at large.

6.0 Cumulative Impacts

6.1 Introduction

A cumulative effects assessment (CEA) is a required part of an EIS or EA according to the Council on Environmental Quality (CEQ) (40 CFR part 1508.7) and NOAA's agency policy and procedures for NEPA, found in NOAA Administrative Order 216-6. The purpose of the CEA is to integrate into the impact analyses, the combined effects of many actions over time that would be missed if each action were evaluated separately. 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 serves to examine the potential direct and indirect effects of the alternatives in this emergency EA together with past, present, and reasonably foreseeable future actions that affect the groundfish environment. It should also be noted that the predictions of potential synergistic effects from multiple actions, past, present and/or future will generally be qualitative in nature.

6.2 Valued Ecosystem Components (VEC)

As noted in section 4.0 (Affected Environment), the VECs that exist within the groundfish fishery are identified and include the following:

1. Regulated groundfish stocks (target and non-target);
2. Other stocks (incidental catch and bycatch);
3. Endangered and other protected species;
4. Habitat, including non-fishing effects; and
5. Human Communities (includes economic and social effects on the fishery and fishing communities).

Temporal Scope of the VECs

While the effects of historical fisheries are considered, the temporal scope of past and present actions for regulated groundfish stocks, other stocks, habitat/EFH and the human environment is 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 the human environment that have resulted through management under the Council process and through U.S. prosecution of the fishery, 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. The CEA examines future actions through April 30, 2013. This is the end of FY 2012 and slightly beyond the period of approval for this action. Therefore, the cumulative effects will need to be reassessed as part of the NEPA action taken for FY 2012 and beyond.

Geographic Scope of the VECs

The geographic scope of the analysis of impacts to regulated groundfish stocks, other stocks and habitat for this action is the total range of these VECs in the Western Atlantic Ocean, as described in the Affected Environment section (Section 4.0) of this document and more fully in FW 45 (NEFMC 2011). However, the analyses of impacts presented in this EA focuses primarily on actions related to the harvest of GOM winter flounder and other managed groundfish resources. The result is a more limited geographic area used to define the core geographic scope within which the majority of harvest effort for the managed resources occurs. For endangered and protected species, the geographic range is the total range of each species.

Because the potential exists for far-reaching sociological or economic impacts on U.S. citizens who may not be directly involved in fishing for the managed resources, the overall geographic scope for human communities is defined as all U.S. human communities. Limitations on the availability of information needed to measure sociological and economic impacts at such a broad level necessitate the delineation of core boundaries for the human communities. Therefore, the geographic range for the human environment is defined as those primary and secondary ports bordering the range of the groundfish fishery that operates, at least in part, within the GOM from the U.S.-Canada border to, and including, Cape Cod Massachusetts (Section 4.0).

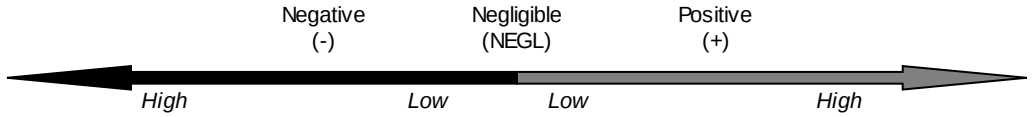
6.3 Evaluation Criteria

This EA evaluates the potential impacts of past, present, and reasonably foreseeable future actions using the criteria outlined in Table 31. Impacts from all alternatives are judged relative to the baseline conditions, as described in Section 4.0 and summarized again in Table 34, and compared to each other.

A CEA ideally makes effect determinations based on the culmination of the following: (1) impacts from past, present and reasonably foreseeable future actions; PLUS (2) the baseline condition for resources and human communities (note – the baseline condition consists of the present condition of the VECs plus the combined effects of past, present and reasonably foreseeable future actions); PLUS (3) impacts from the proposed action.

Table 31. Criteria used to evaluate the potential impacts of past, present, and reasonably foreseeable future actions.

Impact Definition			
VEC	**Direction**		
	Positive (+)	**Negative (-)**	**Negligible (Negl)**
Allocated target species, other landed species, and protected resources	Actions that increase stock/population size	Actions that decrease stock/population size	Actions that have little or no positive or negative impacts to stocks/populations
Physical Environment/ Habitat/EFH	Actions that improve the quality or reduce disturbance of habitat	Actions that degrade the quality or increase disturbance of habitat	Actions that have no positive or negative impact on habitat quality
Human Communities	Actions that increase revenue and social well-being of fishermen and/or associated businesses	Actions that decrease revenue and social well-being of fishermen and/or associated businesses	Actions that have no positive or negative impact on revenue and social well-being of fishermen and/or associated businesses
Impact Qualifiers:			
Low (L, as in low positive or low negative)	To a lesser degree		
High (H; as in high positive or high negative)	To a substantial degree		
Likely	Some degree of uncertainty associated with the impact		



6.4 Past, Present, and Reasonably Foreseeable Future Actions

A summary of past, present and reasonably foreseeable future actions is presented immediately below. The baseline conditions of the resources and human community are subsequently summarized, although it is important to note that beyond the stocks managed under this FMP and protected species, quantitative metrics for the baseline conditions are not available. Finally, a brief summary of the impacts from the alternatives contained in this amendment is included. The culmination of all these factors is considered when making the cumulative effects assessment.

Table 32 summarizes the combined effects of other past, present and reasonably foreseeable future actions that affect the VECs, i.e., actions other than those alternatives under development in this document from 2010 onward. A more thorough summary of the primary past, present and reasonably foreseeable future actions effecting this amendment can be found in

Appendix V of the FW 45 EA (NEFMC 2011), including other previous actions taken in the NE Multispecies FMP.

Most of the actions affecting this EA and considered in Table 32 come from fishery-related activities (e.g., Federal fishery management actions). As expected, these activities have fairly straightforward effects on environmental conditions, and were, are, or will be taken, in large part, to improve those conditions. MSA stipulates that management comply with a set of National Standards that collectively serve to optimize the conditions of the human environment. Under this regulatory regime, the cumulative impacts of past, present, and future Federal fishery management actions on the VECs should be expected to result in positive long-term outcomes. Nevertheless, these actions are often associated with offsetting impacts. For example, constraining fishing effort frequently results in negative short-term socio-economic impacts for fishery participants. However, these impacts are usually necessary to bring about long-term sustainability of a given resource and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the managed resource.

Non-fishing activities were also considered when determining the combined effects from past, present and reasonably foreseeable future actions. Activities that have meaningful effects on the VECs include the introduction of chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment. These activities pose a risk to the all of the identified VECs in the long term. Human induced non-fishing activities that affect the VECs under consideration in this document are those that tend to be concentrated in near shore areas. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities.

Table 32. Summary of effects on VECs from past, present, and reasonably foreseeable future FMP and other fishery-related actions.

Fishing Actions	Physical Impacts	Biological Impacts			Human Community Impacts	
	Habitat/EFH	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Past and Present Fishing Actions						
Atlantic Large Whale Take Reduction Plan	Negl to L- Requires use of sinking groundline, which may sweep bottom. Also potential for "ghost gear" due to weak links in gillnet line.	Negl	Negl	+ Regulations implemented to protect large whales are expected to have a positive impact by reducing incidental takes.	L- to negl	L- for gillnetters because weak links must be added to gillnets.
Spiny Dogfish Fishery Management Plan	Negl Most of the landed dogfish catch has historically been landed with bottom gillnets rather than bottom trawls, therefore, negligible impact on habitat.	Negl Dogfish is caught incidentally in the multispecies fishery	+ Spiny dogfish stock is not overfished and overfishing is not occurring.	Negl	L- short-term L+ long-term In the short-term, the implementation of quotas and trip limits has reduced revenue, resulting in a low negative impact. However, the FY 2010 specifications increased the quota and trip limits because the species is no longer considered overfished nor is overfishing occurring, resulting in a low positive impact.	L- short-term L+ long-term In the short-term, the implementation of quotas and trip limits has reduced revenue, resulting in a low negative impact. However, the FY 2010 specifications increased the quota and trip limits because the species is no longer considered overfished nor is overfishing occurring, resulting in a low positive impact.

Table 32 (continued). Summary of effects on VECs from past, present, and reasonably foreseeable future actions.

Fishing Actions	Physical Impacts	Biological Impacts			Human Community Impacts	
	Habitat/EFH	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Past and Present Fishing Actions						
Monkfish Fishery Management Plan and Amendment 5 (2011) Implemented ACLs and AMs; set the specifications of DAS and trip limits; and make other adjustments to measures in the Monkfish FMP.	L+ Reduction in fishing effort results in less habitat-gear interaction.	+ Monkfish management actions have reduced fishing effort over the last decade, which has resulted in positive impacts for groundfish.	+ Monkfish management actions have reduced fishing effort over the last decade, and would continue positive impacts for monkfish stocks	+ Reduction in fishing effort results in less gear interaction.	L- short-term L+ long-term Reduction in fishing effort while stock rebuilds means less revenue. Long term benefits due to sustainable fishery.	L- short-term L+ long-term Reduction in fishing effort while stock rebuilds means less revenue. Long term benefits due to sustainable fishery.
Amendment 16 to the Northeast Multispecies FMP (2010) Implemented DAS reductions and gear restrictions for the Common Pool, approved formation of additional 17 sectors	+	+	+	+	- short-term, L+ long-term	- short-term, L+ long-term
Skate Fishery Management Plan and Amendment 3 (2010) Amendment 3 implemented final specifications for the 2010 and 2011 FYs, implemented ACLs and AMs, implemented a rebuilding plan for smooth skate and established an ACL and annual catch target for the skate complex, total allowable landings for the skate wing and bait fisheries, seasonal quotas for the bait fishery, new possession limits, and in season possession limit triggers.	+	+	+	+	-	-

Table 32 (continued). Summary of effects on VECs from past, present, and reasonably foreseeable future actions.

Fishing Actions	Physical Impacts	Biological Impacts			Human Community Impacts	
	Habitat/EFH	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Past and Present Fishing Actions						
FW 44 to the Northeast Multispecies FMP (2010) Set ACLs, established TACs for transboundary U.S./CA stocks, and made adjustments to trip limits/DAS measures	+	+	+	+	- short-term, L+ long-term	- short-term, L+ long-term
FW 45 to the Northeast Multispecies FMP (2011) Revised the biological reference points and stock status for pollock, updated ACLs for several stocks for FYs 2011–2012, adjusted the rebuilding program for GB yellowtail flounder, increased scallop vessel access to the Great South Channel Exemption Area, modified the existing dockside and at-sea monitoring requirements, established a GOM Cod Spawning Protection Area, authorized new sectors and adjusted TACs for stocks harvested in the US/ CA area for FY 2011.	L+	L+	L+	L+	L- short term L+ long term	L- short term L+ long term

Table 32 (continued). Summary of effects on VECs from past, present, and reasonably foreseeable future actions.

Fishing Actions	Physical Impacts	Biological Impacts			Human Community Impacts	
	Habitat/EFH	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Past and Present Fishing Actions						
Harbor Porpoise Take Reduction Plan Plan was amended to expand seasonal and temporal requirements within the HPTRP management areas; incorporate additional management areas; and create areas that would be closed to gillnet fisheries if certain levels of harbor porpoise bycatch occurs.	Likely +	Likely +	Likely +	Likely +	Likely -	Likely -
Scallop Amendment 15 (2011) Implemented ACLs and AMs to prevent overfishing of scallops and yellowtail flounder; addressed excess capacity in the LA scallop fishery; and adjusted several aspects of the overall program to make the Scallop FMP more effective, including making the EFH closed areas consistent under both the scallop and groundfish FMPs for scallop vessels.	Negl	L+	Negl	Negl	L+	L+
FW 46 to the Northeast Multispecies FMP (2011) Increased the haddock catch cap for the herring fishery to 1% of the haddock ABC for each stock of haddock.	Negl	Negl	Negl	Negl	Negl to L-	Negl to L-
Amendment 17 to the Northeast Multispecies FMP This amendment looks to streamline the administration process whereby NOAA-sponsored, state-operated permit banks can operate in the sector allocation management program	Negl	Negl	Negl	Negl	Negl	Negl

Table 32 (continued). Summary of effects on VECs from past, present, and reasonably foreseeable future actions.

Fishing Actions	Physical Impacts	Biological Impacts			Human Community Impacts	
	Habitat/EFH	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Past and Present Fishing Actions						
FW 47 to the Northeast Multispecies FMP FW 47 measures include revisions to the status determination for winter flounder, revising the rebuilding strategy for GB yellowtail flounder, Measures to adopt ACLs, including relevant sub-ACLs and incidental catch TACs; adopting TACs for U.S/Canada area, as well as modifying management measures for SNE/MA winter flounder, restrictions on catch of yellowtail flounder in GB access areas and accountability measures for certain stocks	Negl	ND	ND	ND	ND	ND
Reasonably Foreseeable Future Fishing Actions						
Omnibus Essential Fish Habitat Amendment Phase 2 of the Omnibus EFH Amendment would consider the effects of fishing gear on EFH and move to minimize, mitigate or avoid those impacts that are more than minimal and temporary in nature. Further, Phase 2 would reconsider measures in place to protect EFH in the Northeast Region.	Likely +	Likely +	Likely +	Likely Negl	ND	ND
Potential Turtle Excluder Device (TED) Requirements for Trawls and Dredges May consider increasing the size of the TED escape opening in the summer flounder fishery; requiring the use of TEDs in the flynet, whelk, calico scallop, and Mid- Atlantic sea scallop trawl fisheries; and moving the current northern boundary of the Summer Flounder Fishery-Sea Turtle Protection Area.	Likely -	Negl	Likely +	Likely +	Likely L-	Likely - for trawlers

Table 32 (continued). Summary of effects on VECs from past, present, and reasonably foreseeable future actions.

Fishing Actions	Physical Impacts	Biological Impacts			Human Community Impacts	
	Habitat/EFH	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Reasonably Foreseeable Future Fishing Actions						
Harbor Porpoise Take Reduction Plan (Potential Future Actions) Future changes to the plan in response to additional information and data about abundance and bycatch rates.	Likely L+	Likely +	Likely +	Likely +	Likely -	Likely -
TBD Framework to the Northeast Multispecies FMP This framework may consider revisions to sector management measures and ASM	ND	ND	ND	ND	Likely +	Likely +
Summary of Impacts	+	+	+	+	-	-

Noted: ND= Not determined

Table 33. - Summary effects of past, present and reasonably foreseeable future actions on the VECs (based on actions listed in Appendix V of Framework 45).

VEC	Past Actions	Present Actions	Reasonably Foreseeable Future Actions	Combined Effects of Past, Present, Future Actions
Regulated Groundfish Stocks	**Mixed** Combined effects of past actions have decreased effort and improved habitat protection however, some stocks remain overfished	**Positive** Current regulations continue to manage for sustainable stocks	**Positive** Future actions are anticipated to continue rebuilding and strive to maintain sustainable stocks	**Short-term Negative** Several stocks are currently overfished, have overfishing occurring, or both **Positive** Stocks are being managed to attain rebuilt status
Other Species	**Positive** Combined effects of past actions have decreased effort and improved habitat protection	**Positive** Current regulations continue to manage for sustainable stocks, thus controlling effort on direct and discard/bycatch species	**Positive** Future actions are anticipated to continue rebuilding and thus limit the take of discards/bycatch	**Positive** Continued management of directed stocks will also control incidental catch/bycatch
Endangered and Other Protected Species	**Positive** Combined effects of past fishery actions have reduced effort and thus interactions with protected resources	**Positive** Current regulations continue to control effort, thus reducing opportunities for interactions	**Mixed** Future regulations will likely control effort and thus protected species interactions, but as stocks improve, effort will likely increase, possibly increasing interactions	**Positive** Continued effort controls along with past regulations will likely help stabilize protected species interactions
Habitat	**Mixed** Combined effects of effort reductions and better control of non-fishing activities have been positive but fishing activities and non-fishing activities continue to reduce habitat quality	**Mixed** Effort reductions and better control of non-fishing activities have been positive but fishing activities and non-fishing activities continue to reduce habitat quality	**Mixed** Future regulations will likely control effort and thus habitat impacts but as stocks improve, effort will likely increase along with additional non-fishing activities	**Mixed** Continued fisheries management will likely control effort and thus fishery related habitat impacts but fishery and non-fishery related activities will continue to reduce habitat quality
Human Communities	**Mixed** Fishery resources have supported profitable industries and communities but increasing effort controls have curtailed fishing opportunities	**Mixed** Fishery resources continue to support communities but increasing effort controls combined with non-fishing impacts such as rising fuel costs have had a negative economic impact	**Short-term Negative** As effort controls are maintained or strengthened, economic impacts will be negative **Long-term Positive** As stocks improve, effort will likely increase which would have a positive impact	**Short-term Negative** Lower revenues would likely continue until stocks are fully rebuilt **Long-term Positive** Sustainable resources should support viable communities and economies

Impact Definitions:

-Regulated Groundfish Stocks, Non-groundfish species, Endangered and Other Protected Species: positive=actions that increase stock size and negative=actions that decrease stock size

-Habitat: positive=actions that improve or reduce disturbance of habitat and negative=actions that degrade or increase disturbance of habitat

-Human Communities: positive=actions that increase revenue and well being of fishermen and/or associated businesses negative=actions that decrease revenue and well being of fishermen and/or associated businesses

6.5 Baseline Conditions for Resources and Human Communities

For the purposes of a CEA, the baseline conditions for resources and human communities is considered the present condition of the VECs plus the combined effects of the past, present, and reasonably foreseeable future actions. Table 34 below illustrates the baseline conditions found as part of the FW 45 cumulative effects analysis. These conditions remain timely and relevant. Please refer to the cumulative effects assessment in Section 8.7.3 of FW 45 (NEFMC 2011) to review a complete summary of the baseline conditions for each VEC.

Table 34. Summary of Baseline Conditions for each VEC

Valued Ecosystem Component	Cumulative Effects Assessment Baseline Condition
Regulated Groundfish Stocks	**Negative** – Short term overharvesting in the past contributed to several stocks being overfished or where overfishing is occurring; **Positive –** Long term regulatory actions taken over time have reduced fishing effort and with the addition of Amendment 16, stocks are expected to rebuild in the future
Other Stocks	**Positive** – Although prior groundfish management measures likely contributed to redirecting effort onto non-groundfish species, as groundfish rebuild this pressure should lessen and all of these species are also managed through their own FMP.
Endangered and other protected species	**Positive** – Reduced gear encounters through effort reductions and additional management actions taken under the ESA and MMPA.
Habitat, including non-fishing effects	**Mixed** - Reduced habitat disturbance by fishing gear but impacts from non-fishing actions, such as global warming, could increase and have a negative impact.
Human Communities	**Negative –** Short term lower revenues would continue until stocks are sustainable. **Positive** – Long term sustainable resources should support viable communities and economies.

6.6 Summary of the Impacts from the Proposed Action

The proposed action would revise the status determination criteria (administrative in nature) and allocate additional GOM winter flounder to the fishery for harvest during the remainder of FY 2011. The proposed level of catch would be consistent with sustaining the biomass over the long-term when fishing at a sustainable level of mortality (F_{MSY}). Both scientific and management uncertainty are accounted for in this catch level, so the risks of negative biological impacts have been minimized. A larger catch limit for GOM winter flounder may result in greater fishing effort and greater catch of other stocks in addition to GOM winter flounder because this stock would no longer serve as a constraining stock to other groundfish stocks caught concurrently. An effect of an increase in fishing effort would be to increase slightly the interactions of groundfish gear with protected resources. However, the scope of this increase with respect to the overall fishery is expected to be negligible. Similarly, an increase in fishing effort would slightly increase the interactions of groundfish gear with EFH. However, with respect to the overall fishery these impacts are expected to be negligible. Finally, due to the greater allowance of GOM winter flounder catch, up to nearly $1.2 million increase in revenue

could be realized over the course of this action, assuming recent average prices for GOM winter flounder and that all available ACL for this stock would be harvested.

6.7 Summary of the Cumulative Effects

The following analysis summarizes the cumulative effects on the VECs identified in this section through the consideration of past, present, and reasonably foreseeable future actions in combination with the baseline condition for resources and human communities and impacts from the proposed action.

Regulated Groundfish Stocks

As found in the cumulative effects analysis for FW 45 to the FMP (NEFMC 2011), the long-term trend in this fishery has been positive for cumulative impacts to target species. While several groundfish species remain overfished or overfishing is occurring, substantial effort reductions since implementation of the NE Multispecies FMP have allowed several stocks to rebuild and the rebuilding process for others is underway. In the case of GOM winter flounder, effort reductions have yielded positive impacts in that the exploitation rate for this stock in 2010 remains below the overfishing threshold. While the proposed action would allow greater harvest of this stock, given the substantial effort reductions that should remain place for several years and the low exploitation rate observed in 2010, the cumulative effect of this action is expected to continue to rebuild GOM winter flounder stock, with no anticipated significant impacts. Because GOM winter flounder is caught along with other desirable groundfish species, the increased GOM winter flounder catch should provide vessels greater opportunity to catch these species. However, since all regulated species are constrained through catch limits implemented through past actions, the combination of past actions with the proposed action would continue the sustainable harvest of other regulated species and would not be expected to result in any significant cumulative effects.

Other Stocks

The primary non-allocated target and bycatch species analyzed for the purposes of this EA are monkfish, dogfish, and skates. Management efforts in the past have led to each of these species being managed under their own FMP. With the exception of smooth and thorny skates, which are overfished, none of these species is overfished, nor is overfishing occurring. The proposed action was found to yield no negative impacts to all of these species. While it is possible that with additional GOM winter flounder catch available, vessels may have the opportunity to fully fish their quota of other regulated groundfish species and, therefore, slightly increase effort on these other species, there are regulations in place through the various FMPs for monkfish, dogfish, and skates that limit overall effort on these species. Further, future management actions geared toward maintaining sustainable harvests of these stocks are underway. Therefore, based on past, present and reasonably foreseeable future actions, no significant cumulative impacts to other stocks are expected.

Endangered and Other Protected Species

Historically, the implementation of FMPs has resulted in reductions in fishing effort and as a result, past fishery management actions are thought to have had a slightly positive impact on strategies to protect protected species. Gear entanglement continues to be a source of injury or

mortality, resulting in some adverse effects on most protected species to varying degrees. Measures adopted by Amendment 16 are expected to substantially reduce the overall commercial fishing effort and the amount of groundfish that can be caught, relative to historical amounts that have been harvested by the commercial multispecies fleet, as observed during FY 2010 (see Table 22). The cumulative result of these actions to meet mortality objectives will be positive for protected resources. The effects from non-fishing actions are also expected to be low negative as the potential for localized harm to VECs exists. While it is possible that with additional GOM winter flounder catch available, vessels may have the opportunity to fully fish their quota thus slightly increasing effort, the substantial effort reductions implemented through Amendment 16 should result in a net overall reduction in effort and thus fewer opportunities for interaction with protected species.

NMFS has implemented specific regulatory actions to reduce injuries and mortalities to marine mammals from gear interactions. NMFS implemented the Harbor Porpoise Take Reduction Plan (HPTRP) in 1998, and the Atlantic Large Whale Take Reduction Plan (ALWTRP) in 1999 that positively affect large whales (North Atlantic right, humpback, and fin) and harbor porpoises in waters off the U.S. East Coast by reducing mortality due to incidental entanglement in fishing gear. This action does not modify provisions of either the HPTRP or the ALWTRP. Therefore, it is not expected that this action would have an adverse impact on species protected by those plans.

As noted in Section 4.4, one of the primary factors affecting Atlantic sturgeon cited in NMFS' proposed listing for the five DPSs of Atlantic sturgeon is bycatch. Previous analyses concluded that to remain stable or grow, populations of Atlantic sturgeon can sustain only very low anthropogenic sources of mortality (Kahnle et al. 2007). It is apparent, therefore, that should the proposed listing be finalized, reductions in bycatch mortality will most likely be required in order to recover Atlantic sturgeon. Final listing determinations for the Atlantic sturgeon DPSs are expected in early 2012. If the final listing determinations are finalized as proposed, the effective date of the listing will most likely be 60 days after the publication date. With the publication of a final listing rule, a Section 7 consultation would be required, as the analysis conducted by the ASMFC and Stein et al. (2004a) and an updated evaluation of NEFOP data from 2006 through 2010 (see Section 4.4) demonstrate that the multispecies fishery may affect Atlantic sturgeon. Through that consultation process, the effects would be estimated and analyzed.

At this point, because Atlantic sturgeon is a proposed species under the ESA, the question under the ESA is whether the proposed action is likely to jeopardize the continued existence of the proposed species. Atlantic sturgeon is a proposed species only until a final listing determination is made. When a final listing determination is made, the proposed rule will either be withdrawn or final listing rule will be published. NMFS has considered whether the NE multispecies fishery is likely to jeopardize the proposed Atlantic sturgeon DPSs and concludes that it is not. While it is possible that there may be interactions between Atlantic sturgeon and gear used in the NE multispecies fishery, the amount of interactions attributable to the NE multispecies fisheries that will occur between now and the time a final listing determination will be made is not likely to cause an appreciable reduction in survival and recovery of any of the five DPSs. During the first quarter of the calendar year, estimated encounters with Atlantic sturgeon by the gear predominantly used in the groundfish fishery (i.e., large-mesh sink gillnet and otter trawl gear) and in waters in which most of the groundfish fishing effort is based (the 500 series of statistical) are relatively low, according to the preliminary analysis of NEFOP data.

As noted in Section 4.4, DPS-specific population levels for Atlantic sturgeon are difficult to quantify at this time, and further work needs to be done to accurately quantify the population of this species, thereby triggering the need for a conference on whether NMFS should seek to implement, under its discretionary authority, measures to reduce any adverse impacts on the Atlantic sturgeon. Current estimates for DPS are noted in Section 4.4. Although NMFS does not have information necessary to determine the sex or spawning condition of Atlantic sturgeon encountered by the groundfish fishery, these encounters may include both males and females and fish that may or may not spawn during that year. Therefore, encounters of Atlantic sturgeon by the groundfish fishery are expected to be a subset of the entire population, as opposed to being comprised exclusively of the smaller annual spawning population.

Despite limited information that can be used to accurately estimate the number of Atlantic sturgeon in each DPS and because the rate of bycatch in quarter one of the fishing year is at the lowest levels compared to the other three quarters, it is unlikely that the continued operation of the multispecies fishery would result in significant impacts to any DPS of Atlantic sturgeon during the first quarter of the 2012 calendar year. Prior to, or during the first quarter of the calendar year, it is expected that the listing determination will be published and if the listing is finalized as proposed, an ESA Section 7 formal consultation will be completed that includes a biological opinion (BO). NMFS will implement any appropriate measures outlined in the BO to mitigate harm to Atlantic sturgeon. Further, the encounter rates and mortalities for Atlantic sturgeon that have been calculated as part of the preliminary analysis of NEFOP data include encounters and mortalities by all fisheries utilizing large-mesh sink gillnet and otter trawl gear, including the spiny dogfish, and monkfish fisheries. Thus, it is likely that rates of encounters and mortalities by the groundfish fishery would be lower than those estimates.

Habitat Including Non-fishing Effects

While the impact analysis in this action is focused on direct and indirect impacts to habitat and EFH, there are a number of non-fishing impacts that must be considered when assessing cumulative impacts. Many of these activities are concentrated near-shore and likely work either additively or synergistically to decrease habitat quality. Other non-fishing factors such as climate change and ocean acidification are also thought to play a role in the degradation of habitat. The effects of these actions, combined with impacts resulting from years of commercial fishing activity, have negatively affected habitat and EFH. However, the general trend in fisheries management toward effort reductions, particularly with the implementation of Amendment 16, has yielded positive impacts to habitat and EFH. Although impacts from the proposed action were found to be slightly negative or neutral, when considered in the larger context of cumulative impacts, even slightly negative impacts due to increased effort would represent a substantial effort reduction compared to years before the implementation of Amendments 13 and 16. Based on this rational, the cumulative impacts from the proposed action, when considered with past, present and reasonably foreseeable future actions would not be significant.

It is difficult to predict the amount of fishing effort that will occur during the remainder of FY 2011 due to the novelty (expanded sector management since 2010) and complexity of many aspects of the FMP. Although the amount of fishing effort associated with the proposed action will likely be greater than that associated with the No Action Alternative, the overall fishing effort in the groundfish fishery, including effort targeting GOM winter flounder, will still

likely be reduced compared with previous fishing years, due to the DAS restrictions and catch limits for all stocks implemented under Amendment 16 and FW 44 for FY 2011. It is highly unlikely that the amount of fishing effort overall, or the amount of fishing behavior targeting GOM winter flounder, will be greater than the fishing effort in the fishery during recent years, due to the existing regulatory constraints in the FMP.

The increase in fishing effort allowed by the larger GOM winter flounder catch limit proposed under this action could be offset by additional restrictions in the FMP. Specifically, if a stock with a low ACL such as GOM haddock (8 mt) is exceeded, regulations would be triggered that require the Regional Administrator to implement restrictive in-season trip limits or modifications to the DAS counting rules for the common pool. More likely, however, is that the common pool FY 2011 GOM cod sub-ACL (104 mt) will be caught first, as over 74 percent of the sub-ACL has been caught by common pool vessels through December 3, 2011 (see http://www.nero.noaa.gov/ro/fso/MultiMonReports.htm). For sectors, exceeding one stock's ACE would trigger the cessation of all sector operations in that stock area, including trips targeting other groundfish stocks. Thus, it is unlikely that the proposed action will increase overall fishing effort due to other measures implemented to constrain catch of other groundfish stocks. In the context of the NE multispecies fishery as a whole, and in light of the overall recent effort reductions in the fishery and the constrains in fishing effort in effect, the net effect of the increase in the GOM winter flounder catch limits for the remainder of FY 2011 will be neutral if not slightly negative impacts to interactions with protected species, but overall negligible compared to operations in the fishery during recent years.

Human Communities

Past management actions have had significant negative impacts on communities that depend on the groundfish fishery, particularly as a result of decreases in revenue. Although special programs implemented through Amendment 13 and subsequent framework actions have provided the industry additional opportunities to target healthier groundfish stocks, substantial increases in landings and revenue will likely not take place until further stock rebuilding occurs under the Amendment 16 rebuilding plans. The proposed action would result in up to nearly $1.2 million increase in revenue over the course of the remainder of FY 2011. While helpful, this increase would not offset the substantial revenue reductions of the past, particularly as a result of Amendments 13 and 16. Therefore, the cumulative impact of this action in conjunction with other past, present and reasonably future actions would likely do little to offset the trend of significant negative impacts on communities until future stock rebuilding occurs.

7.0 Applicable Law

7.1 Magnuson-Stevens Fishery Conservation and Management Act

7.1.1 Consistency with National Standards

Section 301 of the Magnuson-Stevens Act requires that regulations implementing any fishery management plan or amendment be consistent with the ten national standards listed below.

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 revision to the GOM winter flounder status determination criteria, annual catch limits, and common pool possession limits will have a positive biological impact by aligning current management measures with the best available scientific information. The level of catch is consistent with sustaining the biomass over the long-term when fishing at a sustainable level of mortality (F_{MSY}). The increased level of GOM winter flounder catch allowed brings the catch level of both the stock and the fishery overall closer toward optimal yield. Both scientific and management uncertainty are accounted for in this catch level, minimizing the risks of overfishing and associated negative biological impacts to this, or other managed stocks under the FMP.

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

The principle reason for the revision to the GOM winter flounder status determination criteria and ACLs is to align current management measures with updated stock assessment information that indicates catch of this stock can be increased. The new peer-reviewed GOM winter flounder stock assessment (SAW 52) represents an improvement over the previous stock assessment, which had greater uncertainty associated with it. The economic analyses in this document are based primarily on landings, revenue, and effort information collected through the NMFS data collection systems used for this fishery. These data sources were used as the basis of this action, and represent the best available scientific information.

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 action, as a revision of the NE Multispecies FMP, manages the GOM winter flounder stock as a unit throughout its range. In addition, the groundfish complex as a whole is managed in close coordination. Management measures are designed and evaluated for their impact on individual stocks and on the fishery as a whole.

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 management measures do not discriminate between residents of different states. They are applied equally to all permit holders, regardless of homeport or location. While the measures do not discriminate between permit holders, they do have different impacts on different participants. This is because of the differences in the distribution of fish. For example, vessels that fish closer to shore may realize the most benefit from the increased GOM winter flounder catch limits proposed in this action due to the distribution of this stock, while sector participants and their associated sectors that have low PSCs and ACEs, respectively, for GOM winter flounder would benefit more than those with already high PSCs or ACEs for this stock. Even if

the measures are designed to treat all permit holders the same, the fact that fish stocks are not distributed evenly, and that individual vessels may target specific stocks, means that distributive impacts cannot be avoided.

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

The revised catch limits specified by this action do not have economic allocation as their sole purpose – all are designed to contribute to the control of fishing mortality by allowing the fishery to catch the amount of fish that is appropriate given the status of the stock, and the requirements of the FMP and MSA, based upon updated scientific information.

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

The primary effort controls used in this management plan – DAS and sectors – allow each vessel operator some flexibility to fish when and how it best suits his or her business. Vessels can make short or long trips, and can fish in any open area at any time of the year (although opportunity will likely decline as the fishing year progresses). The measures allow for the use of different gear, vessel size, and fishing practices. The specific measures adopted in this action add to such flexibility by increasing GOM winter flounder catch limits and decreasing the potential the GOM winter flounder ACLs would restrict fishing opportunities for other groundfish stocks.

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

The catch limits implemented by this action will provide additional fishing opportunity and revenue for vessels that land GOM winter flounder. While some of the measures used in the management plan tend to increase costs, those measures are necessary for achieving the plan's objectives. The proposed measures accomplish other goals, however, by keeping catch within mortality targets and allowing rebuilding programs to continue. In addition, they will likely lead to reduced costs to lease ACE due to increasing the supply of ACE on the leasing market. The measures do not duplicate other regulatory efforts. Management of multispecies in federal waters is not subject to coordinated regulation by any other management body. Absent this action, a Council action to increase the GOM winter flounder catch limits would be necessary, and result in lost fishing opportunity and unnecessary waste, particularly for the remainder of FY 2011.

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.

Consistent with the requirements of the MSA to prevent overfishing and rebuild overfished stocks, this action restricts fishing activity through the imposition of restrictions on allowable catches. Analyses of the impacts of this action show that overall landings and revenues are likely to increase, thereby reducing adverse impacts on fishing communities. At the individual level, landings and revenue will depend upon the vessel's fishing behavior and fishing history (if fishing in a sector).

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

The revised GOM winter flounder catch limits are expected to have little impact on the rate of bycatch. This action would reduce incentives to discard GOM winter flounder, especially as the common pool or a sector approaches applicable sub-ACLs or ACEs, respectively, and may turn some discards, particularly regulatory discards for common pool vessels, into landings. Overall, such measures could slightly increase the net amount of bycatch if the increased catch limit enables vessels to increase their fishing effort and vessels discard more undersized fish.

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

The revised GOM winter flounder catch limits are expected to have no impact on the safety of the fishing operations of vessels fishing under the requirements of the FMP.

7.1.2 Other Magnuson-Stevens Act Requirements

Section 303(a) of the 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 Northeast 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;

Foreign fishing is not allowed under this management plan or this action and so specific measures are not included that specify and control allowable foreign catch. The measures in this management plan are designed to prevent overfishing and rebuild overfished stocks by vessels of the United States consistent with the National Standards. The revised catch limits would

increase fishing effort and, therefore, mortality, but would not result in overfishing. There are no international agreements that are germane to the management of GOM winter flounder.

(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;

Amendment 16 included a thorough description of the multispecies fishery from 2001 through 2008, including the gears used, number of vessels, landings and revenues, and effort used in the fishery. This action provides a summary of that information and additional relevant information about the GOM winter flounder fishery in Section 4.5.

(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;

The present biological status of GOM winter flounder is described in Section 4.2, as is the updated stock assessment upon which this status is based (SAW 52). Likely future conditions of the resource are described in Section 6.0. Impacts resulting from other measures in the management plan other than the specifications included here can be found in FW 45. The MSY for each stock in the fishery is defined in Amendment 16 and optimum yield for the fishery is defined in Amendment 9.

(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;

U.S. fishing vessels are capable of, and expected to, harvest the optimum yield from this fishery, as specified in FW 44 and FW 45 (NEFMC 2009c and 2011, respectively). U.S. processors are also expected to process the harvest of U.S. fishing vessels. None of the optimum yield from this fishery can be made available to foreign fishing.

(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;

Current reporting requirements for this fishery have been in effect since 1994 and were originally specified in Amendment 5. They were slightly modified in Amendments 13 and 16, and VMS requirement were adopted in FW 42. The requirements include Vessel Trip Reports (VTRs) that are submitted by each fishing vessel and VMS and DAS declaration requirements. Dealers are also required to submit reports on the purchases of regulated groundfish from permitted vessels. Current reporting requirements are detailed in 50 CFR 648.7. Recent requirements were implemented in order to support the need for more timely monitoring to support the implementation the annual catch limit requirements of the MSA. The proposed action does not revise any of the existing reporting requirements.

(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;

Provisions in accordance with this requirement were implemented in earlier actions, and are not revised under this action. For common pool vessels, the carry-over of a small number of DAS is allowed from one fishing year to the next. If a fisherman is unable to use all of his DAS because of weather or other conditions, this measure allows his available fishing time to be used in the subsequent fishing year. Sectors are also allowed to carry forward a small amount of ACE into the next fishing year. This will help sectors react should adverse weather interfere with harvesting the entire ACE before the end of the year. Neither of these practices requires 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 was defined for Atlantic wolffish in Amendment 16 (NEFMC 2009), and for all stocks in an earlier action. A summary of the EFH can be found in Section 4.1.3 of this EA.

(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;

Current research needs are identified in Amendment 16 (NEFMC 2009). The 2011 peer-reviewed GOM winter flounder stock assessment (SAW 52), upon which this action is based, was not able to determine whether the stock is overfished (NEFSC 2011). The main sources for uncertainty in this assessment were the variability of surveys used for this stock assessment and the area swept by an average survey tow. More information is needed for these parameters to

improve stock assessments and improve the effectiveness of stock assessments and, therefore, management of this species. For all the stocks in the FMP, NMFS and the Council will respond to new information as swiftly as possible, within the constraints of the regulatory process.

(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;

Impacts of this framework on fishing communities directly affected by this action and adjacent areas can be found in Sections 5.2 and 5.3 of this 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;

Objective and measurable status determination criteria for all species in the management plan are presented in Amendment 16 and FW 45 (NEFMC 2009 and 2011, respectively). A full explanation of how the criteria were determined can be found in the GARM III (NEFSC 2008), Data Poor Working Group documents (DPWG 2009), and SAW 50 for pollock. For GOM winter flounder, this action implements new status determination criteria based upon the revised information in SAW 52 (NEFSC 2011). The Council has taken subsequent action to revise the GOM winter flounder status determination criteria on a permanent basis through FW 47.

(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;

A Standardized Bycatch Reporting Methodology omnibus amendment was adopted by the Council in June 2007. That methodology was used to determine observer and at-sea monitoring coverage for FY 2011 in the groundfish fishery. Although there is a GOM winter flounder trip limit of 250 lb per trip currently in place, trip limits do not appear to have been a limiting factor in determining catch of GOM winter flounder in recent years and has not resulted in excessive bycatch and discards of this stock. The increased catch limit for GOM winter flounder proposed in this action reduces the potential for excessive bycatch and associated mortality for the remainder of FY 2011 by avoiding the need to implement reduced trip limits or other measures to prevent sub-ACLs for this stock from being exceeded.

(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;

This management plan does not include a catch and release recreational fishery management program and thus does not address this requirement.

(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;

As noted above, the description of the commercial, recreational, and charter fishing sectors was fully developed in Amendment 16, and augmented by FW 45 (NEFMC 2009 and 2011, respectively). This document provides additional pertinent information on the commercial landings of GOM winter flounder (Section 4.5).

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

The method of restrictions and allocations to the fishery were adopted in Amendment 16. This action does not allocate harvest restrictions or stock benefits to the fishery in a novel way, but specifies increased catch limits for GOM winter flounder for the remainder of FY 2011 consistent with the existing allocation structure.

(15) Establish a mechanism for specifying annual catch limits in the plan (including a multiyear plan), implementing regulations, or annual specifications, at a level such that overfishing does not occur in the fishery, including measures to ensure accountability.

Revised ACL specifications for pollock are implemented through this action. The ACL process was described in Amendment 16 and FW 44 (NEFMC 2009 and 2009c, respectively). The GOM winter flounder specifications of this emergency action were developed in a way to ensure that overfishing does not occur, in accordance with Amendment 16 and all relevant laws.

7.1.3 Essential Fish Habitat 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 the NMFS.

Description of Action

The proposed action is described in Section 3.0, and consists of revise the stock status determination criteria and increasing the FY 2011 catch limits for GOM winter flounder to reflect the most recent scientific information regarding the status of this stock. The modification

to the stock status determination criteria (Section 3.1) is not expected to affect EFH because it is administrative in nature.

In general, the activity within the scope of this Action, fishing for groundfish species, occurs off the New England and MA coasts within the U.S. EEZ. Thus, the range of this activity occurs across the designated EFH of all Council-managed species (see Amendment 11 to the Northeast Multispecies FMP for a list of species for which EFH was designated, the maps of the distribution of EFH, and descriptions of the characteristics that comprise the EFH). EFH designated for species managed under the Secretarial Highly Migratory Species FMPs are not affected by this action, nor is any EFH designated for species managed by the South Atlantic Council as all of the relevant species are pelagic and not directly affected by benthic habitat impacts.

Assessing the Potential Adverse Impacts

The potential adverse impacts to habitat are described in Section 5.1.3.2 (habitat impacts of Proposed Action). This section demonstrates that the overall habitat impacts of the proposed measures have neutral impacts relative to the baseline habitat protections established under Amendment 13 to the Northeast Multispecies FMP. As such, additional measures to mitigate or minimize adverse effects of the multispecies fishery on EFH beyond those established under Amendment 13 are not necessary.

Conclusions

Because there are no adverse impacts associated with this action relative to the Amendment 13 baseline, no EFH consultation is required.

7.2 Environmental Policy Act (NEPA)

NEPA provides a mechanism for identifying and evaluating the full spectrum of 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. The Council on Environmental Quality (CEQ) has issued regulations specifying the requirements for NEPA documents (40 CFR 1500 – 1508), as has NOAA in its agency policy and procedures for NEPA in NAO 216-6 §5.04b.1. All of those requirements are addressed in this document, as referenced below.

7.2.1 Environmental Assessment

The required elements of an Environmental Assessment (EA) are specified in 40 CFR 1508.9(b) and NAO 216-6 §5.04b.1. They are included in this document as follows:

- The need for this action is described in section 2.2;
- The alternatives that were considered are described in section 3.0 (No Action and Proposed Action);
- The environmental impacts of the Proposed Action are described in section 5.0;
- The agencies and persons consulted on this action are listed in section 8.0.

While not required for the preparation of an EA, this document includes the following additional sections that are based on requirements for an Environmental Impact Statement (EIS).

- An Executive Summary can be found in section 1.0.
- A table of contents can be found on page 5.
- Background and purpose are described in Section 2.0.
- A brief description of the affected environment is in Section 4.0.
- Cumulative impacts of the Proposed Action are described in Section 6.0.
- A determination of significance is in Section 7.2.2
- A list of preparers is in Section 8.0.

7.2.2 Finding of No Significant Impact (FONSI)

National Oceanic and Atmospheric Administration Order (NAO) 216-6 (revised May 20, 1999) proposed criteria for determining the significance of the impacts of a proposed fishery management action. In addition, the Council on Environmental Quality 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 Proposed Action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?*

Response: This action cannot be reasonably expected to jeopardize the sustainability of any target species that may be affected by the action. Analysis of the measures in Section 5.0 indicates that the revision to the GOM winter flounder status determination criteria and FY 2011 catch limits will align current management measures with the best available scientific information regarding the acceptable level of catch for this stock. The level of catch is consistent with sustaining the biomass over the long-term when fishing at a sustainable level of mortality (F_{MSY}). Both scientific and management uncertainty are accounted for in this catch level, so the risks of negative biological impacts have been minimized.

(2) *Can the Proposed Action reasonably be expected to jeopardize the sustainability of any non-target species?*

Response: This action cannot be reasonable expected to jeopardize the sustainability of any non-target species that may be affected by the action. The proposed measures will revise the GOM winter flounder catch limits for the remainder of FY 2011 and may increase fishing effort slightly during this time. However, other constraints designed to limit fishing mortality on other groundfish stocks are expected to limit the potential increase in effort to levels below that observed in recent fishing years. There are no indications that an increase in groundfish fishing activity will jeopardize the sustainability of non-target species, particularly over such a short duration as proposed in this action.

(3) *Can the Proposed Action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?*

Response: The proposed action cannot be reasonably expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in the FMP. As discussed in section 5.1.3.2, the proposed measure in the context of the FMP as a whole, is expected to have a slightly negative to neutral impact on habitat since it may allow a slight increase in fishing effort that is still less than overall fishing effort in recent years.

(4) *Can the Proposed Action be reasonably expected to have a substantial adverse impact on public health or safety?*

Response: Nothing in the proposed action can be reasonable expected to have a substantial adverse impact on public health or safety. Measures adopted in Amendment 16 were designed to improve safety in spite of low ACLs implemented by FW 44. The flexibility inherent in sector management and the ability to use common pool DAS at any time are key elements of the measures that promoted safety. To the extent this action will allow additional fishing opportunity and revenue, it does not raise concerns about causing a change in incentives that may negatively impact vessel safety.

(5) *Can the Proposed Action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

Response: Although it is expected that fishing effort will increase slightly as part of the proposed action, the net effect on protected species is expected to be negligible (Section 5.1.2), especially considering the duration of this action (January – April 2012). Overall fishing effort in the groundfish fishery, including effort targeting GOM winter flounder, will still likely be reduced compared with previous fishing years, due to other measures implemented to constrain catch of other groundfish stocks. In the context of the NE multispecies fishery as a whole, the net effect of the increase in the GOM winter flounder catch limits for the remainder of FY 2011 will be neutral if not slightly negative impacts to interactions with protected species, although the impacts are expected to be negligible in light of the overall recent effort reductions in the fishery and the constrains in fishing effort in effect.

(6) *Can the Proposed Action 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.)?*

Response: The proposed action is not expected to have a substantial impact on biodiversity and/or ecosystem function with the affected area. The use of ACLs will tightly control catches of target and incidental regulated groundfish stocks. Catches of target and incidental catch species under this program will be consistent with the mortality targets of Amendment 16 and FW 45, and thus will not have a substantial impact on predator-prey relationships or biodiversity. This action will have no more than minimal adverse impacts to EFH and that the overall impact

to EFH will be neutral. It is, therefore, reasonable to expect that there will not be substantial impact on biodiversity or ecosystem function.

(7) *Are significant social or economic impacts interrelated with natural or physical environmental effects*?

Response: The EA documents that no significant natural or physical effects will result from the implementation of the Proposed Action. The proposed action is designed to implement revised specifications for GOM winter flounder to continue the groundfish rebuilding programs that were implemented as a result of Amendments 13 and 16 to the Northeast Multispecies FMP. As described in section 5.1.1.2, the level of catch specified by this action is consistent with sustaining the biomass over the long-term when fishing at a sustainable level of mortality (F_{MSY}). The action cannot be reasonably expected to have a substantial impact on habitat or protected species, as the level of fishing effort targeting GOM winter flounder and in the fishery at-large is expected to fall within the range of that analyzed in Amendment 16. The action's potential economic and social impacts are also addressed in this EA (see Sections 5.2 and 5.3, respectively) and more specifically in the Executive Order 12866 review and the Regulatory Impact Review (Section 7.11).

NMFS has determined that there is no need to prepare an EIS. The purpose of NEPA is to protect the environment by requiring Federal agencies to consider the impacts of their Proposed Action on the human environment, defined as "the natural and physical environment and the relationship of the people with that environment." The EA for this action describes and analyzes the proposed measure and alternative and concludes there will be no significant impacts to the natural and physical environment. Some fishermen, shore-side businesses and others may experience positive impacts to their livelihood, these impacts in and of themselves do not require the preparation of an EIS, as supported by NEPA's implementing regulations at 40 C.F.R. 1508.14. Consequently, because the EA demonstrates that the action's potential natural and physical impacts are not significant, the execution of a FONSI remains appropriate under criteria 7.

(8) *Are the effects on the quality of the human environment likely to be highly controversial*?

Response: The effects of the proposed measures on the quality of human environment are not expected to be highly controversial. The need to rebuild groundfish stocks is well-documented. While there has been some debate over whether the ACLs for some stocks can be increased in order to avoid negative impacts on the fishery, this action alleviates that concern for one stock.

(9) *Can the Proposed Action 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?*

Response: No, the proposed action cannot be reasonably expected to result in substantial impacts to unique areas or ecological critical areas. 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 the human environment likely to be highly uncertain or involve unique or unknown risks?*

Response: The proposed action is not expected to result in highly uncertain effects on the human environment or involve unique or unknown risks. The revised catch limits are based upon the best available scientific information, and take management and scientific uncertainty into account. While there is a degree of uncertainty over how much additional fishing opportunity and revenue will result from the increased catch limits, both the sectors and common pool components of the fishery will be subject to management measures that the Amendment 16 and FW 44 analyses indicate will be effective in controlling fishing effort. Overall, the impacts of the proposed action can be, and are, described with a relative amount of certainty.

(11) *Is the Proposed Action related to other actions with individually insignificant, but cumulatively significant impacts?*

Response: The proposed action is not related to other actions with individually insignificant, but cumulatively significant impacts. Recent management actions in this fishery include Amendment 16 and FW 44. The scope of the catch limits specified by this action is relatively minor in relation to the scope of impacts that were anticipated by Amendment 16 and FW 44. Thus, the proposed action cannot be said to have different cumulative impacts that were not foreseen and addressed in that amendment. Therefore, the proposed action, when assessed in conjunction with the regulatory actions noted above, would not have significant impacts on the natural or physical environment.

(12) *Is the Proposed Action 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?*

Response: The proposed action 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 in the fishery area that is 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 proposed action 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 Proposed Action reasonably be expected to result in the introduction or spread of a non-indigenous species?*

Response: This action would not result in the introduction or spread of any non-indigenous species, as it would not result in any vessel activity outside of the Northeast region.

(14) *Is the Proposed Action likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?*

Response: No, the proposed action is not likely to establish precedent for future actions with significant effects. The proposed action adopts specifications designed to respond to recent scientific information, consistent with the methods for setting catch limits adopted by Amendment 16 and provisions outlined in FW 44 to allow the Regional Administrator to revise common pool trip limits to allow vessels to achieve, but not exceed common pool sub-ACLs. As such, the action is designed to address a specific circumstance and is not intended to represent a decision about future management actions that may adopt different measures.

(15) *Can the Proposed Action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?*

Response: The proposed action is intended to implement measures that are consistent with the protection of marine resources and would not threaten a violation of Federal, state, or local law or requirements to protect the environment.

(16) *Can the Proposed Action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?*

Response: As specified in the responses to the first two criteria of this section, the proposed action is not expected to result in cumulative adverse effects that would have a substantial effect on target or non-target species. This action would be consistent with optimizing the long-term sustainable use of the GOM winter flounder resource. Any impacts on target or non-target species would be minimized by other effort controls in the fishery that are designed to limit catch to sustainable levels.

FONSI STATEMENT: In view of the information presented in this document and the analysis contained in this EA and the EA prepared for FW 44 to the NE Multispecies FMP, it is hereby determined that this emergency action to revise the GOM winter flounder status determination criteria and fishing year 2011 catch limits will not significantly impact the quality of the human environment as described above and in the supporting EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not required.

Harold C Mears — January 24, 2012

for Northeast Regional Administrator, NOAA — Date

7.3 Endangered Species Act (ESA)

While ESA Section 7 consultations are required when the proposed action may affect listed species, a conference is required only when the proposed action is likely to jeopardize the

continued existence of a proposed species or destroy or adversely modify proposed critical habitat. Therefore, a conference would be required if it was determined that the NE multispecies fishery was likely to jeopardize one or more of the proposed five distinct population segments (DPS) of Atlantic sturgeon or one or more of the nine DPSs of loggerhead sea turtles.

A biological assessment evaluates the potential effects of an action on listed and proposed species and designated and proposed critical habitat to determine whether any such species or habitat are likely to be adversely affected by the action. A biological assessment is used in determining whether formal consultation or a conference is necessary. A formal Section 7 consultation was completed in October 2010 which analyzed the effects of the NE multispecies fishery on listed species and designated critical habitat, including loggerhead sea turtles. For listed species, therefore, the proposed action has been analyzed in an informal consultation dated January 11, 2012, and it has been determined that they are not likely to cause an effect to listed species or critical habitat not considered in the October 2010 Biological Opinion.

That October 2010 Biological Opinion for the NE multispecies fishery concluded that the NE multispecies fishery may affect, but was not likely to jeopardize, loggerhead sea turtles. An incidental take statement and associated reasonable and prudent measures and terms and conditions were included with that Biological Opinion. In reaching that conclusion, the Biological Opinion considered the effect of the estimated take on nesting beach aggregations and ultimately to the global species as listed. The difference between the analysis contained in the October 2010 Biological Opinion and that conducted for the proposed species would be that it was conducted at the level of the global species and it was conducted for a species listed as threatened whereas the proposal is for nine DPSs, two of which are proposed to be listed as threatened and seven to be listed as endangered. The Northwest Atlantic DPS is the one affected the most by the multispecies fishery and it is proposed to be listed as endangered. It is important to note that the effects analysis was conducted by examining the estimated number of takes against what is known about the biological status of loggerhead sea turtles and did not explicitly include any specific variable that would be affected by the listing status (e.g. threatened or endangered). Since the October 2010 Biological Opinion considered effects at the nesting beach aggregation level first and then aggregated up to consider effects at the species level, an analysis considering effects at the DPS rather than species level and on an endangered rather than threatened species would not change the jeopardy conclusion of that Biological Opinion. Therefore, NMFS concluded that a conference for the proposed loggerhead DPSs is not required.

Atlantic sturgeon are known to be captured in sink gillnet, drift gillnet, and otter trawl gear. Of these gear types, sink gillnet gear poses the greatest known risk of mortality for bycaught sturgeon. Sturgeon deaths were rarely reported in the otter trawl observer dataset. However, the level of mortality after release from the gear is unknown. Recent preliminary analysis estimates that between 2006 and 2010, a total of 15,587 lb of Atlantic sturgeon were captured and discarded in bottom otter trawl (7,740 lb) and sink gillnet (7,848 lb) gear. The analysis found that 7.1 percent (549.5 lb) of the weight of sturgeon discards in bottom otter trawl gear could be attributed to the large mesh gillnet fisheries if a correlation of FMP species landings (by weight) was used as a proxy for fishing effort; this equates to 3.5 percent of the weight of sturgeon discards in both gear types. This supports the conclusion from earlier bycatch estimates that the multispecies fishery may interact with Atlantic sturgeon from now until the

time a final listing determination is made for the species. However, the magnitude of that interaction during the timeframe of interest is not likely to cause an appreciable reduction in survival and recovery. If any of the proposed Atlantic sturgeon DPSs are listed as endangered or threatened under the ESA, the formal consultation for the multispecies fisheries will be reinitiated, and additional evaluation will be included to describe any impacts of the fisheries on Atlantic sturgeon and define any measures needed to mitigate those impacts, if necessary. It is anticipated that any measures, terms and conditions included in an updated Biological Opinion will further reduce impacts to the species. If Atlantic sturgeon is listed, it is expected that both the decision and the completion of the Biological Opinion will occur before the beginning of the 2012 multispecies fishing year on May 1.

7.4 Marine Mammal Protection Act (MMPA)

NMFS, Northeast Region has reviewed the impacts of this action on marine mammals and has concluded that the management action is consistent with the provisions of the MMPA. Although the specification of large catch limits may increase fishing effort, and thus could affect species inhabiting the multispecies management unit, the measures will not alter the effectiveness of existing MMPA measures, such as take reduction plans, to protect those species based on overall reductions in fishing effort that have been implemented through the FMP. For further information on the potential impacts of the fishery and the proposed management action on marine mammals, see section 5.1.2 of this document.

7.5 Coastal Zone Management Act (CZMA)

Section 307(c)(1) of the Federal CZMA of 1972 requires that all Federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. Pursuant to Section 930.36(c) of the regulations implementing the CZMA, NMFS made a general consistency determination that the NE Multispecies FMP, including Amendment 16, and FWs 44, 45, and 46, are consistent to the maximum extent practicable with the enforceable policies of the approved coastal management program of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. This general consistency determination applies to the current NE Multispecies FMP, and all subsequent routine Federal actions carried out in accordance with the FMP such as FWs and specifications. A general consistency determination is warranted because FWs to the FMP and catch specifications are repeated activities that adjust the use of management tools previously implemented in the FMP. A general consistency determination avoids the necessity of issuing separate consistency determinations for each incremental action. This determination was submitted to the above states on October 21, 2009. The states of North Carolina, Rhode Island, Virginia, Connecticut, New Hampshire, and Pennsylvania have concurred with the general consistency determination; concurrence by all other states was inferred.

7.6 Administrative Procedure Act (APA)

Section 553 of the APA establishes procedural requirements applicable to informal rulemaking by Federal agencies. The purpose of these requirements is to ensure public access to

the Federal rulemaking process, and to give the public adequate notice and opportunity for comment. The Assistant Administrator for Fisheries, NOAA, finds it impracticable and contrary to the public interest to provide for prior notice and opportunity for the public to comment, or to delay for 30 days the effective date of this emergency regulation, under the provisions of section 553(b) and (d) of the Administrative Procedure Act. As more fully explained above, the reasons justifying promulgation of this rule on an emergency basis make solicitation of public comment or a delay in effectiveness contrary to the public interest. This action would result in the benefit of the revenues associated with larger GOM winter flounder catch limits. This action could not allow for prior public comment because the scientific review process and determination could not have been completed any earlier due to the inherent time constraints associated with such process.

If this rulemaking was delayed to allow for notice and comment and a 30-day delay in effectiveness, the current quota for some sectors could be exceeded, which could result in triggering restrictive and economically harmful management actions that otherwise could have been avoided. The time necessary to provide for prior notice, opportunity for public comment, and delayed effectiveness for this action could severely curtail fishing operations if the current ACL is reached prior to implementation of the increased catch limit. In the interest of receiving public input on this action, the revised assessment upon which this action was based is made available to the public, and this action requests public comments on that document and the provisions in this rule.

7.7 Data Quality Act (DQA)

Pursuant to NOAA guidelines implementing section 515 of Public Law 106-554 (the Data Quality Act), all information products released to the public must first undergo a Pre-Dissemination Review to ensure and maximize the quality, objectivity, utility, and integrity of the information (including statistical information) disseminated by or for Federal agencies. The following section addresses these requirements.

Utility of Information Product

The final rule specifies revised status determination criteria and FY 2011 catch limits for GOM winter flounder. The environmental assessment (EA) and Federal Register notice for this action describe the revised catch limits, the reasons for why the revised limits are necessary, and the biological, economic, and social impacts of those measures. The information contained in the EA is useful to understand the rationale for the proposed action as well as the potential impacts of the measures. The Federal Register notice provides a summary of the information in the EA to inform interested public of the scope and purpose of the action. The final action is consistent with the FMP and the conservation and management goals of the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

The intended users of the information product are participants of the NE multispecies fishery, industry members and other interested members of the public, members of the New England Fishery Management Council (Council), and the National Marine Fisheries Service (NMFS). The information provided in the EA was based on the most recent available information from the relevant data sources. The revisions to the Status Determination Criteria

and catch limits align the current measures with the best available scientific information. The development of this document and the decisions made by NMFS to implement this action are based on the stock assessment process. The development of the EA and the decisions of NMFS in implementing this action were the result of a multi-stage process, and the information pertaining to the catch limits was improved based on comments from NOAA Fisheries Service personnel.

The EA will be available in several formats, included printed publication CD-ROM, and in PDF format online through www.regulations.gov and the Northeast Regional Office webpage. The Federal Register notice that announces the final rule implementing and specifying catch levels will be made available as a printed publication, and on the www.regulations.gov and Northeast Regional Office website. The Federal Register documents will provide metric conversions for all units of measurement.

Integrity of Information Product

Prior to dissemination, information associated with this action, independent of the specific intended distribution mechanism, is safeguarded from improper access, modification, or destruction, to a degree commensurate with the risk and magnitude of harm that could result from the loss, misuse, or unauthorized access to or modification of such information. All electronic information disseminated by NOAA Fisheries Service adheres to the standards set out in Appendix III, "Security of Automated Information Resources," of OMB Circular A-130; the Computer Security Act; and the Government Information Security Act. All confidential information (e.g., dealer purchase reports) is safeguarded pursuant to the Privacy Act; Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business, and financial information); the Confidentiality of Statistics provisions of the Magnuson-Stevens Act; and NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics.

Objectivity of Information Product

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). National Marine Fisheries Service (NMFS) has determined that the final rule to implement the revised FY 2011 GOM winter flounder specifications is consistent with the National Standards of the MSA and all other applicable laws.

This information product uses information of known quality from sources acceptable to the relevant scientific and technical communities. Stock status (including estimates of biomass and fishing mortality) reported in this product are based on a stock assessment prepared by scientists of the Northeast Fishery Science Center. The GOM winter flounder stock assessment was completed through a multi-step process and peer reviewed by the Stock Asssessment Review Committee (SARC 52). Information in the EA, including landings and revenue information, is based upon information collected through the Vessel Trip Report and Commercial Dealer databases. NMFS, in conjunction with the commercial fishery, operates multiple data collection programs (e.g., vessel trip reports, commercial dealer databases, NMFS

Observer Program, At-Sea Monitoring). These programs incorporate peer-reviewed, scientifically valid sampling protocols. Additional information is presented in the EA that has been accepted and published in peer-reviewed journals or by scientific organizations. Original analyses in the EA were prepared using data from accepted sources. Summary information in the emergency rule is based upon information in the EA.

The conservation and management measures proposed for this action were selected based upon the best scientific information available. The information is consistent with the principles for evaluating best scientific information available, as proposed in National Standard 2 Guidelines (74 FR 65724; December 11, 2009): Relevance, inclusiveness, objectivity, transparency, timeliness, verification, validation, and peer review. Specialists who worked with these data are familiar with the most current analytical techniques and with the available data and information relevant to the groundfish fishery.

The policy decisions (i.e., catch limit specifications) specified in the emergency action are supported by the best scientific information available. The catch limit specifications are designed to meet the goals of the FMP and comply with the revised MSA. The catch limit specifications are based on the methodology implemented by Amendment 16, but were revised to reflect the more recent stock assessment information (SARC 52). The supporting materials and analyses used to develop these measures are contained in the EA and the appendices to the EA. The policy choices are clearly articulated in the EA document as are the management alternatives considered in this action. The supporting science and analyses, upon which the policy choices are based, are summarized and described in the EA. All supporting materials, information, data, and analyses within the EA have been, to the maximum extent practicable, properly referenced according to commonly accepted standards for scientific literature to ensure transparency.

The development of the Secretarial Emergency Action involves the NMFS Northeast Fisheries Science Center (Center) and the Northeast Regional Office. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment models, demersal resources, population biology, and 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 review and and approval of the emergency action and clearance of the rule is conducted by staff at NMFS Headquarters, and the Department of Commerce.

The process used in review of the operations plans, EA, and proposed rule involves NMFS' Northeast Regional Office, NMFS' Northeast Fisheries Science Center (NEFSC), and headquarters. The NEFSC review was conducted by social scientists and economists. Through the proposed and final rule process, the public and the New England Fishery Management Council will have an opportunity to comment on any aspect of the proposed operations plans and EA. The review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, law enforcement, protected species, and compliance with the applicable laws. Final approval of the action will be by the Regional Administrator, Northeast Region.

7.8 Executive Order 13132 (Federalism)

This Executive Order (E.O.) established nine fundamental federalism principles for Federal agencies to follow when developing and implementing actions with federalism implications. The E.O. also lists a series of policy making criteria to which Federal agencies must adhere when formulating and implementing policies that have federalism implications. However, no federalism issues or implications have been identified relative to the catch limits specified by this action. This action does not contain policies with federalism implications sufficient to warrant preparation of an assessment under E.O. 13132. The affected states have been closely involved in the development of the proposed management measures through their representation on the Council (all affected states are represented as voting members of at least one Regional Fishery Management Council) and their discussion of similar GOM winter flounder catch limits for FY 2012 as part of the development of FW 47. No comments were received from any state officials relative to any federalism implications that may be associated with this action.

7.9 Executive Order 13158 (Marine Protected Areas)

The E.O. on Marine Protected Areas requires each federal agency whose actions affect the natural or cultural resources that are protected by an MPA to identify such actions, and, to the extent permitted by law and to the maximum extent practicable, in taking such actions, avoid harm to the natural and cultural resources that are protected by an MPA. This E.O. directs federal agencies to refer to the MPAs identified in a list of MPAs that meet the definition of MPA for the purposes of the E.O. The E.O. requires that the Departments of Commerce and the Interior jointly publish and maintain such a list of MPAs. As of the date of submission of this FMP, the list of MPA sites has not been developed by the departments. No further guidance related to this E.O. is available at this time.

7.10 Paperwork Reduction Act (PRA)

The purpose of the PRA is to control and, to the extent possible, minimize the paperwork burden for individuals, small businesses, nonprofit institutions, and other persons resulting from the collection of information by or for the Federal Government. The authority to manage information and recordkeeping requirements is vested with the Director of the Office of Management and Budget (OMB). This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. This action makes no alterations to the existing collection of information requirements implemented by previous amendments to the FMP that are subject to the PRA.

7.11 Regulatory Impact Review

Determination of Economic Significance for E.O. 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, or the principles set forth in the Executive Order.

The proposed action would raise the total commercial ACL for GOM winter flounder from 231 mt to 524 mt for the remainder of FY 2011. The potential economic impacts of this change are discussed in more detail in Section 5.2.2. The following provides a summary of findings. Due to the increased amount of GOM winter flounder catch allowed, the proposed action would represent an increase of potential revenue of nearly $1.2 million, assuming recent average prices for GOM winter flounder and that all available GOM winter flounder would be harvested. Recent landings have been under 250 mt, with FY 2010 landings under 110 mt. This suggests that potential revenues from the change in GOM winter flounder ACL, as estimated in this EA, may be overestimated. However, the economic benefit of the proposed action may be greater than the value of any additional GOM winter flounder made available to the fishery, since this stock is a component of a mixed species fishery subject to a catch limit on each species in the complex. This means that catch limits imposed on one species may constrain the ability to obtain higher economic yield from others. Because of these interactions, the magnitude of the economic benefit of the change in the GOM winter flounder ACL to the groundfish fishery as a whole is uncertain. Due to the qualification criteria used to establish initial potential sector contributions, allocations of sector ACE may not reflect current or desired fishing practices. For example, even with an increase of 163 mt (nearly 360,000 pounds) two sectors would still be left with less GOM winter flounder ACE than the collective sector membership landed during FY 2009. These differences may be offset by the ability to obtain additional GOM winter flounder quota either through an in intra-company, intra-sector, or inter-sector transfer. Given these available transfer options, the proposed action ACL would be sufficient to enable sectors and sector members to obtain at least as much GOM winter flounder needed to sustain recent landings through the end of FY 2011. There are currently no available mechanisms for the common pool to acquire additional sub-ACL from sectors, so such vessels would be restricted by the allocated sub-ACL for FY 2011. However, because recent catch of GOM winter flounder has not exceeded the ACL, it is not likely that the common pool sub-ACL will limit vessel operations.

The precise overall economic impact of the proposed action is uncertain. The primary economic benefit would be expected to enable higher levels of economic yield in the groundfish fishery as a whole. However since the specification change would be limited to GOM winter flounder, the economic impact is not expected to result in an annual effect on the economy as a whole that exceeds $100 million. Therefore, the proposed action would not be a significant action for purposes of E.O. 12866.

Regulatory Flexibility Act (RFA)

The purpose of the RFA is to reduce the impacts of burdensome regulations and recordkeeping requirements on small businesses. To achieve this goal, the RFA requires Federal agencies to describe and analyze the effects of proposed regulations, and possible alternatives, on small business entities. Because this action does not involve a preparation of a proposed rule (see APA discussion), no RFA analysis has been conducted.

8.0 List of Preparers; Point of Contact

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9.0 Persons and Agencies Consulted

This document was reviewed by staff of the NMFS Northeast Regional Office, NEFSC, and NOAA Office Program Planning and Integration. Staff members of NEFMC, NMFS Northeast Regional Office, and Northeast Fisheries Science Center were also consulted in preparing this EA. No other persons or agencies were consulted.

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11.0 Glossary

Adult stage: One of several marked phases or periods in the development and growth of many animals. In vertebrates, the life history stage where the animal is capable of reproducing, as opposed to the juvenile stage.

Adverse effect: Any impact that reduces quality and/or quantity of EFH. May include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include sites-specific of habitat wide impacts, including individual, cumulative, or synergistic consequences of actions.

Aggregation: A group of animals or plants occurring together in a particular location or region.

Anadromous species: Fish that spawn in fresh or estuarine waters and migrate to ocean waters

Amphipods: A small crustacean of the order Amphipoda, such as the beach flea, having a laterally compressed body with no carapace.

Anaerobic sediment: Sediment characterized by the absence of free oxygen.

Anemones: Any of numerous flowerlike marine coelenterates of the class Anthozoa, having a flexible cylindrical body and tentacles surrounding a central mouth.

Annual Catch Entitlement (ACE): Pounds of available catch that can be harvested by a particular sector. Based on the total PSC for the permits that join the sector.

Annual total mortality: Rate of death expressed as the fraction of a cohort dying over a period compared to the number alive at the beginning of the period (# total deaths during year / numbers alive at the beginning of the year). Optimists convert death rates into annual survival rate using the relationship
S=1-A.

ASPIC (A Surplus Production Model Incorporating Covariates): A non-equilibrium surplus production model developed by Prager (1995). ASPIC was frequently used by the Overfishing

Definition Panel to define B_{MSY} and F_{MSY} reference points. The model output was also used to estimate rebuilding timeframes for the Amendment 9 control rules.

Bay: An inlet of the sea or other body of water usually smaller than a gulf; a small body of water set off from the main body; e.g. Ipswich Bay in the Gulf of Maine.

Benthic community: *Benthic* means the bottom habitat of the ocean, and can mean anything as shallow as a salt marsh or the intertidal zone, to areas of the bottom that are several miles deep in the ocean. *Benthic community* refers to those organisms that live in and on the bottom. (*In* meaning they live within the substrate; e.g, within the sand or mud found on the bottom. See *Benthic infauna*, below)

Benthic infauna: See *Benthic community*, above. Those organisms that live *in* the bottom sediments (sand, mud, gravel, etc.) of the ocean. As opposed to *benthic epifauna*, that live *on* the surface of the bottom sediments.

Benthivore: Usually refers to fish that feed on benthic or bottom dwelling organisms.

Berm: A narrow ledge typically at the top or bottom of a slope; e.g. a berm paralleling the shoreline caused by wave action on a sloping beach; also an elongated mound or wall of earth.

Biogenic habitats: Ocean habitats whose physical structure is created or produced by the animals themselves; e.g, coral reefs.

Biomass: The total mass of living matter in a given unit area or the weight of a fish stock or portion thereof. Biomass can be listed for beginning of year (Jan-1), Mid-Year, or mean (average during the entire year). In addition, biomass can be listed by age group (numbers at age * average weight at age) or summarized by groupings (e.g., age 1^+, ages 4+ 5, etc). See also spawning stock biomass, exploitable biomass, and mean biomass.

B_{MSY}: The stock biomass that would produce MSY when fished at a fishing mortality rate equal to F_{MSY}. For most stocks, B_{MSY} is about ½ of the carrying capacity. The proposed overfishing definition control rules call for action when biomass is below ¼ or ½ B_{MSY}, depending on the species.

$B_{threshold}$: 1) A limit reference point for biomass that defines an unacceptably low biomass i.e., puts a stock at high risk (recruitment failure, depensation, collapse, reduced long term yields, etc). 2) A biomass threshold that the SFA requires for defining when a stock is overfished. A stock is overfished if its biomass is below $B_{threshold}$. A determination of overfished triggers the SFA requirement for a rebuilding plan to achieve B_{target} as soon as possible, usually not to exceed 10 years except certain requirements are met. In Amendment 9 control rules, $B_{threshold}$ is often defined as either $1/2B_{MSY}$ or $1/4\ B_{MSY}$. $B_{threshold}$ is also known as $B_{minimum}$.

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

Biomass weighted F: A measure of fishing mortality that is defined as an average of fishing mortality at age weighted by biomass at age for a ranges of ages within the stock (e.g., ages 1^+ biomass weighted F is a weighted average of the mortality for ages 1 and older, age 3^+ biomass weighted is a weighted average for ages 3 and older). Biomass weighted F can also be calculated using catch in weight over mean biomass. See also fully-recruited F.

Biota: All the plant and animal life of a particular region.

Bivalve: A class of mollusks having a soft body with plate-like gills enclosed within two shells hinged together; e.g., clams, mussels.

Bottom roughness: The inequalities, ridges, or projections on the surface of the seabed that are caused by the presence of bedforms, sedimentary structures, sedimentary particles, excavations, attached and unattached organisms, or other objects; generally small scale features.

Bottom tending mobile gear: All fishing gear that operates on or near the ocean bottom that is actively worked in order to capture fish or other marine species. Some examples of bottom tending mobile gear are otter trawls and dredges.

Bottom tending static gear: All fishing gear that operates on or near the ocean bottom that I snot actively worked; instead, the effectiveness of this gear depends on species moving to the gear which is set in a particular manner by a vessel, and later retrieved. Some examples of bottom tending static gear are gillnets, traps, and pots.

Boulder reef: An elongated feature (a chain) of rocks (generally piled boulders) on the seabed.

Bryozoans: Phylum aquatic organisms, living for the most part in colonies of interconnected individuals. A few to many millions of these individuals may form one colony. Some bryozoans encrust rocky surfaces, shells, or algae others form lacy or fan-like colonies that in some regions may form an abundant component of limestones. Bryozoan colonies range from millimeters to meters in size, but the individuals that make up the colonies are rarely larger than a millimeter. Colonies may be mistaken for hydroids, corals or seaweed.

Burrow: A hole or excavation in the sea floor made by an animal (as a crab, lobster, fish, burrowing anemone) for shelter and habitation.

Bycatch: (v.) The capture of nontarget species in directed fisheries which occurs because fishing gear and methods are not selective enough to catch only target species; (n.) fish which are harvested in a fishery but are not sold or kept for personal use, including economic discards and regulatory discards but not fish released alive under a recreational catch and release fishery management program.

Capacity: The level of output a fishing fleet is able to produce given specified conditions and constraints. Maximum fishing capacity results when all fishing capital is applied over the maximum amount of available (or permitted) fishing time, assuming that all variable inputs are utilized efficiently.

Catch: The sum total of fish killed in a fishery in a given period. Catch is given in either weight or number of fish and may include landings, unreported landings, discards, and incidental deaths.

Closed Area Model: A General Algebraic Modeling System (GAMS) model used to evaluate the effectiveness of effort controls used in the Northeast Multispecies Fishery. Using catch data from vessels in the fishery, the model estimates changes in exploitation that may result from changes in DAS, closed areas, and possession limits. These changes in exploitation are then converted to changes in fishing mortality to evaluate proposed measures.

Coarse sediment: Sediment generally of the sand and gravel classes; not sediment composed primarily of mud; but the meaning depends on the context, e.g. within the mud class, silt is coarser than clay.

Commensalism: See *Mutualism*. An interactive association of two species where one benefits in some way, while the other species is in no way affected by the association.

Continental shelf waters: The waters overlying the continental shelf, which extends seaward from the shoreline and deepens gradually to the point where the sea floor begins a slightly steeper descent to the deep ocean floor; the depth of the shelf edge varies, but is approximately 200 meters in many regions.

Control rule: A pre-determined method for determining fishing mortality rates based on the relationship of current stock biomass to a biomass target. Amendment 9 overfishing control rules define a target biomass (B_{MSY} or proxy) as a management objective. The biomass threshold ($B_{threshold}$ or B_{min}) defines a minimum biomass below which a stock is considered overfished.

Cohort: See yearclass.

Crustaceans: Invertebrates characterized by a hard outer shell and jointed appendages and bodies. They usually live in water and breathe through gills. Higher forms of this class include lobsters, shrimp and crawfish; lower forms include barnacles.

Days absent: An estimate by port agents of trip length. This data was collected as part of the NMFS weighout system prior to May 1, 1994.

Days-at-sea (DAS): The total days, including steaming time that a boat spends at sea to fish. Amendment 13 categorized DAS for the multispecies fishery into three categories, based on each individual vessel's fishing history during the period fishing year 1996 through 2001. The three categories are: Category A: can be used to target any groundfish stock; Category B: can only be used to target healthy stocks; Category C: cannot be used until some point in the future. Category B DAS are further divided equally into Category B (regular) and Category B (reserve).

DAS "flip": A practice in the Multispecies FMP that occurs when a vessel fishing on a Category B (regular) DAS must change ("flip") its DAS to a Category A DAS because it has exceeded a catch limit for a stock of concern.

Demersal species: Most often refers to fish that live on or near the ocean bottom. They are often called benthic fish, groundfish, or bottom fish.

Diatoms: Small mobile plants (algæ) with silicified (silica, sand, quartz) skeletons. They are among the most abundant phytoplankton in cold waters, and an important part of the food chain.

Discards: Animals returned to sea after being caught; see Bycatch (n.)

Dissolved nutrients: Non-solid nutrients found in a liquid.

Echinoderms: A member of the Phylum Echinodermata. Marine animals usually characterized by a five-fold symmetry, and possessing an internal skeleton of calcite plates, and a complex water vascular system. Includes echinoids (sea urchins), crinoids (sea lillies) and asteroids (starfish).

Ecosystem-based management: A management approach that takes major ecosystem components and services—both structural and functional—into account, often with a multispecies or habitat perspective

Egg stage: One of several marked phases or periods in the development and growth of many animals. The life history stage of an animal that occurs after reproduction and refers to the developing embryo, its food store, and sometimes jelly or albumen, all surrounded by an outer shell or membrane. Occurs before the *larval* or *juvenile stage*.

Elasmobranch: Any of numerous fishes of the class Chondrichthyes characterized by a cartilaginous skeleton and placoid scales: sharks; rays; skates.

Embayment: A bay or an indentation in a coastline resembling a bay.

Emergent epifauna: See *Epifauna*. Animals living upon the bottom that extend a certain distance above the surface.

Epifauna: See *Benthic infauna*. *Epifauna* are animals that live on the surface of the substrate, and are often associated with surface structures such as rocks, shells, vegetation, or colonies of other animals.

Essential Fish Habitat (EFH): Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The EFH designation for most managed species in this region is based on a legal text definition and geographical area that are described in the Habitat Omnibus Amendment (1998).

Estuarine area: The area of an estuary and its margins; an area characterized by environments resulting from the mixing of river and sea water.

Estuary: A water passage where the tide meets a river current; especially an arm of the sea at the lower end of a river; characterized by an environment where the mixing of river and seawater causes marked variations in salinity and temperature in a relatively small area.

Eutrophication: A set of physical, chemical, and biological changes brought about when excessive nutrients are released into the water.

Euphotic zone: The zone in the water column where at least 1% of the incident light at the surface penetrates.

Exclusive Economic Zone (EEZ): A zone in which the inner boundary is a line coterminous with the seaward boundary of each of the coastal States and the outer boundary is line 200 miles away and parallel to the inner boundary

Exempt fisheries: Any fishery determined by the Regional Director to have less than 5 percent regulated species as a bycatch (by weight) of total catch according to 50 CFR 648.80(a)(7).

Exploitable biomass: The biomass of fish in the portion of the population that is vulnerable to fishing.

Exploitation pattern: Describes the fishing mortality at age as a proportion of fully recruited F (full vulnerability to the fishery). Ages that are fully vulnerable experience 100% of the fully recruited F and are termed fully recruited. Ages that are only partially vulnerable experience a fraction of the fully recruited F and are termed partially recruited. Ages that are not vulnerable to the fishery (including discards) experience no mortality and are considered pre-recruits. Also known as the partial recruitment pattern, partial recruitment vector or fishery selectivity.

Exploitation rate (u): The fraction of fish in the exploitable population killed during the year by fishing. This is an annual rate compared to F, which is an instantaneous rate. For example, if a population has 1,000,000 fish large enough to be caught and 550,000 are caught (landed and discarded) then the exploitation rate is 55%.

Fathom: A measure of length, containing six feet; the space to which a man can extend his arms; used chiefly in measuring cables, cordage, and the depth of navigable water by soundings.

Fishing mortality (F): A measurement of the rate of removal of fish from a population caused by fishing. This is usually expressed as an instantaneous rate (F) and is the rate at which fish are harvested at any given point in a year. Instantaneous fishing mortality rates can be either fully recruited or biomass weighted. Fishing mortality can also be expressed as an exploitation rate (see exploitation rate) or less commonly, as a conditional rate of fishing mortality (m, fraction of fish removed during the year if no other competing sources of mortality occurred. Lower case m should not be confused with upper case M, the instantaneous rate of natural mortality).

$F_{0.1}$: A conservative fishing mortality rate calculated as the F associated with 10 percent of the slope at origin of the yield-per-recruit curve.

F_{MAX}: A fishing mortality rate that maximizes yield per recruit. F_{MAX} is less conservative than $F_{0.1}$.

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

$F_{threshold}$: 1) The maximum fishing mortality rate allowed on a stock and used to define overfishing for status determination. Amendment 9 frequently uses F_{MSY} or F_{MSY} proxy for $F_{threshold}$. 2) The maximum fishing mortality rate allowed for a given biomass as defined by a control rule.

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

Framework adjustments: Adjustments within a range of measures previously specified in a fishery management plan (FMP). A change usually can be made more quickly and easily by a framework adjustment than through an amendment. For plans developed by the New England Council, the procedure requires at least two Council meetings including at least one public hearing and an evaluation of environmental impacts not already analyzed as part of the FMP.

Furrow: A trench in the earth made by a plow; something that resembles the track of a plow, as a marked narrow depression; a groove with raised edges.

Glacial moraine: A sedimentary feature deposited from glacial ice; characteristically composed of unsorted clay, sand, and gravel. Moraines typically are hummocky or ridge-shaped and are located along the sides and at the fronts of glaciers.

Glacial till: Unsorted sediment (clay, sand, and gravel mixtures) deposited from glacial ice.

Grain size: The size of individual sediment particles that form a sediment deposit; particles are separated into size classes (e.g. very fine sand, fine sand, medium sand, among others); the classes are combined into broader categories of mud, sand, and gravel; a sediment deposit can be composed of few to many different grain sizes.

Growth overfishing: Fishing at an exploitation rate or at an age at entry that reduces potential yields from a cohort but does not reduce reproductive output (see recruitment overfishing).

Halocline: The zone of the ocean in which salinity increases rapidly with depth.

Habitat complexity: Describes or measures a habitat in terms of the variability of its characteristics and its functions, which can be biological, geological, or physical in nature. Refers to how complex the physical structure of the habitat is. A bottom habitat with *structure-forming organisms*, along with other three dimensional objects such as boulders, is more complex than a flat, featureless, bottom.

Highly migratory species: Tuna species, marlin, oceanic sharks, sailfishes, and swordfish

Hydroids: Generally, animals of the Phylum Cnidaria, Class Hydrozoa; most hydroids are bush-like polyps growing on the bottom and feed on plankton, they reproduce asexually and sexually.

Immobile epifaunal species: See *epifauna*. Animals living on the surface of the bottom substrate that, for the most part, remain in one place.

Individual Fishing Quota (IFQ): Federal permit under a limited access system to harvest a quantity of fish, expressed by a unit or units representing a percentage of the total allowable catch of a fishery that may be received or held for exclusive use by an individual person or entity

Juvenile stage: One of several marked phases or periods in the development and growth of many animals. The life history stage of an animal that comes between the *egg* or *larval stage* and the *adult stage*; juveniles are considered immature in the sense that they are not yet capable of reproducing, yet they differ from the larval stage because they look like smaller versions of the adults.

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

Land runoff: The part of precipitation, snowmelt, or irrigation water that reaches streams (and thence the sea) by flowing over the ground, or the portion of rain or snow that does not percolate into the ground and is discharged into streams instead.

Larvae stage: One of several marked phases or periods in the development and growth of many animals. The first stage of development after hatching from the *egg* for many fish and invertebrates. This life stage looks fundamentally different than the juvenile and adult stages, and is incapable of reproduction; it must undergo metamorphosis into the juvenile or adult shape or form.

Lethrinids: Fish of the genus *Lethrinus*, commonly called emperors or nor'west snapper, are found mainly in Australia's northern tropical waters. Distinctive features of Lethrinids include thick lips, robust canine teeth at the front of the jaws, molar-like teeth at the side of the jaws and cheeks without scales. Lethrinids are carnivorous bottom-feeding fish with large, strong jaws.

Limited-access permits: Permits issued to vessels that met certain qualification criteria by a specified date (the "control date").

Lutjanids: Fish of the genus of the Lutjanidae: snappers. Marine; rarely estuarine. Some species do enter freshwater for feeding. Tropical and subtropical: Atlantic, Indian and Pacific Oceans.

Macrobenthos: See *Benthic community* and *Benthic infauna*. Benthic organisms whose shortest dimension is greater than or equal to 0.5 mm.

Maturity ogive: A mathematical model used to describe the proportion mature at age for the entire population. A_{50} is the age where 50% of the fish are mature.

Mean biomass: The average number of fish within an age group alive during a year multiplied by average weight at age of that age group. The average number of fish during the year is a function of starting stock size and mortality rate occurring during the year. Mean biomass can be aggregated over several ages to describe mean biomass for the stock. For example the mean biomass summed for ages 1 and over is the 1^+ mean biomass; mean biomass summed across ages 3 and over is 3^+ mean biomass.

Megafaunal species: The component of the fauna of a region that comprises the larger animals, sometimes defined as those weighing more than 100 pounds.

Mesh selectivity ogive: A mathematical model used to describe the selectivity of a mesh size (proportion of fish at a specific length retained by mesh) for the entire population. L_{25} is the length where 25% of the fish encountered are retained by the mesh. L_{50} is the length where 50% of the fish encountered are retained by the mesh.

Meter: A measure of length, equal to 39.37 English inches, the standard of linear measure in the metric system of weights and measures. It was intended to be, and is very nearly, the ten millionth part of the distance from the equator to the North Pole, as ascertained by actual measurement of an arc of a meridian.

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

Microalgal: Small microscopic types of algae such as the green algae.

Microbial: Microbial means of or relating to microorganisms.

Minimum spawning stock threshold: The minimum spawning stock size (or biomass) below which there is a significantly lower chance that the stock will produce enough new fish to sustain itself over the long term.

Mobile organisms: Organisms that are not confined or attached to one area or place, that can move on their own, are capable of movement, or are moved (often passively) by the action of the physical environment (waves, currents, etc.).

Molluscs: Common term for animals of the phylum Mollusca. Includes groups such as the bivalves (mussels, oysters etc.), cephalopods (squid, octopus etc.) and gastropods (abalone, snails). Over 80,000 species in total with fossils back to the Cambrian period.

Mortality: See Annual total mortality (A), Exploitation rate (u), Fishing mortality (F), Natural mortality (M), and instantaneous total mortality (Z).

Motile: Capable of self-propelled movement. A term that is sometimes used to distinguish between certain types of organisms found in water.

Multispecies: The group of species managed under the Northeast Multispecies Fishery Management Plan. This group includes whiting, red hake and ocean pout plus the regulated species (Atlantic cod, haddock, pollock, yellowtail flounder, winter flounder, witch flounder, American plaice, windowpane flounder, white hake, redfish, Atlantic halibut, and Atlantic wolffish).

Mutualism: See *Commensalism*. A symbiotic interaction between two species in which both derive some benefit.

Natural disturbance: A change caused by natural processes; e.g. in the case of the seabed, changes can be caused by the removal or deposition of sediment by currents; such natural processes can be common or rare at a particular site.

Natural mortality: A measurement of the rate of death from all causes other than fishing such as predation, disease, starvation, and pollution. Commonly expressed as an instantaneous rate (M). The rate of natural mortality varies from species to species, but is assumed to be M=0.2 for the five critical stocks. The natural mortality rate can also be expressed as a conditional rate (termed n and not additive with competing sources of mortality such as fishing) or as annual expectation of natural death (termed v and additive with other annual expectations of death).

Nearshore area: The area extending outward an indefinite but usually short distance from shore; an area commonly affected by tides and tidal and storm currents, and shoreline processes.

Nematodes: A group of elongated, cylindrical worms belonging to the phylum Nematoidea, also called thread-worms or eel-worms. Some non-marine species attack roots or leaves of plants, others are parasites on animals or insects.

Nemerteans: Proboscis worms belonging to the phylum Nemertea, and are soft unsegmented marine worms that have a threadlike proboscis and the ability to stretch and contract.

Nemipterids: Fishes of the Family Nemipteridae, the threadfin breams or whiptail breams. Distribution: Tropical and sub-tropical Indo-West Pacific.

Northeast Shelf Ecosystem: The Northeast U.S. Shelf Ecosystem has been described as including the area from the Gulf of Maine south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream.

Northwest Atlantic Analysis Area (NAAA): A spatial area developed for analysis purposes only. The boundaries of this the area are within the 500 fathom line to the east, the coastline to the west, the Hague line to the north, and the North Carolina/ South Carolina border to the south. The area is approximately 83,550 square nautical miles, and is used as the denominator in the EFH analysis to determine the percent of sediment, EFH, and biomass contained in an area, as compared to the total NAAA.

Nutrient budgets: An accounting of nutrient inputs to and production by a defined ecosystem (e.g., salt marsh, estuary) versus utilization within and export from the ecosystem.

Observer: Any person required or authorized to be carried on a vessel for conservation and management purposes by regulations or permits under this Act

Oligochaetes: See *Polychaetes*. Oligochaetes are worms in the phylum Annelida having bristles borne singly along the length of the body.

Open access: Describes a fishery or permit for which there is no qualification criteria to participate. Open-access permits may be issued with restrictions on fishing (for example, the type of gear that may be used or the amount of fish that may be caught).

Opportunistic species: Species that colonize disturbed or polluted sediments. These species are often small, grow rapidly, have short life spans, and produce many offspring.

Optimum Yield (OY): The amount of fish which A) will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems; B) is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor; and C) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery

Organic matter: Material of, relating to, or derived from living organisms.

Overfished: A conditioned defined when stock biomass is below minimum biomass threshold and the probability of successful spawning production is low.

Overfishing: A level or rate of fishing mortality that jeopardizes the long-term capacity of a stock or stock complex to produce MSY on a continuing basis.

Peat bank: A bank feature composed of partially carbonized, decomposed vegetable tissue formed by partial decomposition of various plants in water; may occur along shorelines.

Pelagic gear: Mobile or static fishing gear that is not fixed, and is used within the water column, not on the ocean bottom. Some examples are mid-water trawls and pelagic longlines.

Phytoplankton: Microscopic marine plants (mostly algae and diatoms) which are responsible for most of the photosynthetic activity in the oceans.

Piscivore: A species feeding preferably on fish.

Planktivore: An animal that feeds on plankton.

Polychaetes: Polychaetes are segmented worms in the phylum Annelida. Polychaetes (poly-chaetae = many-setae) differ from other annelids in having many setae (small bristles held in tight bundles) on each segment.

Porosity: The amount of free space in a volume of a material; e.g. the space that is filled by water between sediment particles in a cubic centimeter of seabed sediment.

Possession-limit-only permit: An open-access permit (see above) that restricts the amount of multispecies a vessel may retain (currently 500 pounds of "regulated species").

Potential Sector Contribution (PSC): The percentage of the available catch a limited access permit is entitled to after joining a sector. Based on landings history as defined in Amendment 16. The sum of the PSC's in a sector is multiplied by the groundfish sub-ACL to get the ACE for the sector.

Pre-recruits: Fish in size or age groups that are not vulnerable to the fishery (including discards).

Prey availability: The availability or accessibility of prey (food) to a predator. Important for growth and survival.

Primary production: The synthesis of organic materials from inorganic substances by photosynthesis.

Recovery time: The period of time required for something (e.g. a habitat) to achieve its former state after being disturbed.

Recruitment: The amount of fish added to the fishery each year due to growth and/or migration into the fishing area. For example, the number of fish that grow to become vulnerable to fishing gear in one year would be the recruitment to the fishery. "Recruitment" also refers to new year classes entering the population (prior to recruiting to the fishery).

Recruitment overfishing: Fishing at an exploitation rate that reduces the population biomass to a point where recruitment is substantially reduced.

Regulated groundfish species: Atlantic cod, haddock, pollock, yellowtail flounder, winter flounder, witch flounder, American plaice, windowpane flounder, white hake, redfish, Atlantic halibut, and Atlantic wolffish. These species are usually targeted with large-mesh net gear.

Relative exploitation: An index of exploitation derived by dividing landings by trawl survey biomass. This measure does not provide an absolute magnitude of exploitation but allows for general statements about trends in exploitation.

Retrospective pattern: A pattern of systematic over-estimation or underestimation of terminal year estimates of stock size, biomass or fishing mortality compared to that estimate for that same year when it occurs in pre-terminal years.

Riverine area: The area of a river and its banks.

Saurids: Fish of the family Scomberesocidae, the sauries or needlefishes. Distribution: tropical and temperate waters.

Scavenging species: An animal that consumes dead organic material.

Sea whips: A coral that forms long flexible structures with few or no branches and is common on Atlantic reefs.

Sea pens: An animal related to corals and sea anemones with a featherlike form.

Sediment: Material deposited by water, wind, or glaciers.

Sediment suspension: The process by which sediments are suspended in water as a result of disturbance.

Sedentary: See *Motile* and *Mobile organisms*. Not moving. Organisms that spend the majority of their lives in one place.

Sedimentary bedforms: Wave-like structures of sediment characterized by crests and troughs that are formed on the seabed or land surface by the erosion, transport, and deposition of particles by water and wind currents; e.g. ripples, dunes.

Sedimentary structures: Structures of sediment formed on the seabed or land surface by the erosion, transport, and deposition of particles by water and wind currents; e.g. ripples, dunes, buildups around boulders, among others.

Sediment types: Major combinations of sediment grain sizes that form a sediment deposit, e.g. mud, sand, gravel, sandy gravel, muddy sand, among others.

Spawning adult stage: See *adult stage*. Adults that are currently producing or depositing eggs.

Spawning stock biomass (SSB): The total weight of fish in a stock that sexually mature, i.e., are old enough to reproduce.

Species assemblage: Several species occurring together in a particular location or region

Species composition: A term relating the relative abundance of one species to another using a common measurement; the proportion (percentage) of various species in relation to the total on a given area.

Species diversity: The number of different species in an area and their relative abundance

Species richness: See *Species diversity*. A measurement or expression of the number of species present in an area; the more species present, the higher the degree of species richness.

Species with vulnerable EFH: If a species was determined to be "highly" or "moderately" vulnerable to bottom tending gears (otter trawls, scallop dredges, or clam dredges) then it was included in the list of species with vulnerable EFH. Currently there are 23 species and life stages that are considered to have vulnerable EFH for this analysis.

Status Determination: A determination of stock status relative to $B_{threshold}$ (defines overfished) and $F_{threshold}$ (defines overfishing). A determination of either overfished or overfishing triggers a SFA requirement for rebuilding plan (overfished), ending overfishing (overfishing) or both.

Stock: A grouping of fish usually based on genetic relationship, geographic distribution and movement patterns. A region may have more than one stock of a species (for example, Gulf of Maine cod and GB cod). A species, subspecies, geographical grouping, or other category of fish capable of management as a unit.

Stock assessment: Determining the number (abundance/biomass) and status (life-history characteristics, including age distribution, natural mortality rate, age at maturity, fecundity as a function of age) of individuals in a stock

Stock of concern: A regulated groundfish stock that is overfished, or subject to overfishing.

Structure-forming organisms: Organisms, such as corals, colonial bryozoans, hydroids, sponges, mussel beds, oyster beds, and seagrass that by their presence create a three-dimensional physical structure on the bottom. See *biogenic habitats*.

Submerged aquatic vegetation: Rooted aquatic vegetation, such as seagrasses, that cannot withstand excessive drying and therefore live with their leaves at or below the water surface in shallow areas of estuaries where light can penetrate to the bottom sediments. SAV provides an important habitat for young fish and other aquatic organisms.

Surficial sediment: Sediment forming the sea floor or land surface; thickness of the surficial layer may vary.

Surplus production: Production of new stock biomass defined by recruitment plus somatic growth minus biomass loss due to natural deaths. The rate of surplus production is directly proportional to stock biomass and its relative distance from the maximum stock size at carrying capacity (K). B_{MSY} is often defined as the biomass that maximizes surplus production rate.

Surplus production models: A family of analytical models used to describe stock dynamics based on catch in weight and CPUE time series (fishery dependent or survey) to construct stock biomass history. These models do not require catch at age information. Model outputs may include stock biomass history, biomass weighted fishing mortality rates, MSY, F_{MSY}, B_{MSY}, K, (maximum population biomass where stock growth and natural deaths are balanced) and r (intrinsic rate of increase).

Survival rate (S): Rate of survival expressed as the fraction of a cohort surviving a period compared to number alive at the beginning of the period (# survivors at the end of the year /

numbers alive at the beginning of the year). Pessimists convert survival rates into annual total mortality rate using the relationship A=1-S.

Survival ratio (R/SSB): An index of the survivability from egg to age-of-recruitment. Declining ratios suggest that the survival rate from egg to age-of-recruitment is declining.

TAC: Total allowable catch. This value is calculated by applying a target fishing mortality rate to exploitable biomass.

Taxa: The plural of taxon. Taxon is a named group or organisms of any rank, such as a particular species, family, or class.

Ten-minute- "squares" of latitude and longitude (TMS): Are a measure of geographic space. The actual size of a ten-minute-square varies depending on where it is on the surface of the earth, but in general each square is approximately 70-80 square nautical miles in this region. This is the spatial area that EFH designations, biomass data, and some of the effort data have been binned into for analysis purposes in various sections of this document.

Topography: The depiction of the shape and elevation of land and sea floor surfaces.

Total Allowable Catch (TAC): The amount (in metric tons) of a stock that is permitted to be caught during a fishing year. In the Multispecies FMP, TACs can either be "hard" (fishing ceases when the TAC is caught) or a "target" (the TAC is merely used as an indicator to monitor effectiveness of management measures, but does not trigger a closure of the fishery).

Total mortality: The rate of mortality from all sources (fishing, natural, pollution) Total mortality can be expressed as an instantaneous rate (called Z and equal to F + M) or Annual rate (called A and calculated as the ratio of total deaths in a year divided by number alive at the beginning of the year)

Trophic guild: Trophic is defined as the feeding level within a system that an organism occupies; e.g., predator, herbivore. A guild is defined as a group of species that exploit the same class of environmental resources in a similar way. The trophic guild is a utilitarian concept covering both structure and organization that exists between the structural categories of trophic groups and species.

Turbidity: Relative water clarity; a measurement of the extent to which light passing through water is reduced due to suspended materials.

Two-bin (displacement) model: A model used to estimate the effects of area closures. This model assumes that effort from the closed areas (first bin) is displaced to the open areas (second bin). The total effort in the system is then applied to the landings-per-unit-effort (LPUE) in open areas to obtain a projected catch. The percent reduction in catch is calculated as a net result.

Vulnerability: In order to evaluate the potential adverse effects of fishing on EFH, the vulnerability of each species EFH was determined. This analysis defines vulnerability as the likelihood that the

functional value of EFH would be adversely affected as a result of fishing with different gear types. A number of criteria were considered in the evaluation of the vulnerability of EFH for each life stage including factors like the function of habitat for shelter, food and/or reproduction.

Yield-per-recruit (YPR): The expected yield (weight) of individual fish calculated for a given fishing mortality rate and exploitation pattern and incorporating the growth characteristics and natural mortality.

Yearclass: Also called cohort. Fish that were spawned in the same year. By convention, the "birth date" is set to January 1st and a fish must experience a summer before turning 1. For example, winter flounder that were spawned in February-April 1997 are all part of the 1997 cohort (or year-class). They would be considered age 0 in 1997, age 1 in 1998, etc. A summer flounder spawned in October 1997 would have its birth date set to the following January 1 and would be considered age 0 in 1998, age 1 in 1999, etc.

Z: Instantaneous rate of total mortality. The components of Z are additive (i.e., Z = F+M)

Zooplankton: See *Phytoplankton*. Small, often microscopic animals that drift in currents. They feed on detritus, phytoplankton, and other zooplankton. They are preyed upon by fish, shellfish, whales, and other zooplankton.

12.0 APPENDIX

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
C.M. "Rip" Cunningham, Jr., *Chairman* | Paul J. Howard, *Executive Director*

November 21, 2011

Ms. Pat Kurkul, Regional Administrator
NOAA/NMFS
55 Great Republic Drive
Gloucester, MA 01930

Dear Pat:

On November 16, 2011, the Council passed the following motion:

> *that the Council request the Regional Administrator utilize her emergency action capabilities to increase the commercial annual catch limit for Gulf of Maine winter flounder considering the recently completed stock assessment.*

The motion **carried** on a show of hands (14/1/2).

Please consider this request to take emergency action to increase the GOM winter flounder ACL for FY 2011. The Council did not vote on the size of the recommended increase. The proposed commercial groundfish Annual Catch Limit for FY 2012 is 715 mt. At the Council meeting one industry representative recommended increasing the amount by two to three times (318 mt – 474 mt). You may want to consider these three values as defining the range for an appropriate increase.

I have attached a brief discussion of the elements necessary to justify an emergency rulemaking. Please contact me if you have any questions.

Sincerely,

C.M. 'Rip' Cunningham, Jr.
Chairman

attachment

#1

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
C.M. "Rip" Cunningham, *Acting Chairman* | Paul J. Howard, *Executive Director*

To: Paul J. Howard, Executive Director
From: Scientific and Statistical Committee
Date: DRAFT

Subject: **Northeast Multispecies Acceptable Biological Catches for Fishing Years 2012-2014**

The Scientific and Statistical Committee (SSC) was asked to recommend Acceptable Biological Catch (ABC) for Northeast Multispecies stocks for fishing years 2012-2014.

a) For the 12 analytical assessment stocks that have not been assessed since GARM III, provide an ABC for FY 2012 only. These stocks are GOM cod, GB cod, GOM haddock, GB haddock, CC/GOM yellowtail flounder, SNE/MA yellowtail flounder, witch flounder, American plaice, white hake, Acadian redfish, Atlantic halibut, and Atlantic wolffish.
b) For the 3 index assessment stocks that have not been assessed since GARM III, provide an ABC for FY 2012-2014. These stocks are northern windowpane flounder, southern windowpane flounder, and ocean pout.
c) For the 4 stocks that have been assessed since GARM III through the SARC process, provide an ABC for FY 2012-2014. These stocks are GB winter flounder, SNE/MA winter flounder, GOM winter flounder, and pollock. Note that pollock ABC have already been set and do not need to be updated.
d) For GB yellowtail flounder stock that has been assessed since GARM III through the TRAC process, provide an ABC for FY 2012-2014 for the two alternative rebuilding strategies under consideration by the Council.

In order to meet this term of reference, the SSC met September 14, 2011 in Providence, RI and considered the following:

1. Groundfish Plan Development Team (PDT) Northeast Multispecies ABC recommendations for FY 2012-2014 memo dated September 2, 2011
2. Northeast Fisheries Science Center. 2008. Assessment of 19 Northeast Groundfish Stocks through 2007: Report of the 3rd Groundfish Assessment Review Meeting (GARM III), Northeast Fisheries Science Center, Woods Hole, Massachusetts, August 4-8, 2008. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 08-15.
3. Transboundary Resource Assessment Committee (TRAC). Eastern Georges Bank Cod Status Report. TSR 2011/02.
4. Transboundary Resource Assessment Committee (TRAC). Georges Bank Yellowtail Flounder Status Report. TSR 2011/01.
5. Transboundary Resource Assessment Committee (TRAC). Georges Bank Yellowtail Flounder 2011 Assessment reference document. Advance copy.
6. Northeast Fisheries Science Center. 2011. 52nd Northeast Regional Stock Assessment Workshop (52nd SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 11-11.

7. Northeast Fisheries Science Center. 2011. 52nd Northeast Regional Stock Assessment Workshop (52nd SAW) Assessment Report. Advance copy.
8. Northeast Fisheries Science Center. 2011. 52nd Northeast Regional Stock Assessment Workshop (52nd SAW) Assessment Review Committee Summary Report and individual reviewers reports.
9. Presentations by Groundfish Plan Development Team members Tom Nies and Paul Nitscke.

The groundfish plan development team (PDT) recommended Overfishing Limit (OFL) and ABC for the 19 Northeast Multispecies stocks based on advice provided by the SSC during its August 2011 meeting.

Methods 1 – Stocks last assessed at GARM III with analytical assessment

The twelve stocks with analytical assessments last conducted during GARM III had FY 2012 ABC determined by projections conducted for Framework 44. These projections have been previously reviewed and approved by the SSC and thus were not updated. Given the SSC's apprehension on using medium term projections that do not take account of potential changes in stock dynamics since GARM III (i.e., high uncertainty associated with these projections demonstrated by the augmented PDT), the probability of overfishing and overfished status was not presented. Projection of results from GARM III assessments to 2013-2014 were deemed to be too unreliable for setting ABCs. Thus, no OFL or ABC values are recommended for 2013-2014 for these stocks. Assessments for these stocks will be updated during the winter of 2011/2012, which will provide ABC for FY 2013-2014.

For these 12 stocks, the 2012 OFL was computed as the median catch when the projected population was fished at Fmsy, while the ABC was computed as the median catch when the projected population was fished at either 75%Fmsy or Frebuild, whichever was lower. In lieu of an updated assessment or a strong basis for revising its previous recommendations, the SSC had no basis for altering its previous advice on OFL and ABC values for FY 2012. The only exception was Georges Bank cod, which had the 2012 OFL and ABC set equal to the 2011 values based on the recent results of the TRAC Eastern Georges Bank cod assessment, which indicated poor status of this management unit (see Technical Note below). For all twelve stocks, the SSC agrees with the OFLs and ABCs calculated by the PDT.

Methods 2 – Index-based assessments

The three stocks with index assessments last conducted during GARM III had FY 2012-2014 OFL and ABC determined by the application of relative Fmsy or 75%Fmsy to the recent three year average of the survey index, respectively. This application was more uncertain than in past years due to the change of the survey vessel to the Henry B. Bigelow, which required a calibration factor to convert Bigelow catches to Albatross equivalents. Published and reviewed aggregate biomass calibrations were used to make this conversion. For all three stocks, the SSC agrees with the OFLs and ABCs calculated by the PDT.

Methods 3 – Stocks with recent assessments

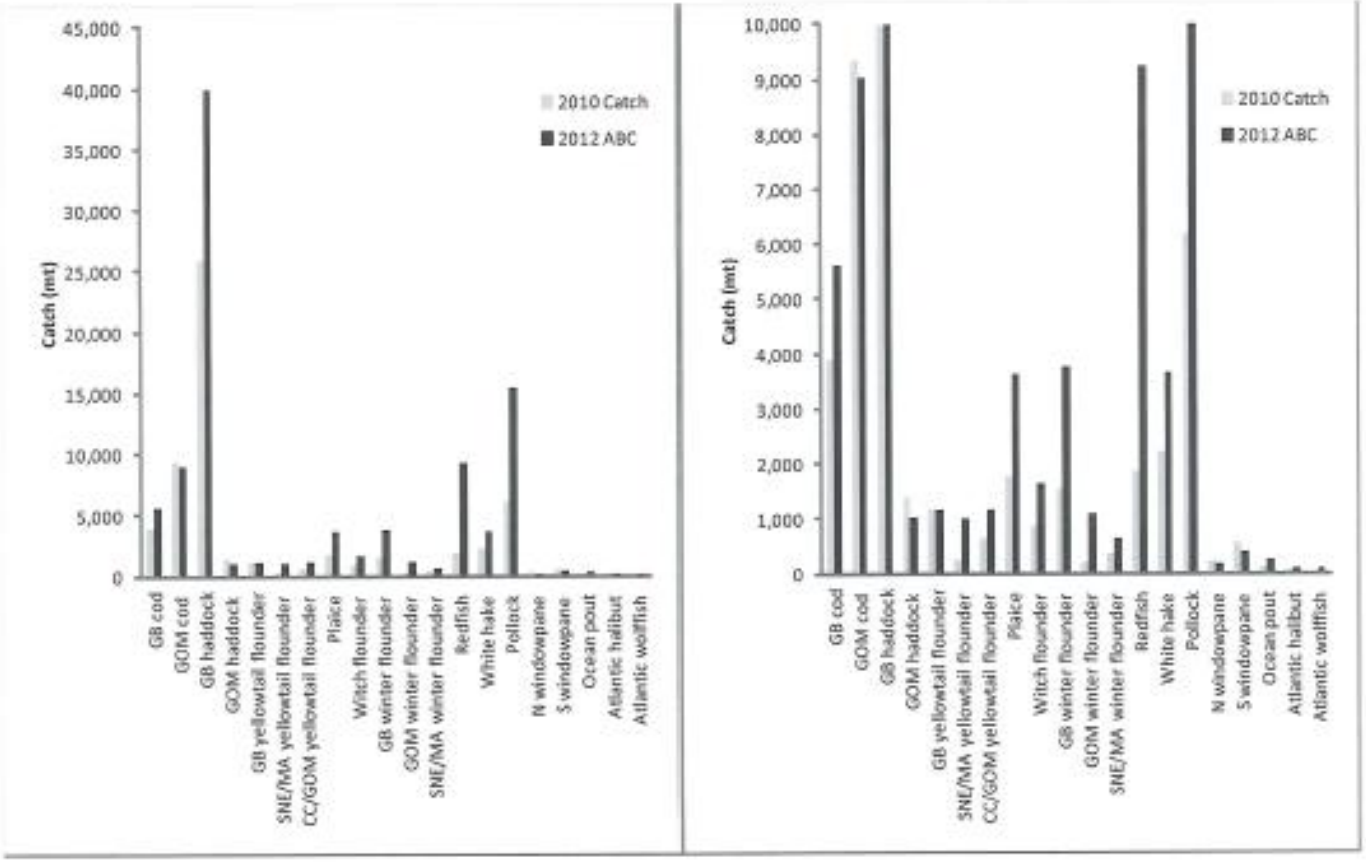
The five stocks which have been assessed since GARM III used standard projection techniques to estimate the OFL and ABC values, except for GOM winter flounder (see Technical Note below). The pollock stock has OFL and ABC values already approved for 2012-2014, the results of which

are presented here for completeness. The SSC agrees with the OFLs and ABCs calculated by the PDT for the three winter flounder stocks, but makes a different recommendation for the Georges Bank yellowtail flounder ABC (see Technical Note below).

Technical Notes

1. Georges Bank cod – The recent stock assessment of Eastern Georges Bank cod, conducted by the Transboundary Resources Assessment Committee (TRAC) in June 2011, indicated poor status of this management unit, with low biomass and recruitment in recent years. Since the Eastern Georges Bank cod management unit is a subset of the Georges Bank stock, this information was deemed sufficient to deviate from the original GARM III projections. The choice was made to maintain the 2011 ABC (5,616 mt) instead of using the 2012 ABC that resulted from the default projections from the GARM III assessment (6,214 mt).
2. Ocean pout – There is a possibility that this stock has undergone a change in productivity due to the continued low survey values despite catches below the ABC in recent years. While it is not certain that the ABC being recommended is sustainable, the no possession limit in effect attempts to reduce bycatch of this stock and increase the probability of stock rebuilding. The SSC urges examination of the causes of this apparent change in productivity, its impact on reference points, and potential management strategies for such situations.
3. Georges Bank yellowtail flounder – The SSC recommendation of 1,150 mt for the 2012 ABC is the midpoint of the range recommended by TRAC (900-1,400 mt). This ABC balances the risk of overfishing and the probability of not causing a decline in stock abundance among the three projection scenarios considered in the TRAC. This ABC is consistent with allowing rebuilding for both rebuilding plans presented by the PDT and it is consistent with the TMGC negotiated catch quota (which should be less than or equal to the ABC recommended by the SSC) of 900 mt. The ABC for 2013 was set equal to the 2012 ABC in recognition of the uncertainty associated with this assessment and the knowledge that an update assessment will be conducted by TRAC in June 2012. Values for the 2014 OFL and ABC were not recommended for the same reason. Concerns on recent recruitment affect both the short-term projections and the rebuilding target (Bmsy), so alternative assumptions of future recruitment would require re-estimation of Bmsy. Therefore the SSC recommends consideration of a revised estimate of Bmsy at the next benchmark assessment to account for lower recruitment in the last 30 years.
4. Gulf of Maine winter flounder – No analytical assessment was accepted for this stock during the SARC review process. Instead, stock biomass was estimated from the minimum swept area survey biomass using an assumed survey catchability coefficient of 0.6, which was derived from the Georges Bank winter flounder assessment. The OFL and ABC were estimated by applying Fmsy or 75%Fmsy, respectively, to the 2010 stock biomass. Similar to the index-based assessments, these OFL and ABC values were maintained for FY 2012-2014. The SSC notes that an alternative calculation using Fmsy which assumes a catchability coefficient of 1.0, and therefore provides a conservative estimate of stock abundance, estimates a similar ABC value to that derived by the PDT. This alternative calculation supports the recommended ABC. The SSC suggests that this stock should be evaluated each year to determine the performance of this non-standard ABC calculation. Given the uncertainties in this assessment method and sensitivity of the estimates with small changes in the assumed gear efficiency, it may be advisable to select a more moderate catch.

The SSC recommends the following Overfishing Limits and Acceptable Biological Catches for the Northeast Multispecies Fishery (OFLs and ABCs include all catch: U.S., Canada, recreational harvest, etc., as calculated in the most recent assessments).

	2010	2012		2013		2014	
Stock	Catch	OFL	ABC	OFL	ABC	OFL	ABC
GB cod	3,903	7,311	5,616	N/A	N/A	N/A	N/A
GOM cod	9,325	11,742	9,018	N/A	N/A	N/A	N/A
GB haddock	25,900	51,150	39,846	N/A	N/A	N/A	N/A
GOM haddock	1,370	1,296	1,013	N/A	N/A	N/A	N/A
GB yellowtail flounder	1,160	1,691	1,150	2,136	1,150	N/A	N/A
SNE/MA yellowtail flounder	242	3,166	1,003	N/A	N/A	N/A	N/A
CC/GOM yellowtail flounder	633	1,508	1,159	N/A	N/A	N/A	N/A
Plaice	1,777	4,727	3,632	N/A	N/A	N/A	N/A
Witch flounder	849	2,141	1,639	N/A	N/A	N/A	N/A
GB winter flounder	1,544	4,839	3,753	4,819	3,750	4,626	3,598
GOM winter flounder	195	1,458	1,078	1,458	1,078	1,458	1,078
SNE/MA winter flounder	363	2,336	626	2,637	697	3,471	912
Redfish	1,852	12,036	9,224	N/A	N/A	N/A	N/A
White hake	2,219	5,306	3,638	N/A	N/A	N/A	N/A
Pollock	6,161	19,887	15,400	20,060	15,600	20,554	16,000
N windowpane	236	230	173	230	173	230	173
S windowpane	564	515	386	515	386	515	386
Ocean pout	127	342	256	342	256	342	256
Atlantic halibut	62	143	85	N/A	N/A	N/A	N/A
Atlantic wolffish	17	92	83	N/A	N/A	N/A	N/A

Catch in 2010 and recommended 2012 ABC for the Northeast Multispecies stocks for comparison (both catches of Georges Bank haddock and the 2012 ABC for pollock extend beyond the y-axis scale of the right panel).