Fishing Year 2011 Northeast Multispecies Sector Operations Plans and Contracts

A Final Environmental Assessment

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TABLE OF CONTENTS

List of Tables

List of Figures

ACRONYMS

ABC	Acceptable Biological Catch
ACE	Annual Catch Entitlement
ACL	Annual Catch Limit
ACT	Annual Catch Target
ALWTRP	Atlantic Large Whale Take Reduction Plan
AM	Accountability Measure
APA	Administrative Procedures Act
ASMFC	Atlantic States Marine Fisheries Commission
BDTRP	Bottlenose Dolphin Take Reduction Plan
B_{MSY}	Biomass necessary to produce maximum sustainable yield
BOF	Bay of Fundy
CEA	Cumulative Effects Assessment
CEQ	Council on Environmental Quality
CeTAP	Cetacean and Turtle Assessment Program
CLF	Conservation Law Foundation
cm	Centimeter
Council	New England Fishery Management Council
CPUE	Catch per unit of effort
CV	Coefficient of variation
CWA	Cape Wind Associates
CY	Calendar year
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DAS	Days-at-sea
DSM	Dockside Monitoring Program
DPS	Distinct population segment
EA	Environmental Assessment
EEZ	Exclusive economic zone
EFH	Essential Fish Habitat

EIS	Environmental Impact Statement
ESA	Endangered Species Act
F	Fishing mortality rate
FGS	Fixed Gear Sector
FMP	Fishery management plan
F_{MSY}	Fishing mortality rate that produces the maximum sustainable yield
FRFA	Final Regulatory Flexibility Analysis
FSEIS	Final Supplemental Environmental Impact Statement
FW	Framework
FY	Fishing year
GARM	Groundfish Assessment Review Meeting
GB	Georges Bank
GFCPF	Gloucester Fishing Community Preservation Fund
GOM	Gulf of Maine
HAPC	Habitat area of particular concern
HPTRP	Harbor Porpoise Take Reduction Plan
ICES	International Council for Exploration of the Sea
IQA	Information Quality Act
kg	Kilogram
km	Kilometer
lbs	Pounds
LNG	Liquefied natural gas
LOF	List of Fisheries
m	Meter
MAFMC	Mid-Atlantic Fishery Management Council
mm	Millimeter
MMPA	Marine Mammal Protection Act
MPBS	Maine Permit Banking Sector
MSY	Maximum Sustainable Yield
mt	Metric ton

NAICS	North American Industry Classification System
NAO	NOAA Administrative Order
NCCS	Northeast Coastal Communities Sector
NEFMC	New England Fishery Management Council
NEFS	Northeast Fishery Sector
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NERO	Northeast Regional Office
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NRC	National Research Council
NREFHSC	Northeast Region Essential Fish Habitat Steering Committee
OLE	Office for Law Enforcement (NMFS)
OMB	Office of Management and Budget
PBR	Potential Biological Removal
PCS	Port Clyde Community Groundfish Sector
PRA	Paperwork Reduction Act
PSC	Potential Sector Contribution
ROD	Record of Decision
RFA	Regulatory Flexibility Act
RFAA	Regulatory Flexibility Act Analysis
RMA	Regulated Mesh Area
SAFE	Stock Assessment and Fishery Evaluation
SAP	Special Access Program
SAR	Stock Assessment Reports
SBRM	Standardized Bycatch Reporting Methodology
SEFSC	NMFS Southeast Fisheries Science Center
SEIS	Supplemental Environmental Impact Statement
SFA	Sustainable Fisheries Act

SHS	Sustainable Harvest Sector
SNE	Southern New England
SNE/MA	Southern New England/Mid-Atlantic
TAC	Total allowable catch
TAL	Total allowable landings
TED	Turtle exclusion device
TEWG	Turtle Expert Working Group
TRAC	Transboundary Resources Assessment Committee
TSS	Tri-State Sector
U.S.	United States
USFWS	United States Fish and Wildlife Service
VEC(s)	Valued Ecosystem Component(s)
VMS	Vessel Monitoring System
VTR	Vessel trip report
WNA	Western North Atlantic

1.0 INTRODUCTION

Sectors authorized by Amendment 16 to the Northeast Multispecies Fishery Management Plan (FMP) that wish to operate in a given fishing year are required to submit an Operations Plan and accompanying National Environmental Policy Act (NEPA) document for review and approval by National Marine Fisheries Service (NMFS,)), on an annual or bi-annual basis. A sector Operations Plan is an enforceable document that details how the sector and its member vessels will operate in a given fishing year, including how the sector will distribute its allocation among members and enforce sector rules. This Environmental Assessment (EA) was prepared in compliance with the sector provisions as described in Amendment 16 to the Northeast Multispecies FMP (75 FR 18262 4/9/2010) and as implemented by the regulations at 50 CFR 648.87. This EA describes the potential impacts of approving sector Operations Plans submitted for fishing year (FY) 2011 on the human, physical, and biological environment, in accordance with the NEPA. The analysis in this EA tiers off the information and analysis contained in the Environmental Impact Statement (EIS) for Amendment 16 to the Northeast Multispecies FMP. The latter document analyzes measures to achieve mortality targets, provide opportunities to target healthy stocks, mitigate the economic impacts of the measures, and improve administration of the fishery, including an analysis of the sector program. As stated in the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of the NEPA (40 CFR 1502.20), "tiering" is encouraged to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review. Due to uncertainties associated with the first year of expanded sector operations, a separate EA (17 total) was prepared for each sector's Operations Plan for FY 2010. However, based upon the general uniformity seen in the FY 2010 Operations Plans and the anticipated continued uniformity, this single EA was prepared to incorporate all 19 sector Operations Plans for FY 2011. This single EA approach was considered more user friendly, and ultimately chosen since each sector can trade Annual Catch Entitlement (ACE), making it difficult to limit the scope of the analysis to one sector's initial ACE allocation. Additionally, this single EA approach was chosen because each sector had the opportunity to request exemptions from Northeast multispecies regulations, which would be considered and analyzed for approval to all sectors.

Nineteen sectors have submitted Operations Plans and requested an allocation of an ACE of 14 stocks of fish managed under the Northeast Multispecies FMP for the 2011 FY. If approved, FY 2011 would be the second consecutive year that over 50 percent (%) of eligible northeast groundfish multispecies permits operate under sector management.

A sector is defined as:

A group of persons (three or more persons, none of whom have an ownership interest in the other two persons in the sector) holding limited access vessel permits who have voluntarily entered into a contract and agree to certain fishing restrictions for a specified period of time, and which has been granted an ACE in order to achieve objectives consistent with applicable FMP goals and objectives. In the formation of a sector, sector participants can select who could participate (NEFMC 2009a).

The analyses in this EA are based upon the sector Operations Plans submitted on September 1, 2010 and the sector rosters submitted on September 10, 2010. A sector roster is a list of limited access Northeast Multispecies permits enrolled in a sector for a given fishing year (i.e. FY 2011) and have signed a contract with the sector. The analyses assume all permits remain in each sector for FY 2011; however, it is possible for permits on the rosters to withdraw from a sector through April 30, 2011. Based on industry request, on October 21, 2010, NMFS extended the opportunity for Northeast Multispecies permit holders to join a sector or change sectors until December 1, 2010. As sector enrollment as of September 10, 2010 represents about 98 percent of the Annual Catch Limit (ACL) for the entire fishery, changes as a result of the roster extension are expected to be minimal and will not require a supplemental

EA. It is also noted that as of the September 10, 2010 roster date utilized for analysis in this EA, the Maine Permit Banking Sector (MPBS) was still undergoing roster development and therefore had not acquired permits. Since that time, in order for the MPBS to meet the definition of a sector (having at least three distinct members), two other entities that hold eligible Northeast multispecies permits have enrolled in the MPBS, in addition to the permits the Permit Bank intends to purchase. A supplemental EA will not be required as the increase in ACE available to sectors in FY 2011 as a result of the addition of permits to the MPBS roster is expected to be minimal due to the limited number of permits acquired and the lease only nature of the sector. To afford permit holders added flexibility to make business decisions related to ownership, NMFS re-opened rosters on a limited basis on March 24, 2011. Permitted vessels, or permits in Confirmation of Permit History, that have changed ownership since December 1, 2010 (the FY 2011 sector roster deadline), could move from the Common Pool to a sector, or from one sector to another until April 30, 2011. Additionally, a permit not on a sector's roster could be permanently combined with a permit on the roster (through the Days-at-Sea [DAS] Transfer Program), which would result in the potential sector contribution (PSC; a percentage) of both permits being combined permanently and attributed to the permit on the roster (see Section 1.2 for a definition of PSC). However, as the regulatory deadline for a DAS Transfer for FY 2011 was March 16, 2011, this would only affect permits for which a DAS transfer has already been initiated. These changes or the removal of permits from the sector rosters will not require a supplemental EA.

1.1 MULTISPECIES FISHERY

In 1986, pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the New England Fishery Management Council (NEFMC or Council) implemented the Northeast Multispecies FMP with the goals of reducing fishing mortality of heavily fished groundfish stocks and promoting rebuilding of those stocks to sustainable biomass levels. Fifteen species of groundfish were originally managed under this plan. With the implementation of Amendment 16 to the Northeast Multispecies FMP, which added Atlantic wolffish, there are thirteen species (twelve of which are large-mesh species) managed together based on fish size and the type of gear used to harvest the fish. The species managed under Amendment 16 to the Northeast Multispecies FMP include: Atlantic cod, haddock, pollock, yellowtail flounder, witch flounder, winter flounder, windowpane flounder, American plaice, Atlantic halibut, redfish, ocean pout, white hake, and Atlantic wolffish. Three other species (silver hake [or whiting], red hake, and offshore hake) are now managed under a separate small-mesh multispecies program pursuant to Amendment 12 of the Northeast Multispecies FMP. Several large-mesh species are managed as two or more separate stocks, based on geographic region. For example, Atlantic cod is managed as two stocks: Georges Bank (GB) cod and Gulf of Maine (GOM) cod. However, other stocks, such as pollock, are managed as a single unit stock across the management area. This large-mesh multispecies fishery is administered with a variety of management tools, including DAS, Closed Areas, trip limits, minimum fish sizes, gear restrictions, and sectors.

1.2 SECTORS AS A MANAGEMENT TOOL

A sector is a group of limited access multispecies permit holders who have voluntarily chosen to cooperate for the purpose of more efficiently harvesting an annual allocation of large-mesh multispecies. Sectors are self-selecting; sector members and the sector's manager determine if fishermen may become members of their respective sectors (NEFMC 2009a). Fishermen who do not join a sector fish in the Common Pool (non-sector fishery) and operate under a set of Common Pool regulations.

Each sector would operate under an ACE, a hard total allowable catch (TAC), for their allocation of stocks to avoid overfishing and to meet the mandates of the Magnuson-Stevens Act and objectives of the Northeast Multispecies FMP. Sectors are required to develop, draft, and submitto NMFS for approval an Operations Plan that describes how the sector would stay within their ACE, by September 1st of each

year. That plan governs the fishing behavior of sector members for the entire fishing year; so if a member chooses to leave the sector during the fishing year, that member would not be allowed to fish in the groundfish fishery for the rest of that fishing year and the member's contribution to the sector's allocation would remain with the sector for the remainder of the fishing year.

Annual Catch Limits (ACLs) are the amount of catch allowed for the entire Northeast multispecies fishery. These levels are required to be set by the Magnuson-Stevens Act to ensure that overfishing does not occur. In the Northeast multispecies fishery, this level is set below the Acceptable Biological Catch (ABC) of the fishery, to account for management and scientific uncertainty. When permit holders join a sector, they bring a **Potential Sector Contribution (PSC)**, which is a share of the ACL for each stock. PSC is based on the fishing history attached to each permit joining that sector in a given year. To determine the amount (in pounds) that a sector can harvest for each stock, all of the sector members' PSCs (a percentage) are multiplied by the ACL. This amount is the sector's **Annual Catch Entitlement, or ACE**. Sectors may lease ACE to any other sector at any time during the fishing year.

In exchange for committing to operate under ACE for all allocated stocks and developing a legally binding Operations Plan which is subject to NEPA review, sector members are exempt from certain regulatory restrictions which apply to Common Pool members fishing under the Northeast Multispecies FMP. Those restrictions are effort control measures that are no longer necessary because the sector's ACE caps fishing mortality resulting from sector operations, and include DAS, differential DAS counting areas, trip limits on allocated stocks, and the seasonal closure on Georges Bank. As a management tool, sectors satisfy several of the goals and objectives stated in Amendments 13 and 16 as described in detail in Section 2.2. First and foremost, sectors are an important tool for ending overfishing and rebuilding overfished fish stocks because members must operate under an ACE for all allocated groundfish stocks. Similar to the Common Pool, sectors are also not allowed to retain any of certain stocks of concern. Additionally, because sectors are operating under an ACE, each sector is held accountable for their landings and discards through weekly reporting. Accountability Measures (AMs), are triggered if their ACLs are exceeded, as mandated by the Magnuson-Stevens Act. Finally, sectors are intended to alleviate social and economic hardships that may result from stock rebuilding efforts.

1.2.1 General Requirements for Operations Plan Harvesting Rules

Sectors must submit an annual Operations Plan as specified at 50 CFR § 648.87(b)(2). Among other requirements, plans must include the following:

- a list of all participating permits;
- a plan for consolidation or redistribution of ACE or redirection of effort into other fisheries;
- a list of management or harvest rules;
- a method for the allocation of the sector's ACE amongst its members;
- information about entry, exit and expulsion from a sector;
- information regarding intra-sector penalties;
- a detailed plan for monitoring and reporting of landings and discards, including thresholds which increase the reporting frequency; and
- a list of proposed exemptions from Northeast multispecies regulations.

"**Allocated target species**" are the groundfish species for which the sector would receive an ACE. "**Non-allocated target species"** refers to species which the sector member would also be targeting, but for which no ACE is allocated. These other fish species (non-allocated target) may be caught by the same gear while fishing for allocated target species, and brought to shore and sold to dealers (i.e., "landed"), assuming the fisherman has proper authorization or permit(s). These non-allocated target species may also be managed under the Northeast Multispecies FMP (e.g., halibut and whiting) or another FMP (e.g., Monkfish FMP). As defined in the Magnuson-Stevens Act, "**bycatch"** refers to "fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards." For the purposes of this EA, the discussion of non-allocated target species and bycatch refers primarily to skates, monkfish, and dogfish. These species predominate bycatch (i.e., dogfish) or are the primary alternate species that are landed by groundfishermen (i.e., monkfish and skates).

1.2.2 Potential for Redirection of Effort and or Fleet Consolidation

The multiple regulatory constraints placed on Common Pool groundfishermen are intended to control their catch per unit effort (CPUE). Exemptions to many of these controls, which have been granted to sectors in previous years, may increase the CPUE of sector participants. As a result, sector fishermen may have additional time that they could direct towards non-groundfish stocks that they otherwise would not have pursued, resulting in redirection of effort into other fisheries. Additionally, to maximize efficiency, fishermen within a single sector may be more likely to allocate fishing such that some vessels do not fish at all; this is referred to as fleet consolidation.

Both redirection and consolidation have been observed when management regimes for fisheries outside the Northeast United States (U.S.) shifted toward a catch share management regime such as sectors. For example, research following the rationalization of the halibut and sablefish fisheries by the North Pacific Fishery Management Council found individuals who received enough quota shares were able to continue fishing with less competition, greater economic certainty, and over a longer fishing season (Matulich and Clark 2001). However, individuals who did not receive enough of a catch share either bought or leased catch shares from other fishermen or sold their quota. Similarly, one year after implementation of the Bering Sea-Aleutian Island crab fishery Individual Transferable Quota (ITQ), a study found that about half of the vessels that fished the 2004/2005 Bering Sea Snow Crab fishery did not fish the following year. However, research on the ITQ plan for the British Columbia halibut fishery found efficiency gains were greatest during the first round of consolidation, and little incentive to increase efficiency (or continue consolidation) existed afterward (Pinkerton and Edwards 2009).

The scope of consolidation and redirection of effort that may be expected to result from sector operations in FY 2011 is difficult to predict. The first year of expanded sector operations, FY 2010, is ongoing and a complete dataset of sector fishing activities, including ACE trading and observed fleet consolidation and redirection of effort, during FY 2010 is not yet available. Sectors are required to submit a year-end report summarizing the fishing activities of participating permits, including information concerning consolidation and redirection of effort, but these annual reports will not be available until after the end of FY 2010. However, the activities of FY 2010 sectors and individual sector's predictions for expected consolidation in FY 2011 are discussed further in Section 1.3. NMFS expects to have more information regarding consolidation and redirection to use in the analysis of the FY 2012 sector Operations Plans, once it receives and analyzes FY 2010 sector annual reports and catch data..

1.3 HISTORY OF SECTORS IN THE NORTHEAST MULTISPECIES FISHERY

The final rule implementing Amendment 13 to the Northeast Multispecies FMP (69 FR 22906, April 27, 2004) articulated a process for the formation of sectors within the Northeast multispecies fishery and for the allocation of a TAC[1] for a specific groundfish species or for DAS, established the various elements of the first sector, the Georges Bank Cod Hook Sector, and implemented restrictions that apply to all sectors. The Georges Bank Cod Hook Sector was approved for operation in 2004 (69 FR 43535 July 21 2004). A second sector, the GB Cod Fixed Gear Sector was authorized under Framework (FW) 42 in 2006 (71 FR 62156, October 23, 2006).

Amendment 13 also laid out the rebuilding plans for certain stocks managed under the Northeast Multispecies FMP. Two benchmark assessment meetings were required as part of the rebuilding plans in 2005 and 2008 (Groundfish Assessment Review Meeting or GARM II and GARM III [Mayo and Terceiro 2005, NEFSC 2008]) to check rebuilding progress and ensure rebuilding targets would be met as planned. If the results of the second assessment (GARM III) indicated a need for adjustment to the rebuilding plans, then new management measures would be implemented through an amendment in time for FY 2009 (halfway through the rebuilding plan for most stocks) (NEFSC 2008).

Amendment 16 to the Northeast Multispecies FMP addresses the findings of the GARM III by imposing management measures consistent with species rebuilding plans and schedules. During the scoping process for Amendment 16 in 2006, the Council received a number of recommendations for new ways to manage the fishery, all of which would require major changes to the Northeast Multispecies FMP (71 FR 64941, November 6, 2006). Faced with the mandated 2009 deadline for implementation of the amendment, the Council voted to postpone development of all new management alternatives, leaving Amendment 16 to focus on addressing the rebuilding plans as required under Amendment 13. Additionally, in April 2007, 17 different groups of fishermen submitted sector proposals and requested that the Council consider and approve additional new sectors through Amendment 16. One result of increased interest in sectors is that the Council determined that revisions to sector policies were needed. Therefore in addition to addressing the Amendment 13 rebuilding plans, sector procedures and policies were revised in Amendment 16. This included the implementation of dockside and at-sea monitoring program requirements and provisions to allow the trading of ACE between sectors. The Final Amendment 16 was submitted by the Council on October 16, 2009 including the Final EIS. The proposed rule for Final Amendment 16 was issued on December 31, 2009, (74 FR 69382) and the final rule was issued on April 9, 2010 (75 FR 18262).

The passage of Amendment 16 prior to FY 2010 ushered in a new level of sector participation. In FY 2010, 17 sectors were allocated ACE under FW 44 [(75 FR 18356 published April 9, 2010), Final Adjustment to FW 44 Specifications (75 FR 29459 published May 26, 2010)]. Over 50 percent of eligible northeast multispecies permits and over 90 percent of landings history participated in sectors. Seventeen individual EAs were prepared, one for each individual sector operations plan, which resulted in the approval of 7 of the sectors' individual exemption requests for FY 2010 (Section 3.3.2). In July 2010, the pollock ACL for 2010 established in FW 44 was increased through rulemaking (75 FR 41996, published July 20, 2010) in response to a determination that pollock is not overfished and overfishing is not occurring. Sector ACE's were adjusted accordingly.

[1] TAC is defined as a catch limit set for a particular fishery, generally for a year, or part of a year. This term has been usurped by ACL as per the revised 2006 Magnuson-Stevens Act, but is still used in reference to stocks jointly managed by U.S. and Canada and is referenced by older regulations such as Amendment 13 to the Northeast Multispecies FMP.

NMFS conducted various outreach activities to facilitate the implementation of Amendment 16 before the start of, and during, FY 2010. Example outreach activities have included maintaining a sector information website, distributing a newsletter to interested parties every other month, conducting training and workshops about required reporting and monitoring, and holding town hall events to gather feedback about Amendment 16 implementation and issues. In June and July 2010, NMFS conducted implementation outreach meetings to address questions pertaining to Amendment 16. Roundtable discussions were held in fishing ports from Maine to New Jersey and via telephone with the broader fishing industry to gather feedback on the implementation of Amendment 16. Most of the implementation related questions focused on at-sea and dockside monitoring, how discards are applied to sector ACEs, quota monitoring, and when landings information would be publicly available. Participants also raised concerns with reporting burdens unique to sectors, including dockside monitoring hails prior to departing the dock and prior to ending the trip to facilitate the deployment of dockside monitors, and the vessel trip report submittal requirements. Additional comments or concerns raised included potential socio-economic impacts of the regulatory changes and the evaluation of these impacts, the validity of the science used to set the current management measures, and the rate at which sectors were implemented (http://www.nero.noaa.gov/nero/nr/nrdoc/10/10SumJuneJuly0outreachmeetings.pdf).

On December 23, 2010, NMFS published a final rule that implemented addenda to add exemptions to the 17 approved FY 2010 sector Operations Plans (75 FR 80720). The purpose of this action was to address operational and safety issues that were identified by sector participants as well as to provide additional flexibility and improve the profitability of sector vessels fishing in FY 2010. NMFS prepared a supplemental EA for this action that analyzed expanding the 7 sector-specific exemptions approved for some FY 2010 sectors to all those sectors that requested them, as well as approving 2 new exemptions that would increase profitability and address the operational and safety issues raised by sector participants. The rule and associated November 2010 supplemental EA concluded that an increase in flexibility and fishing opportunities for fisherman should result from expanding previously approved exemptions to all sectors that request them for the remainder of FYFY 2010.

On January 21, 2011, the NEFMC submitted FW 45 for review by NMFS and NMFS published a proposed rule in the Federal Register on March 3, 2011 (76 FR 11858). FW 45, as proposed, contains several measures (such as setting of ACLs for FYs 2011 and 2012, updated fishery program administration, modified overfishing management measures, and actions to minimize adverse effects of fishing on essential fish habitat [EFH]) which will expand or alter sector management. FW 45 is currently proposing the following measures:

- Revised status determination criteria (including an updated pollock assessment);
- Revised GB yellowtail flounder rebuilding mortality targets;
- Revised ACLs (including incidental catch TACs););
- Specified TACs for US/CA area;
- Implementation of 5 additional sectors;
- Dockside monitoring exemption for Common Pool handgear A and B permits and small vessel exemption permits;
- Modification of dockside monitoring requirements for commercial groundfish fishing vessels;
- Removal of requirement for industry funding of at-sea monitoring for FY 2012;
- Revised PSC distribution based on cancelled permits;
- Spawning closure for cod in the Gulf of Maine

- Revised trip limits for handgear A vessels;
- Exemption for General Category scallop vessels from yellowtail flounder spawning closure; and
- Implementation of actions to encourage conservation and enhancement of EFH.

Seven additional groups of fishermen submitted sector proposals for consideration by the Council as new sectors in FY 2011, five of which were proposed in FW 45. Four of these proposed sectors would involve National Oceanic And Atmospheric Administration (NOAA)-sponsored, state-operated permit banks, and were formed for the sole purpose of transferring ACE to qualifying sectors at any time during the fishing year (see Section 3.2 for further discussion). The NEFMC has also initiated Amendment 17 to the FMP to further develop NOAA-)-sponsored, state-operated permit banks, and to streamline the administrative requirements these permit banks must meet to lease ACE to a sector.

Data describing the level of fishing effort in the first quarter of FY 2010 appears to be consistent with intense effort early in the season among Common Pool fishermen; this is a commonly observed behavior among fishermen regulated by DAS and similar regulatory regimes, because Common Pool fishermen compete for a share of the relatively low sub-ACLs. Since the start of FY 2010, NMFS has closely monitored the Common Pool catch and has had to implement appropriate inseason adjustments to reduce catch rates in order to prevent catch from exceeding the Common Pool sub-ACLs. These adjustments have included gear restrictions and reductions in trip limits applicable to the Common Pool for several stocks (75 FR 29678, May 27, 2010; 75 FR 44924, July 30, 2010; 75 FR 48613, August 11, 2010; 75 FR 59154, September 27, 2010; and 75 FR 73979, November 30, 2010), and implementation of a differential DAS counting rate in the Gulf of Maine and Georges Bank (75 FR 53871, September 2, 2010). Preliminary analyses of the first quarter of the FY 2010 fishing year indicated that a relatively high percentage of the Common Pool sub-ACLs have been caught, with only roughly a third of the available DAS used (75 FR 53871, September 2, 2010).

While the data are preliminary (and subject to change), it appears as though sector fishermen may be allocating their ACE more evenly throughout the year. Through the February 26, 2011 reporting period, between 12 percent and 72 percent, depending on species, of sector ACLs have been caught (NOAA 2011). This data is preliminary (and not necessarily an indicator of future fishing activity in FY 2011) and has been obtained from vessels via Vessel Monitoring System (VMS); Vessel Trip Reports; fish dealer purchase reports; and the Northeast Fisheries Observer Program. Cumulatively for all sector groundfish catch, approximately 28 percent of the total groundfish sector sub-ACLs has been obtained through February 26, 2011. In contrast, over this same reporting period, depending on species, the Common Pool has landed between 0 percent and 123 percent of the Common Pool sub-ACLs. Approximately 43 percent of the total Common Pool groundfish sub-ACLs had been obtained through February 26, 2011. Sector and Common Pool landings summaries are provided on the NMFS website at http://www.nero.noaa.gov/ro/fso/reports/Sectors/Sector_Summary.html and http://www.nero.noaa.gov/ro/fso/reports/common_pool/Common_Pool_Summary.html, respectively.

FY 2011 Operations Plans included information about the potential level of redirection of effort and consolidation individual sectors expected in FY 2011 based on vessel activities in the first quarter of FY 2010. In the FY 2011 Operations Plans, sectors identified the percentage of enrolled permits that were attached to vessels in FY 2010 as opposed to the percentage expected to fish for groundfish in FY 2011. Further, Operations Plans identified the percentage of permits associated with vessels anticipated during FY 2011. Most sectors expect that, compared to FY 2010, there would be little to no change from the consolidation that previously occurred within the sector during FY 2010. Five sectors reported that they anticipated a smaller percentage of permits attached to fishing vessels in FY 2011 as compared to FY 2010.

2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to facilitate the implementation of approved sector Operations Plans for FY 2011, including associated exemptions. The proposed action is needed to alleviate social and economic hardships through flexible fisheries management and cooperative harvesting of ACLs, while meeting the biological objectives of the Northeast Multispecies FMP as well as the goals and objectives set forth by the NEFMC in Amendments 13 and 16.

The need for the action is reflected by the receipt of 19 sector applications for FY 2011 representing over 50 percent of eligible northeast multispecies permits and over 90 percent of landings history. Each of these sectors would represent a group of limited access multispecies permit holders cooperating for the purpose of more efficiently harvesting their ACE.

3.0 PROPOSED ACTION AND ALTERNATIVES

This section describes the proposed action and alternatives considered for FY 2011; the approved action may ultimately include the proposed action and/or multiple alternatives which may be combined in the final action.

3.1 ALTERNATIVE 1 - IMPLEMENTATION OF SECTOR OPERATIONS PLANS FOR FISHING YEAR 2011

Table 3.1-1 identifies each of the individual sectors and summarizes sector participants as a group. As of September 10, 2010 a total of 395 active vessels were included among the sector applications representing 821 Northeast multispecies permits. They would utilize 39 primary ports located throughout the Northeast and Middle Atlantic regions and would likely fish throughout the year on all major Northeast fishing grounds to which they are granted access. Fishermen would use a range of gear including: trawls (56 percent of vessels), gillnet (28 percent of vessels), hook (13 percent of vessels), pot/trap (2 percent of vessels), and trawl/gillnet (<1 percent of vessels).

Sectors have requested an ACE for the 14 stocks of fish managed under the FMP that may be allocated to sectors. The percent of ACL for each allocated target species that would be assigned to each sector ranges from less than 0.01 to 50.9 (Table 3.1-1). In addition to harvest of allocated species, sector participants may also harvest non-allocated target species and bycatch species. The proportion of ACLs in each sector compared to all other sectors and the Common Pool are illustrated in Figure 3.1-1 with the exception of the MPBS, which as of the September 10, 2010 roster date had not yet acquired any permits.

For a complete description of each individual sector's Operations Plan, consistent with the requirements outlined in Section 1.2.1, visit http://www.regulations.gov.

Alternative 1 may be approved or disapproved independently of Alternative 2 (State permit bank sector(s)) and Alternative 4 (exemptions to be analyzed for State permit bank sectors). If Alternative 1 is approved, Alternative 3 (exemptions to be analyzed for all non-permit bank sectors) would also be evaluated and each individual exemption included in Alternative 3 may be approved or disapproved independently.

3.1.1 No Action Alternative 1

If the No Action Alternative is selected for Alternative 1, sectors would not have approved Operations Plans and vessels participating in the Northeast Multispecies fishery would return to, or remain in, the Common Pool where they would fish under DAS regulation.

Table 3.1-1
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Sustainable Harvest Sector (SHS) 1
Number of Active Vessels	37
Number of Permits	104
Primary Ports	Boston, MA; Gloucester, MA; New Bedford, MA; Provincetown, MA; Hyannis, MA; Chatham, MA; Scituate, MA; Point Judith, RI; Portland, ME; Biddeford Pool, ME; Sebasco Harbor, ME Cundy's Harbor, ME; Rockland, ME; Portsmouth, NH; Rye, NH; Newport, RI; Chincoteague VA
Primary Fishing Grounds	Gulf of Maine, Offshore Georges Bank, Inshore Georges Bank, and Southern New England
Gear Types	Trawl, gillnet
GB cod % ACL	16.3
GOM cod % ACL	18.1
GB Haddock % ACL	28.8
GOM Haddock % ACL	40.1
GB Yellowtail Flounder % ACL	11.7
SNE/MA Yellowtail Flounder % ACL	6.2
Cape Cod/GOM Yellowtail Flounder % ACL	10.0
American Plaice % ACL	39.2
Witch Flounder % ACL	33.4
GB Winter Flounder % ACL	9.9
GOM Winter Flounder % ACL	5.2
Redfish % ACL	48.0
White Hake % ACL	50.9
Pollock % ACL	38.7

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
SHS 3	0*	17	Boston, MA; Gloucester, MA; New Bedford, MA; Provincetown, MA; Hyannis, MA; Chatham, MA; Scituate, MA; Point Judith, RI Portland, ME; Biddeford Pool, ME; Sebasco Harbor, ME; Cundy's Harbor, ME; Rockland, ME; Portsmouth, NH; Rye, NH; Newport, RI; Chincoteague VA	None	None	1.2	0.7	2.0	1.5	0.5	3.9	2.2	1.1	1.5	0.4	3.3	1.6	0.9	1.0

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
Tri State Sector (TSS)	7	19	Portland ME; Gloucester, MA; New Bedford, MA; Provincetown, MA; Scituate, MA; Beverley, MA; Salem, MA;	Gulf of Maine, Offshore Georges Bank, Inshore Georges Bank, and Southern New England	Trawl, gillnet, hook gear	0.7	0.8	1.4	0.5	7.2	1.2	2.0	1.0	0.9	1.9	2.1	0.0	0.0	0.0
Port Clyde Community Groundfish Sector (PCS)	24	42	Portland, ME; Port Clyde, ME; Kennebunkport, ME; Boothbay Harbor, ME; Saco, ME; Harpswell, ME	Gulf of Maine	Trawl, trawl/ gillnet (mobile gear), gillnet (fixed gear)	0.2	4.2	0.1	2.2	0.0	0.7	1.1	6.3	4.4	0.0	2.2	2.2	3.9	3.2

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
Fixed Gear Sector (FGS)	42	99	Chatham, MA; Harwich, MA; Provincetown, MA	Gulf of Maine, Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic	Hook gear, gillnet	28.1	2.0	6.4	1.3	0.0	0.3	1.9	0.6	0.8	0.0	2.2	2.9	5.9	7.8
Northeast Coastal Communities Sector (NCCS)	27	30	Jonesport, ME; Winter Harbor, ME; Bass Harbor, ME; Stonington, ME; Swans Island, ME; Boothbay Harbor, ME; Marshfield, MA; Sandwich, MA; New Bedford, MA; Menemsha, MA	Gulf of Maine, Georges Bank, Southern New England	Hook gear, Pot/ trap, Trawl, Gillnet,	0.2	0.8	0.1	0.3	0.8	0.7	0.6	0.2	0.2	0.1	0.9	0.4	0.9	0.5

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
Northeast Fishery Sector (NEFS) 2	42	83	Gloucester, MA; Boston, MA	Gulf of Maine, Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic	Trawl	5.6	19.6	11.7	18.2	1.7	1.8	20.3	8.5	13.6	1.7	19.9	16.6	6.4	12.4
NEFS 3	49	95	Gloucester, MA	Gulf of Maine, Southern New England, and Georges Bank	Gillnet, Trawl, Hook gear, Pot/trap	1.3	17.5	0.2	12.3	0.1	0.4	9.5	4.5	3.1	0.0	11.0	1.6	5.3	7.9

Table 3.1-1 (continued) Summary of the All Sector Operations Plans for Fishing Year 2011																				
Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
NEFS 4	0*	41	Gloucester, MA	Gulf of Maine, Georges Bank, southern New England	Mobile and fixed gear (specific gear type not specified)	4.6	7.9	5.4	6.4	2.2	2.3	5.7	9.1	9.1	0.7	5.2	6.3	7.8	5.5
NEFS 5	27	33	Point Judith, RI; Newport, RI; New Bedford, MA; Montauk, NY	Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic	Trawl, Gillnet	2.0	0.1	3.8	0.3	6.1	24.5	1.1	1.4	1.7	2.0	0.3	0.3	0.2	0.3

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
NEFS 6	5	19	Boston, MA Gloucester, MA	Gulf of Maine, Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic, US/Canada offshore	Trawl	2.0	1.7	2.9	3.0	2.7	5.1	2.1	3.6	4.4	1.4	3.1	5.3	3.7	3.2

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
NEFS 7	15	22	New Bedford, MA	Gulf of Maine, Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic	Trawl, Hook gear, Gillnet, Pot/trap	5.2	0.4	4.5	0.6	13.5	3.9	3.0	3.6	3.2	15.5	0.9	0.7	0.8	0.7
NEFS 8	16	20	New Bedford, MA	Gulf of Maine, Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic	Trawl, Hook gear, Gillnet, Pot/trap	6.8	0.5	6.1	0.2	12.8	5.7	6.9	2.1	2.9	16.7	3.2	0.4	0.5	0.6

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
NEFS 9	22	55	New Bedford, MA	Gulf of Maine, Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic	Trawl	13.4	1.6	10.9	4.7	21.3	7.6	9.9	7.7	7.8	37.3	2.4	5.7	4.1	3.8
NEFS 10	26	49	Scituate, MA; Plymouth, MA; Marshfield, MA; Brant Rock, MA; Chatham, MA; Provincetown, MA; New Bedford, MA; Boston, MA	Gulf of Maine, Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic	Trawl, Gillnet, Hook gear, Pot/trap	1.0	5.5	0.3	2.6	0.0	0.4	13.7	1.9	3.3	0.0	27.3	0.6	0.9	1.5

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
NEFS 11	21	47	Portsmouth, NH; Seabrook, NH; Rye, NH; Hampton, NH; Portland, ME; Newburyport, MA; Gloucester, MA	Gulf of Maine, Southern New England, Georges Bank	Gillnet, Trawl	0.4	12.6	0.0	2.5	0.0	0.0	2.2	1.5	1.5	0.0	2.0	1.0	2.4	6.6
NEFS 12	6	11	Portsmouth, NH; Seabrook, NH; Rye, NH; Hampton, NH; Portland, ME; Newburyport, MA; Gloucester, MA	Gulf of Maine, Southern New England, and Georges Bank	Gillnet, Trawl	0.0	2.4	0.0	0.9	0.0	0.0	0.5	0.7	0.6	0.0	0.3	1.1	2.5	3.0

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
NEFS 13	29	35	New Bedford, MA; Gloucester, MA; Boston, MA; Point Judith, RI	Inshore, Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic	Trawl, Gillnet	8.0	0.7	14.9	0.9	17.2	12.6	3.1	3.9	5.0	10.8	1.3	4.6	1.9	2.3
Maine Permit Banking Sector (MPBS)[a]	0*	0[a]	NA[a]	NA[a]	NA[a]	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
Sector Wide[b]	**395**	**821**	Boston, MA; Gloucester, MA; New Bedford, MA; Provincetown, MA; Hyannis, MA; Chatham, MA; Scituate, MA; Beverly, MA; Salem, MA; Plymouth, MA; Brant Rock, MA; Marshfield, MA; Sandwich, MA; Menemsha, MA; Newbury Port, MA; Harwich, MA Point Judith, RI; Newport, RI; Portland, ME; Biddeford Pool, ME;	Gulf of Maine, Inshore Georges Bank, Offshore Georges Bank, and Southern New England/Mid Atlantic,	Trawl, Hook gear, Gillnet, Pot/trap	**97.0**	**97.1**	**99.4**	**98.4**	**97.7**	**77.5**	**95.7**	**96.9**	**97.4**	**98.6**	**92.8**	**99.2**	**98.8**	**98.9**

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Sector Name	Number of Active Vessels	Number of Permits	Primary Ports	Primary Fishing Grounds	Gear Types	GB cod % ACL	GOM cod % ACL	GB Haddock % ACL	GOM Haddock % ACL	GB Yellowtail Flounder % ACL	SNE/MA Yellowtail Flounder % ACL	Cape Cod/GOM Yellowtail Flounder % ACL	American Plaice % ACL	Witch Flounder % ACL	GB Winter Flounder % ACL	GOM Winter Flounder % ACL	Redfish % ACL	White Hake % ACL	Pollock % ACL
Sector Wide[b] (cont.)			Sebasco Harbor, ME ; Cundy's Harbor, ME; Rockland, ME; Port Clyde, ME; Kennebunkport, ME; Boothbay Harbor, ME; Saco, ME; Harpswell, ME; Jonesport, ME; Winter Harbor, ME; Bass Harbor, ME; Stonington, ME; Swans Island, ME Portsmouth, NH; Rye, NH; Seabrook, NH; Hampton, NH Montauk, NY; Chincoteague VA																

Table 3.1-1 (continued)
Summary of the All Sector Operations Plans for Fishing Year 2011

Notes: * = SHS 3, NEFC 4, and MPBS do not have active vessels at this time. For NEFS 4 and MPBS (lease only Sectors, gears and/or ports are indicative of how and where their leased ACE may be fished. SHS 3 is not a lease-only Sector and may have active vessels prior to the roster deadline.

Refer to the Sector Operations Plans (http://www.regulations.gov) for a more detailed description of individual Sectors.

a. Pending roster development. MPBS had not acquired permits as of the September 10, 2010 roster date utilized in this EA.

b. Sector wide ACL totals may differ from the sum of individual Sector ACLs due to rounding.

Figure 3.1-1 Percentage of Allocated Target Stocks in Each Sector and the Common Pool

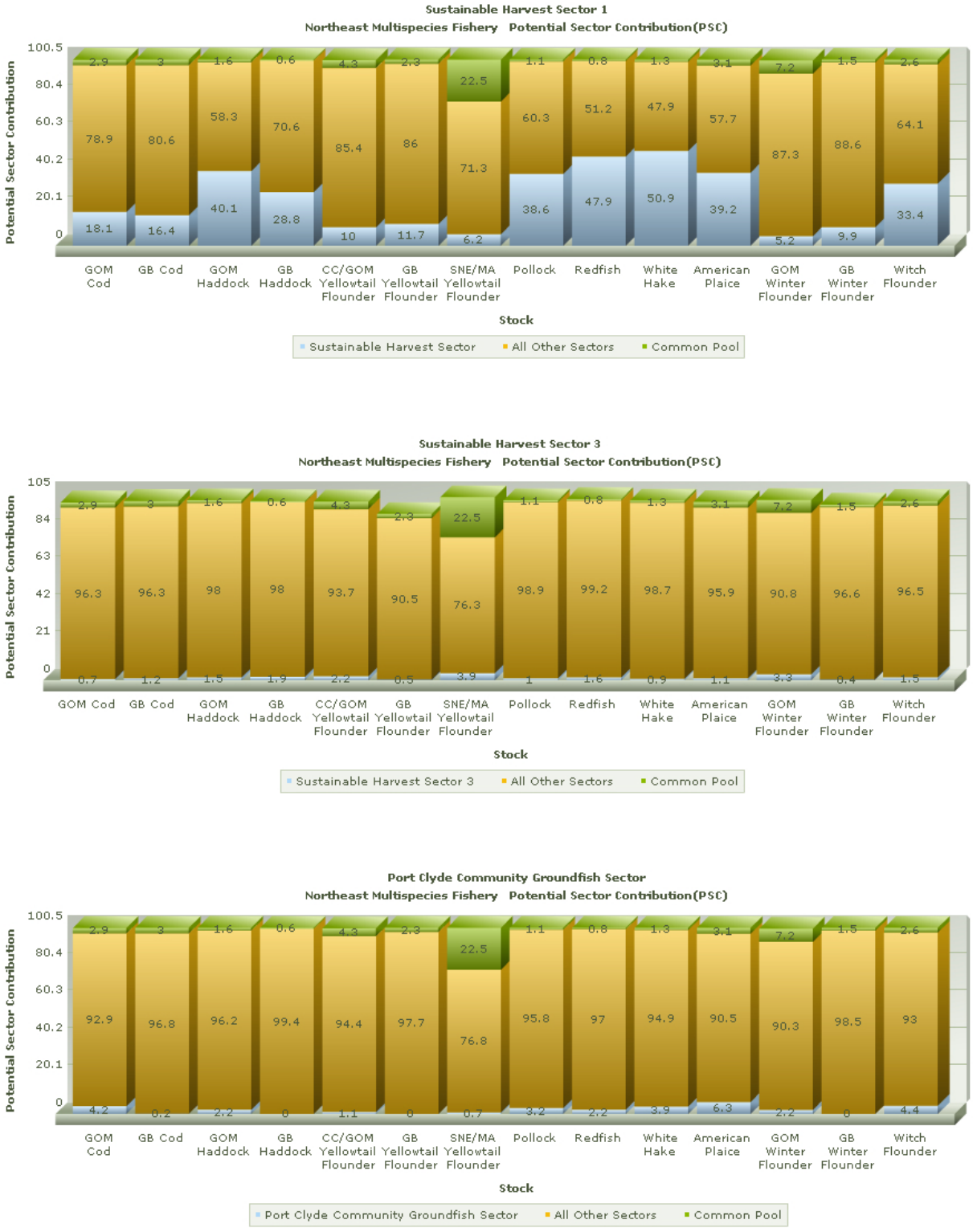
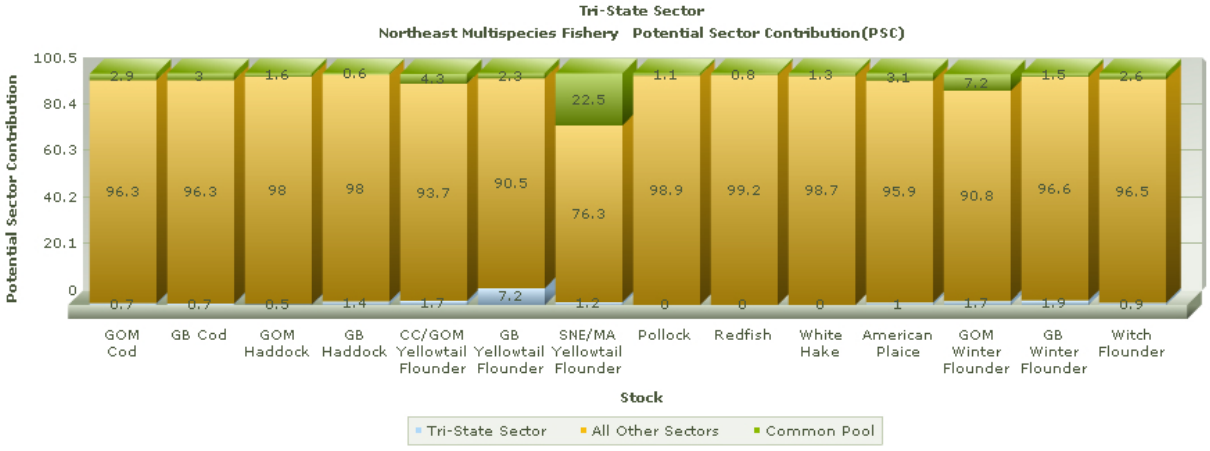
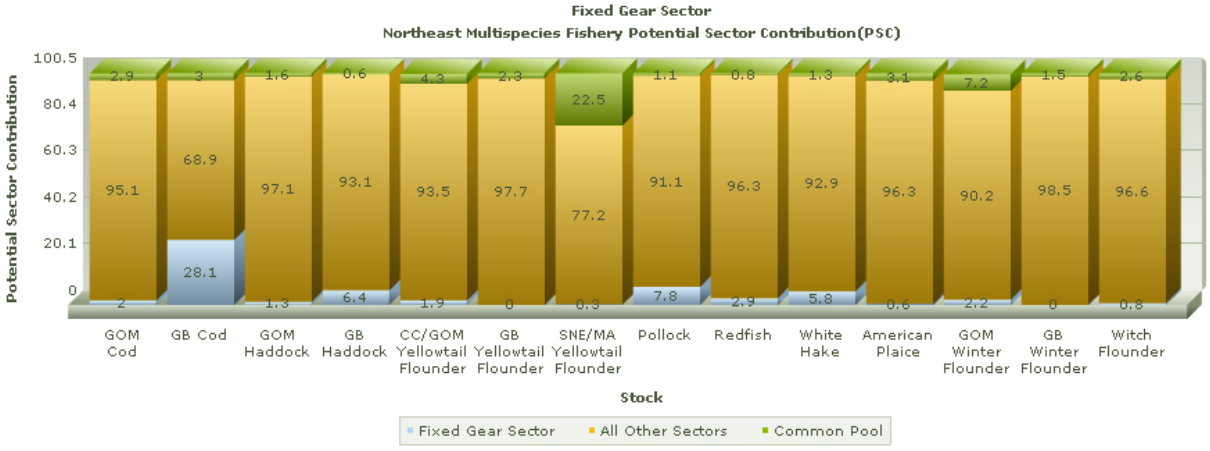


Figure 3.1-1 Percentage of Allocated Target Stocks in Each Sector and the Common Pool (Continued)





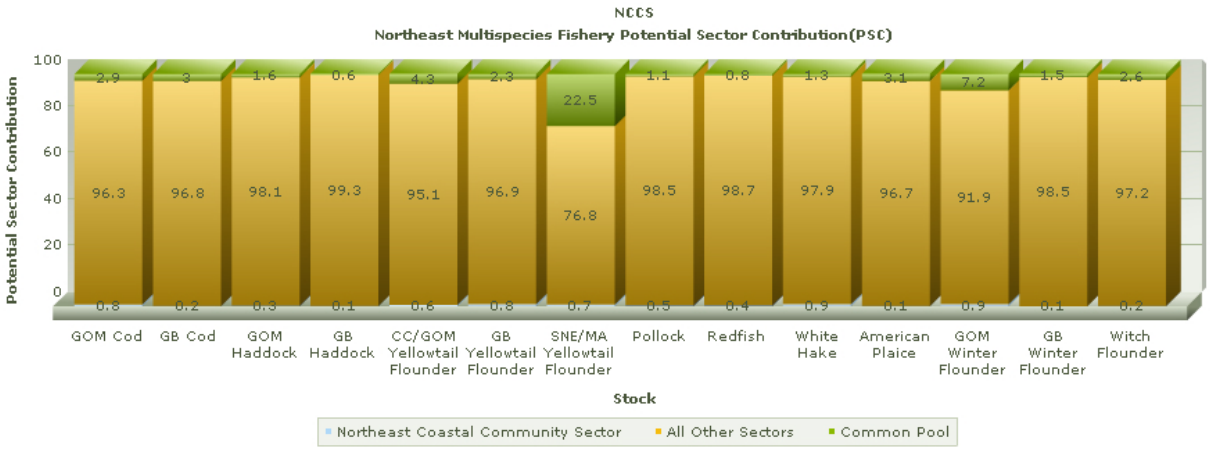
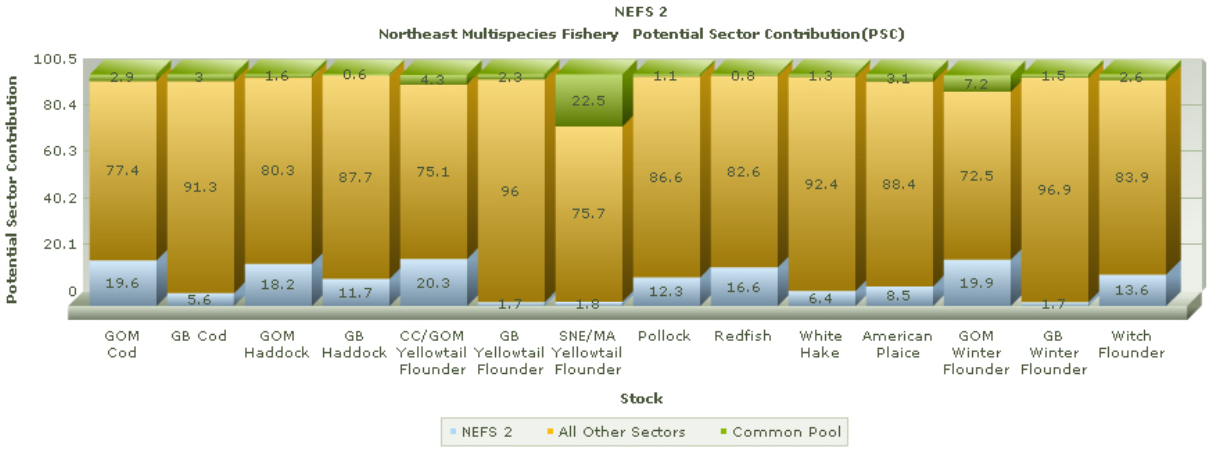
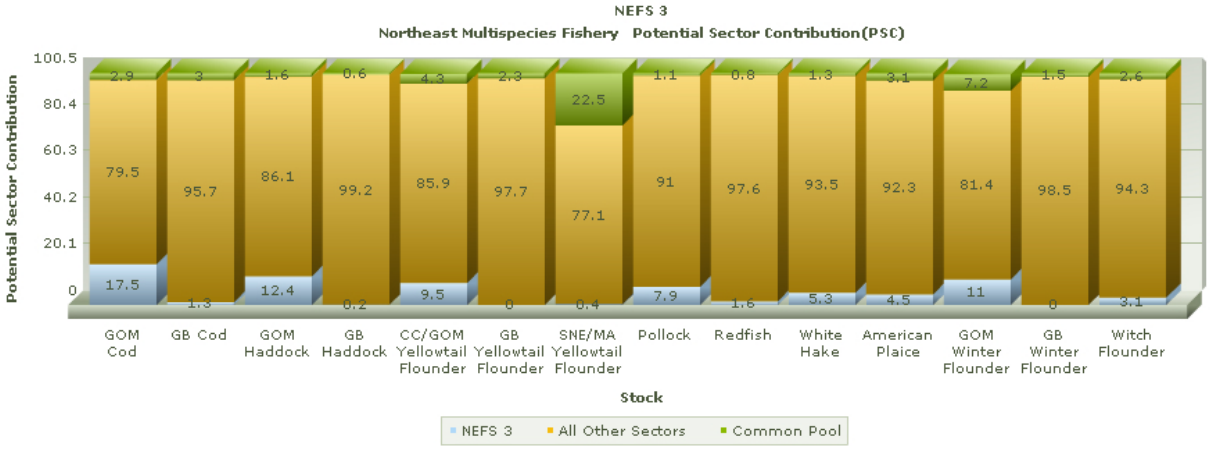


Figure 3.1-1 Percentage of Allocated Target Stocks in Each Sector and the Common Pool (Continued)





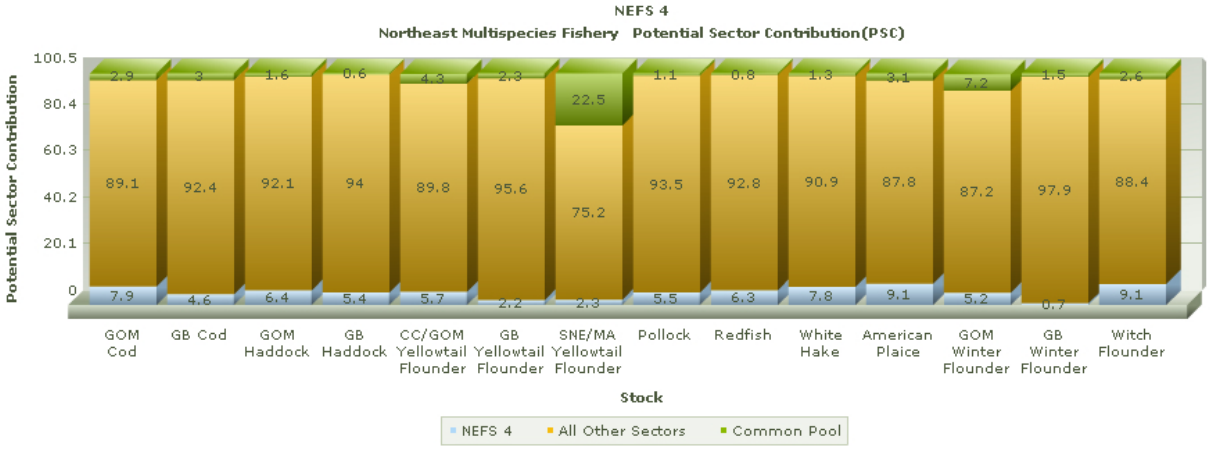
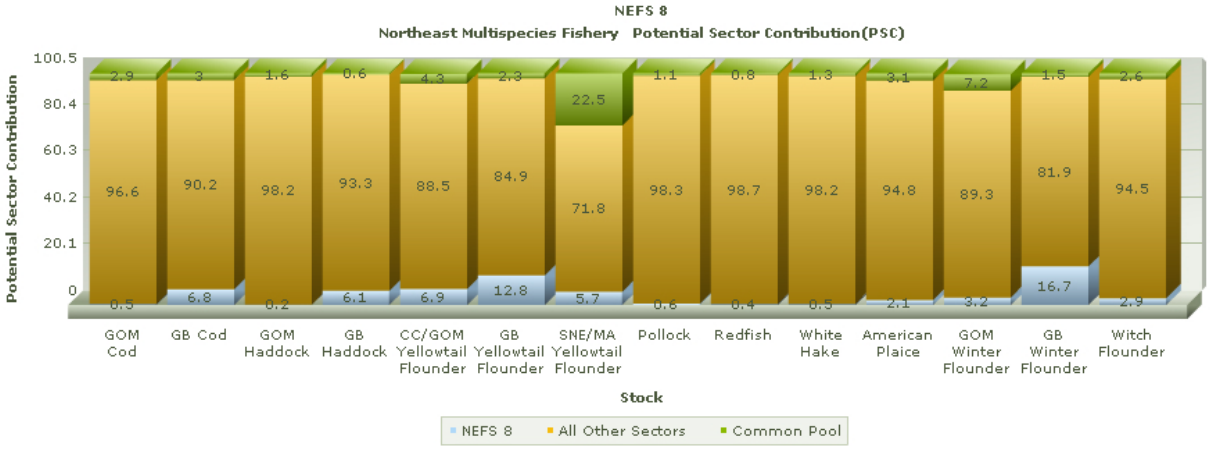
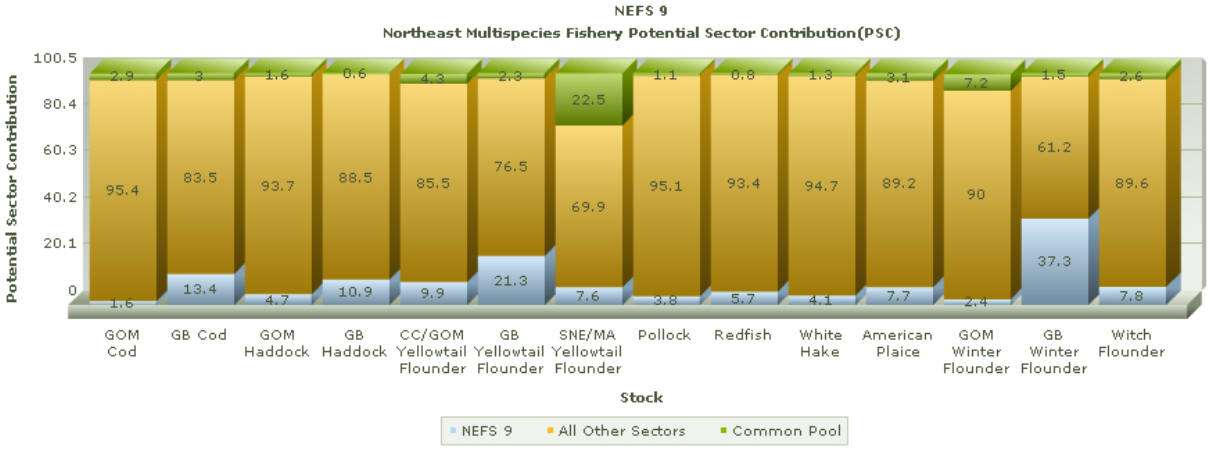


Figure 3.1-1 Percentage of Allocated Target Stocks in Each Sector and the Common Pool (Continued)





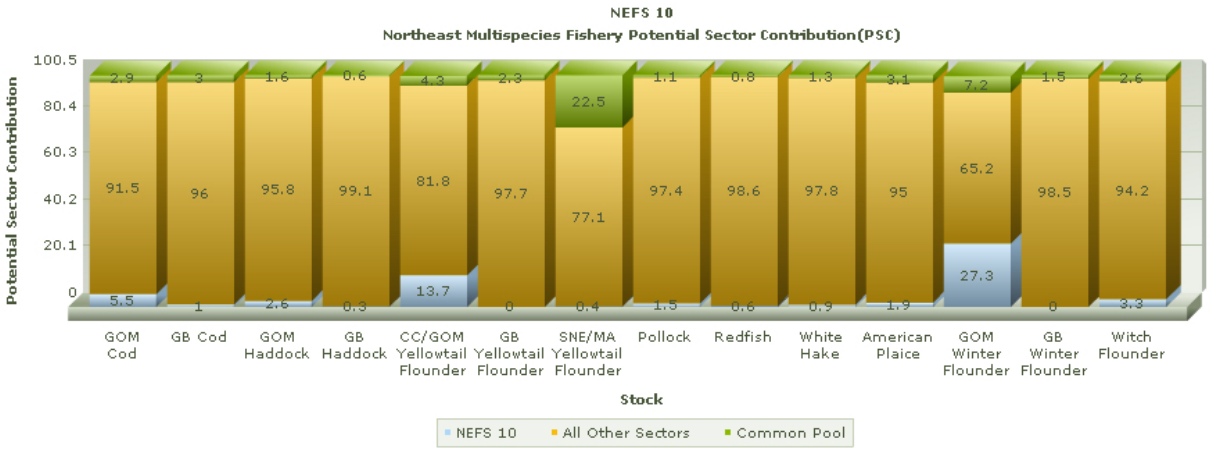
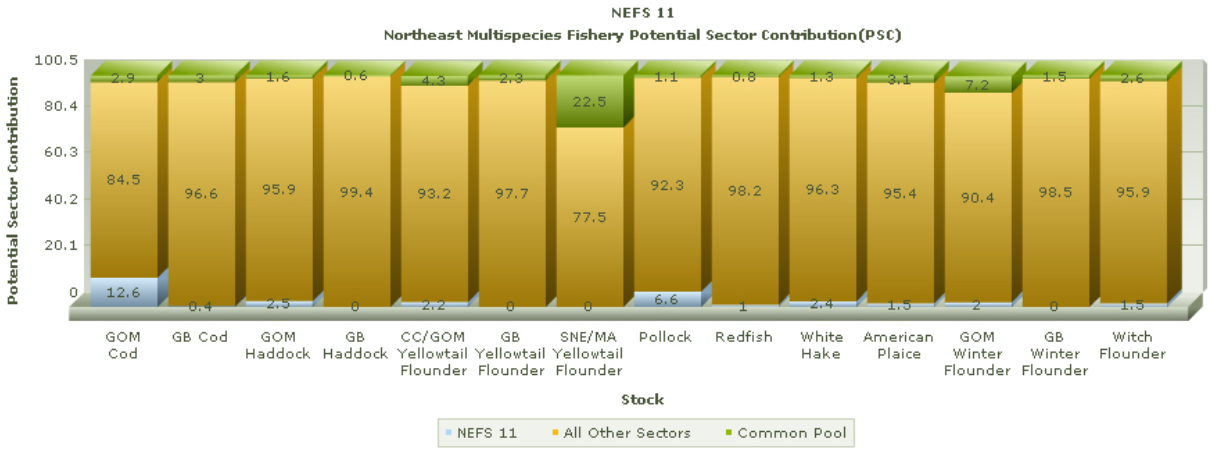
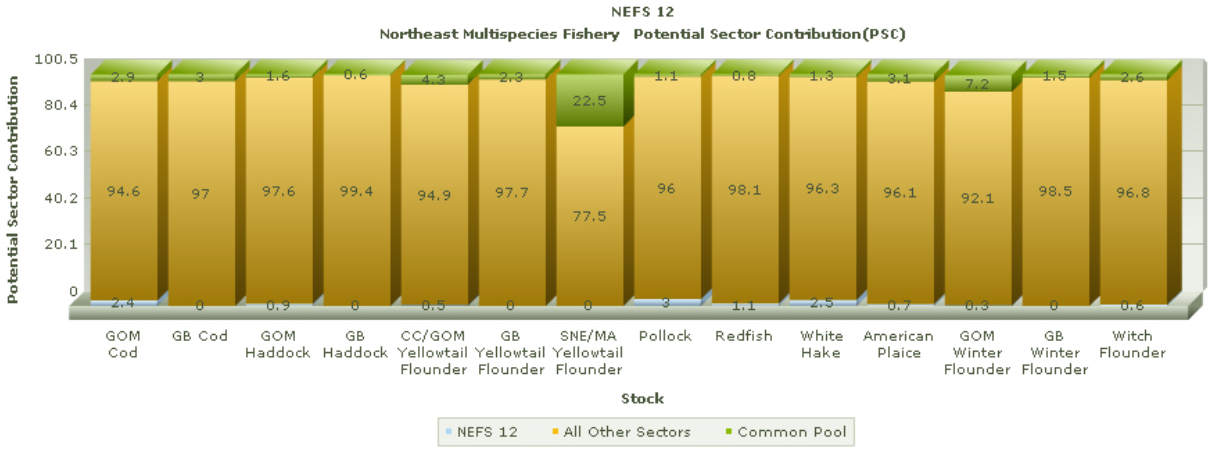
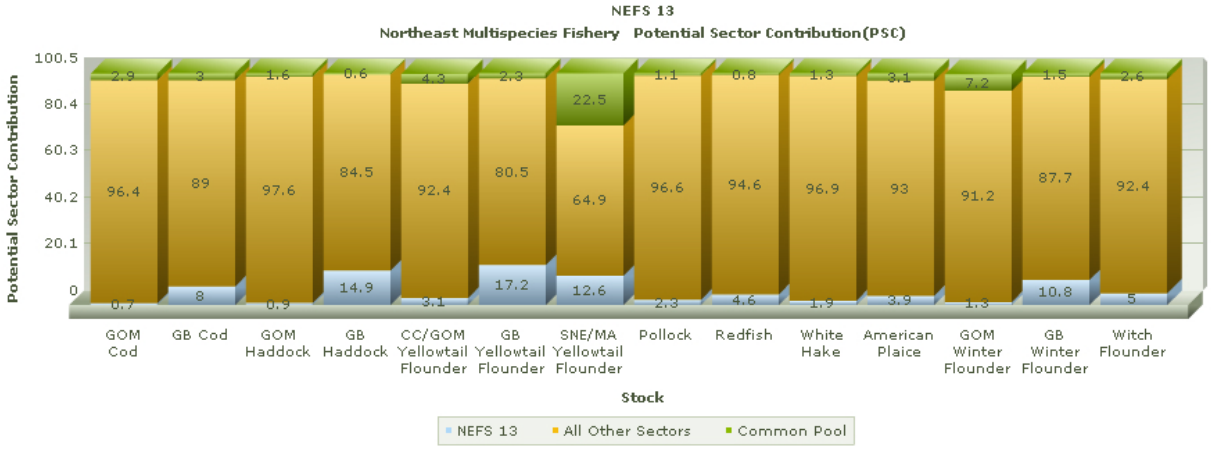


Figure 3.1-1 Percentage of Allocated Target Stocks in Each Sector and the Common Pool (Continued)







3.2 ALTERNATIVE 2 – STATE PERMIT BANK SECTORS

As described in Section 1.2.2, sector management may result in the redirection of fishing effort and/or fleet consolidation. Several New England states and NMFS have an interest in promoting the effective implementation of sectors in the Northeast multispecies fishery while minimizing any potential adverse socio-economic impacts that may be related to redirection or consolidation.

NOAA has provided funding to the states of Maine, New Hampshire, Massachusetts, and Rhode Island in the form of a Federal grant, for the express purpose of establishing a bank of Northeast multispecies fishing vessel permits (permit bank). A permit bank, in its most basic form, is a collection of fishing permits held by an organization or individual for the purpose of providing to others the fishing privileges associated with those permits. These permits can be enrolled in a sector, or remain in the Common Pool, and the DAS allocations associated with these permits (or harvest share, as distributed by the sector), can be leased back to fishermen to meet specific management goals (in this case, maintaining fleet diversity and character). The Federal grant award is intended to facilitate a partnership between the states and NMFS to establish a pilot permit bank program prior to the potential expansion of permit banking programs in other states or regions.

Currently, NMFS has a memorandum of agreement (MOA) with each of the states of Maine, New Hampshire, Massachusetts, and Rhode Island for the administration of a pilot program involving a state-managed permit bank. Each MOA stipulates the terms and conditions for the development, implementation, and operation of the permit bank, such as how the permits and their associated allocations may be used. Under existing regulations, to be able to lease ACE allocation to sectors in FY 2011, the state permit banks must either enroll in an existing sector or form sectors. Hence, all four NOAA-sponsored state-operated permit banks formed sectors and submitted FY 2011 Operations Plans to NMFS; however, the Massachusetts, New Hampshire, and Rhode Island State permit bank sectors were unable to fulfill membership requirements. As a result, these state permit bank sectors will not be considered for approval in FY 2011, and an analysis of their Operations Plans and/or exemption requests is not included in this EA. In addition, Amendment 17 to the Northeast Multispecies FMP is currently under development. This amendment would modify the NE Multispecies FMP to allow for a NOAA-sponsored state-operated permit bank to lease ACE to sectors, without first becoming a sector itself.

The Maine Permit Banking Sector (MPBS) is being considered for approval in FY 2011 and would consist of two privately held permits, as well as additional permits which the state-operated permit bank has purchased or intends to purchase during the FY 2011 fishing year. The Maine State Permit Bank MOA and the Maine Permit Banking Sector's FY 2011 Operations Plan precludes the sector from engaging in active fishing activity; thereby requiring that the sector trade out its ACE and the DAS allocation(s) associated with its member permit(s) to other sector(s) and sector vessel(s) for harvest.

3.2.1 Maine Permit Banking Sector (MPBS)

This alternative would approve the Operations Plan for the MPBS. Terms and conditions for the permit bank that restrict the state to various management actions are detailed within the MOA. The MOA between the State of Maine and NMFS, which was incorporated into the MPBS FY 2011Operations Plan, states that in order to lease allocation contributed by the permit bank permits to a sector, 65 percent of the enrolled fishing vessels in that lessee sector must be no more than 45 feet in overall length, the lessee sector vessel that fishes the ACE from the MPBS must be no more than 45 feet in overall length, and the vessel owner must reside in and/or operate the vessel from a Maine community of no more than 30,000 residents. In order for the MPBS to meet the definition of a sector (having at least three distinct members), two other entities that hold eligible Northeast multispecies permits have enrolled in the MPBS, as well as additional permits the permit bank intends to purchase in FY 2011. The MPBS Operations

Plan details how the privately held permits shall be used by the sector, including that all ACE/DAS contributed to the sector from these two permits will be leased to the Port Clyde Community Groundfish Sector.

The MPBS may be approved or disapproved independently of Alternative 1 (implementation of sector Operations Plans for FY 2011) and independently of Alternative 3 (exemptions to be analyzed for all non-permit bank sectors).

If the MPBS is approved, Alternative 4 (exemptions to be analyzed for state permit bank sectors) would also be evaluated and each individual exemption in Alternative 4 may be approved or disapproved independently.

3.2.2 No Action Alternative 2

If the No Action is selected for Alternative 2, the MPBS would not be approved to operate as a sector in FY 2011, and the Maine State Permit Bank would not be able to use the sector to lease ACE or DAS to vessels in eligible sectors. The permits enrolled in the MPBS would remain in the Common Pool for FY 2011 and would fish under the regulations applicable to the Common Pool or, in the case of permits held by the permit bank, would only be able to lease DAS to eligible Common Pool vessels per the MOA. If Amendment 17 is implemented in FY 2011, as it is currently being developed, the Maine State Permit Bank may be able to lease ACE to sectors without first becoming a sector, as described under Alternative 2.

3.3 ALTERNATIVE 3 - EXEMPTIONS TO BE ANALYZED FOR ALL NON-PERMIT BANK SECTORS

The following text describes two classes of exemptions. Section 3.3.1 describes the universal exemptions specified in Amendment 16; these exemptions would apply to all FY 2011 sectors. Section 3.3.2 describes all sector specific exemptions proposed by individual sectors; if approved, these exemptions would apply to all FY 2011 sectors which request them.

3.3.1 Universal Exemptions as specified in Amendment 16

Universal exemptions for sectors and the general effects of sector formation given these universal exemptions are analyzed in the Amendment 16 Final EIS to the Northeast Multispecies FMP (NEFMC 2009a). They include the following:

- Exemption from groundfish DAS requirements, including DAS reductions, differential groundfish DAS counting, the 3/15 rule for gillnets, and 24-hour DAS counting.
- Exemption from trip limits on stocks for which a sector receives an allocation, except for the following:
    a) Halibut: trip limit would continue to be one fish per trip; and
    b) No vessel, whether in the Common Pool or in any sector, would be allowed to possess any windowpane flounder (both stocks), ocean pout, wolffish, or Southern New England and Mid-Atlantic (SNE/MA) winter flounder on board at any time. When caught, these species must be returned.
- Exemption from the Georges Bank Seasonal Closure in May.

- Exemption from any additional mortality controls adopted by Amendment 16, including additional seasonal or year-round closures[2], gear requirements, DAS reductions, differential DAS counting, and/or restricted gear areas.
- Gulf of Maine Rolling Closures in specific blocks as identified in Amendment 16 (specifically Section 4.2.3.9 of the EIS for Amendment 16).[3]
- Exemption from the requirement to use 6.5-inch mesh (16.5 cm) in the codend in haddock separator trawl/Ruhle trawl when targeting haddock in the GB RMA (i.e., authorized to use 6-inch mesh (15.2 cm) in the codend).

The reader is directed to the Amendment 16 FEIS and final rule for further description of these universal exemptions.

In addition to the universal exemptions, there are differences in the way sectors interact with the U.S./Canada Area and Special Access Programs (SAP). Section 4.2.3.3.3 of the EIS for Amendment 16 (October 16, 2009) addresses how sectors would be provided a separate ACE for those stocks that have a TAC specific to the Eastern U.S./Canada Area. At present, this only applies to GB cod and GB haddock, although this measure is intended to apply to other stocks if an area-specific TAC is defined. Section 4.2.3.8 of the Amendment 16 EIS addresses sector participation in special management programs, and stipulates that sector vessels cannot participate in special management programs unless the sector has ACE for the stocks caught in an SAP, and that the ACE must be sufficient to account for the expected catch in the SAP. This EIS section also describes sector guidelines for participating in the following SAPs: Eastern U.S./Canada Haddock SAP, Closed Area II Yellowtail Flounder SAP, and Closed Area I Hook Gear Haddock SAP.

3.3.2 Sector-Specific Exemptions

In addition to the universal exemptions approved in Amendment 16, several sectors requested one or more additional exemptions from the Northeast multispecies regulations as specified in their sector Operations Plans. Requested exemptions are presented in Table 3.3.2-1.

Some of these exemptions were sector-specific exemptions previously approved by NMFS for FY 2010 sectors in the final rule implementing FY 2010 sector Operations Plans and the final rule to implement addenda to 17 FY 2010 sector Operations Plans. However, FY 2011 sectors must again request exemptions that were approved in FY 2010; so that each can be evaluated using updated information. In general, NMFS approved the sector specific-exemptions for FY 2010 if they were effort control measures that are no longer necessary for sectors because sectors are restricted to an ACE for each

[2] NMFS is granting year-round access to the Eastern U.S./Canada Area for yellowtail flounder as stipulated, but not specified, in Amendment 16.

[3] Amendment 16 would exempt Sectors from all rolling closures except for: Blocks 124 and 125 in April; Blocks 132 and 133 in April-May; Block 138 in May; Blocks 139 and 140 in May-June; and Blocks 145, 146,147, and 152 in June.

Table 3.3.2-1
Sector-specific Exemptions Requested for FY 2011

Exemption	SHS 1	SHS 3	TSS	PCS	FGS	NCCS	NEFS 2	NEFS 3	NEFS 4	NEFS 5	NEFS 6	NEFS 7	NEFS 8	NEFS 9	NEFS 10	NEFS 11	NEFS 12	NEFS 13	MPBS
120 day Gillnet Block	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
20 day Spawning Block	X	X	X	X	X	X		X		X	X	X	X		X	X	X	X	
Gillnet Limit	X	X	X	X	X	X		X		X	X	X	X		X	X	X	X	
Prohibition on a Vessel Hauling another Vessel's Gillnet Gear	X	X	X	X	X	X		X			X	X	X		X	X	X		
50-net Limit with DAS	X	X	X		X	X		X			X	X	X		X	X	X	X	
Limit on # of Hooks	X	X	X	X	X	X		X			X	X	X		X	X	X		
DAS Leasing Size and HP Restrictions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
GOM Haddock Sink Gillnet Program	X	X	X	X	X			X			X	X	X		X	X	X		
Prohibition on Discarding	X	X	X		X		X	X		X	X	X	X	X	X	X	X	X	
Access to GOM Rolling Closure Areas in May	X	X		X															
Access to GOM Rolling Closure Areas in June	X	X		X															
Prohibition on the Possession or Use of Squid or Mackerel in the CA I Hook Gear Haddock SAP					X														
Daily catch reporting by Sector Managers for Sector Participating in the CA I Hook Gear Haddock SAP					X														
GOM Haddock Sink Gillnet Program in May								X			X	X	X		X				
Prohibition on Pair Trawling											X	X	X	X	X			X	
Minimum Hook Size Requirements for Demersal Longline Gear						X													
5-inch mesh when targeting redfish							X			X	X	X	X	X	X			X	

Table 3.3.2-1 (continued)
Sector-specific Exemptions Requested for FY 2011

Exemption	SHS 1	SHS 3	TSS	PCS	FGS	NCCS	NEFS 2	NEFS 3	NEFS 4	NEFS 5	NEFS 6	NEFS 7	NEFS 8	NEFS 9	NEFS 10	NEFS 11	NEFS 12	NEFS 13	MPBS
250 x 40 cm Eliminator Trawl™							X			X	X	X	X	X	X			X	
Gear Requirements in the US/CA Area	X	X	X																
Requirement to Power a VMS While at the Dock			X																
All DSM and Roving Monitoring Requirements					X		X	X		X	X	X	X	X	X	X	X	X	
DSM Requirements for Directed Monkfish, Skate, and Dogfish Trips						X	X	X		X	X	X	X	X	X			X	
DSM Requirements for Jig Vessels						X													
DSM Requirements for Hook Vessels When the Sector Has Caught Less Than 10,000 lbs of Groundfish per Year						X													
DSM Requirements in May when Fishing in Several Mid-Atlantic NMFS Statistical Areas											X	X	X		X	X	X	X	
DSM Requirements for Vessels Fishing West of 72°30' w. long	X	X	X																
DSM, Roving Monitoring and Hail Requirements for Hook-only or Handgear Vessels					X														
DSM, Roving Monitoring, and Hail Requirements for Vessels using Demersal Longline Gear, Jig Gear, and Handgear while Targeting Spiny Dogfish in Massachusetts State Waters of NMFS Statistical Area 521					X														
DSM Requirements when a trip has been monitored by either an At-Sea Monitor or Fishery Observer					X														

Table 3.3.2-1 (continued)
Sector-specific Exemptions Requested for FY 2011

Exemption	SHS 1	SHS 3	TSS	PCS	FGS	NCCS	NEFS 2	NEFS 3	NEFS 4	NEFS 5	NEFS 6	NEFS 7	NEFS 8	NEFS 9	NEFS 10	NEFS 11	NEFS 12	NEFS 13	MPBS
The Requirement to Delay Offloading due to the Late Arrival of the Assigned Monitor					X														
Prohibition on Offloading of Non-Allocated Species Prior to the Arrival of the Monitor	X	X																	

groundfish stock, which limits overall fishing mortality. These exemptions were previously approved for sectors to increase the operational flexibility of sector vessels and to increase profit margins of sector fishermen.

In addition to those exemptions requested and approved for FY 2010, sectors have requested novel exemptions for FY 2011, which have not been previously considered.

If Alternative 1 is approved, each sector-specific exemption may be approved or disapproved independently of the other exemptions.

1. 120-Day Block Requirement Out of the Fishery for Day Gillnet Vessels

The 120-Day block out requirement was implemented in 1997 under FW 20 to the FMP (61 FR 55774, May 1, 1997) to help ensure that management measures for Day gillnet vessels were comparable to effort controls placed on other fishing gear types. Regulations at 50 CFR § 648.82(j)(1)(ii) require that each Northeast multispecies gillnet vessel declared into the Day gillnet category take 120 days out of the non-exempt gillnet fishery. Each period of time taken must be a minimum of 7 consecutive days, and at least 21 of the 120 days must be taken between June 1 and September 30.

Sectors have requested that their Day gillnet vessels be exempt from the requirement. The exemption is intended to increase landings per trip by allowing sectors to shift fishing effort throughout the year.

2. 20-Day Spawning Block

The 20-Day spawning block was developed as a mortality-control measure; it also provides protection to spawning aggregations. Regulations at § 648.82(g) require vessels to declare themselves out of the Northeast multispecies DAS program for a 20-day period each calendar year between March 1 and May 31, when spawning is most prevalent in the Gulf of Maine.

Sectors have requested that their vessels be exempt from the requirement. The exemption is intended to increase landings per trip by allowing sectors to shift fishing effort throughout the year.

3. Limitation on the Number of Gillnets for Day Gillnet Vessels

Current gear restrictions in the groundfish regulated mesh areas (RMA) restrict Day gillnet vessels from fishing more than: 100 gillnets (of which no more than 50 can be roundfish gillnets) in the GOM RMA (§ 648.80(a)(3)(iv)); 50 gillnets in the GB RMA (§ 648.80(a)(4)(iv)); and 75 gillnets in the Southern New England and Mid-Atlantic RMAs (§ 648.80(b)(2)(iv) and § 648.80(c)(2)(v), respectively). To enforce these regulations, either one or two tags must be attached to each gillnet (depending on the type of net and RMA fished). These restrictions were implemented in 1996 under Amendment 7 and revised in Amendment 13 to prevent an uncontrolled increase in the number of nets being fished which would undermine the applicable DAS effort controls.

Sectors have requested that their Day gillnet vessels be exempt from gillnet limits. If approved, Day gillnet vessels in the applicable sectors would be able to use up to 150 nets total regardless of RMA and could mark their gear with one tag per net. The exemption is intended to increase landings per trip.

4. Prohibition on a Vessel Hauling another Vessel's Gillnet Gear

Current regulations prohibit one vessel from hauling another vessel's gillnet gear (§§ 648.14(k)(6)(ii)(A) and 648.84). The regulations facilitate the enforcement of existing regulations as a single vessel is associated with each set of gear. Sectors have requested an exemption to the rules

prohibiting hauling another vessels gear. The exemption would allow fishermen from within the same sector to haul each other's gillnet gear. However, all vessels participating in "community" fixed gear would be jointly liable for any violations associated with that gear.

5. Limitation on the Number of Gillnets that May be Hauled on George's Bank When Fishing Under a Groundfish/Monkfish DAS

The number of gillnets that may be hauled on Georges Bank when fishing under a groundfish/monkfish DAS is limited by regulations at § 648.80(a)(4)(iv) which prohibit Day gillnet vessels fishing on a groundfish DAS from possessing, deploying, fishing, or hauling more than 50 nets on Georges Bank. The limit was implemented as a groundfish mortality control under Amendment 13.

Sectors have requested an exemption to Georges Bank net hauling limits. The exemption would not permit the use of additional nets; it would allow nets deployed by sector vessels in accordance to the Monkfish FMP, to be hauled more efficiently by vessels dually permitted under both FMPs. The exemption is intended to increase landings per trip.

6. Limitation on the Number of Hooks that may be Fished

Current regulations (§ 648.80) prohibit vessels from fishing or possessing more than 2,000 rigged hooks in the GOM RMA, more than 3,600 rigged hooks in the GB RMA, more than 2,000 rigged hooks in the SNE RMA, or 4,500 rigged hooks in the MA RMA. This measure, designed to control fishing effort, was initially implemented through an interim action (67 FR 50292, August 1, 2002) and made permanent through Amendment 13.

Sectors have requested that their vessels be exempt from hook limits. This exemption is intended to increase landings per trip by increasing the number of hook days associated with each trip.

7. Length and Horsepower Restrictions on DAS Leasing

While Amendment 16 exempts sector vessels from the requirement to use Northeast multispecies DAS to harvest groundfish, some sector vessels would still need to use Northeast multispecies DAS under specific circumstances, for example, when fishing for monkfish. Currently multispecies vessels are allowed to lease DAS from other vessels provided both vessels are similar in length and horsepower. The DAS leasing restrictions were imposed as a means of maintaining the character of the fleet.

Sectors have requested an exemption to allow DAS leasing within and between approved sectors. This leasing would occur for the purpose of complying with the Monkfish FMP and unrestricted by vessel characteristics.

8. GOM Sink Gillnet Mesh Exemption

In the Record of Decision (ROD) for Amendment 16, NMFS did not approve the GOM Haddock Sink Gillnet Pilot Program. The pilot program would have allowed all limited access Northeast multispecies vessels to target haddock in the Gulf of Maine while using stand-up sink gillnets consisting of 6-inch mesh (limited to 30 nets for Day gillnet vessels) from January through April of each year. The pilot program was not approved because the catch of haddock could not be substantially increased without the possibility of also increasing mortality on GOM cod and pollock, stocks that, at that time, required reductions in fishing mortality in order to rebuild under established rebuilding programs in the FMP.

Sectors have requested that their vessels, when complying with other relevant regulations, be allowed to deploy stand-up sink gillnets consisting of 6-inch mesh in the GOM from January 1, 2012 through April 30, 2012. The exemption is intended to increase haddock catch rates.

9. Prohibition on Discarding

Regulations at § 648.87 (b)(1)(v)(A) prohibit sector vessels from discarding any legal-sized fish of allocated stocks. The intent of this regulation is to ensure that sector ACE is accurately monitored

Throughout FY 2010 sector representatives and other members of industry have raised concerns about the operational and safety issues posed to sector vessels. As a result of complying with the prohibition on discarding sector vessels have had to make space on deck to store catch that may be damaged or contaminated separate from food grade product, taking up valuable deck and hold space while potentially posing safety issues. Once in port, the cost of disposing unmarketable fish, which varies according to the amount and condition of the fish, has typically been absorbed by dealers. The burden to the dealer is in labor and record keeping (approximated at 15 minutes per offload), and may be partially offset as dealers often sell some of the damaged fish as bait. While it is not expected or likely, if high discard trips became a recurring event, the dealer may be inclined to pass off some of the costs to the fisherman.

At their June 16, 2010 meeting, the Groundfish Oversight Committee of the NEFMC expressed their desire for a solution to the discarding issue which could be implemented within FY 2010. NMFS concluded the most efficient and effective manner to address the discarding issue was to offer an exemption to the sectors in FY 2010.

Sectors have requested an exemption to the discarding rule for FY 2011; the exemption is intended to increase operational safety.

10. Access to GOM Rolling Closure Areas in May

GOM time/area closures were originally implemented to reduce harbor porpoise bycatch in the GOM sink gillnet fishery under FW 4 (59 FR 26972, 05/25/94). Closure areas and timing were determined based on the distribution of sink gillnet fishing activity and the harbor porpoise seasonal and spatial distribution. Under emergency rules contained in Amendment 5 (59 FR 9872, 03/01/94), which were superseded by rules contained in Amendment 7 (61 FR 27710, 05/31/96), area closures were expanded to include all gear types to protect particular concentrations of groundfish, including spawning adults and juveniles. FW 25 (63 FR 15326, 03/31/98) modified the closed areas to specifically reduce fishing effort on GOM cod stocks. Establishing the closures was intended to reduce fishing activity on cod spawning aggregations (NEFMC 2009a). Amendment 13 (68 FR 74939, 12/29/03) implemented closures to reduce fishing mortality on several groundfish stocks and did not explicitly consider spawning activity (NEFMC 2009a). Regulations at § 648.81(f)(1)(iii) require that no fishing occur in Rolling Closure Area III between May 1 and May 31. Under Amendment 16 (75 FR 18262, 4/9/10), sectors were exempt from some 30-minute blocks of these rolling closure areas, but some blocks remained closed to sector members. Amendment 16 did not exempt sector vessels from specific closures because, while the original intent of the closures was not to protect spawning aggregations, some spawning does occur in these areas and the closures reduced the potential for impacts to these aggregations.

Sectors have requested an exemption that would allow their vessels to fish in Blocks 138 and 139 during the May GOM rolling closures. The exemption is intended to increase catch rates by allowing effort to be shifted in time and space. Exempt vessels would still be subject to additional GOM Rolling Closure Areas, which are specifically designed to reduce fishing effort on GOM groundfish stocks and to reduce marine mammal bycatch.

11. Access to GOM Rolling Closure Areas in June

As described above, the GOM rolling closures were implemented under various actions (FW 4, Amendment 5, Amendment 7, FW 25, and Amendment 13) to reduce fishing effort of GOM cod stocks and to reduce interaction with protected resources. Sectors were universally exempted from some of these rolling closure areas under Amendment 16 (75 FR 18262, 4/9/10). Regulations at § 648.81(f)(1)(iii) also require that no fishing occur in Rolling Closure Area IV (which includes blocks 139, 145, 146) between June 1 and June 30.

Sectors have requested an exemption that would allow fishing within Blocks 139, 145, and 146 in June. The exemption is intended to increase catch rates and profitability by allowing effort to be shifted in time and space. Exempt vessels would still be subject to additional GOM Rolling Closure Areas, which are specifically designed to reduce fishing effort on GOM groundfish stocks and to reduce marine mammal bycatch.

12. Prohibition on the Possession or Use of Squid or Mackerel in the Closed Area I Hook Gear Haddock Special Access Program

FW 40A (50 FR 67780, 11/19/04) and Framework 41 (50 FR 54302, 9/14/05) implemented and expanded the Closed Area I Hook Gear Haddock SAP to provide additional opportunity for vessels to target a relatively healthy groundfish stock, in order to mitigate the economic and social impacts resulting from the effort reductions required by Amendment 13. Amendment 13 clarified that closed areas provide direct benefits to managed species, including the protection of spawning fish and reductions in fishing mortality that may remove the need for other management measures. In addition, similar benefits are indirectly afforded to stocks that are not managed by the FMP. Vessels issued a valid limited access Northeast multispecies DAS permit are eligible to participate in the Closed Area I Hook Gear Haddock SAP May 1 through January 31 of each fishing year, to allow the targeting of GB haddock. Authorized vessels may fish in the Closed Area I Hook Gear Haddock SAP provided that vessels comply with the regulations at § 648.85(7).

Bait restrictions were originally adopted by the NEFMC for this SAP in FW 41 but were inadvertently omitted from the regulations implemented by the final rule for that action. Amendment 16 (75 FR 18262, 4/9/10) implemented bait restrictions to reflect these provisions adopted by the Council in FW 41. Under these regulations, participating vessels are prohibited from using squid or mackerel for bait, or even possessing squid or mackerel on board the vessel.

The regulations were based on data from an experimental fishery which demonstrated that using squid as bait increased catch rates of cod (a stock in need of additional protection), but the data did not show a statistical difference in haddock catch as a result of bait type. While data did not definitively demonstrate similar findings for using mackerel as bait, the use of mackerel in this area was prohibited as a precautionary measure. The prohibition of the use or possession of these bait types is intended to limit cod catches in the SAP.

A sector has requested an exemption to regulations prohibiting the use or possession of squid or mackerel in the Closed Area I Hook Gear Haddock SAP. This exemption would allow the sector to use squid or mackerel as bait while operating in the Closed Area I Hook Gear Haddock SAP which is intended to increase catch rates.

13. Daily catch reporting by Sector Managers for Sector Participating in the Closed Area I Hook Gear Haddock Special Access Program

Sector vessels are required to submit daily reports to the Sector Manager while fishing in the Closed Area I Hook Gear Haddock SAP, which the Sector Manager compiles into a report to NMFS (§

648.85(b)(7)(v)(D)). As discussed further in Section 3.5, sectors are prohibited from requesting exemptions from reporting requirements, with the exception of SAP reporting requirements.

AA sector is requesting an exemption that would relax the requirement that vessels submit a daily catch report to the Sector Manager. Instead, the sector would require each vessel to submit their own report to NMFS via VMS. The intent is to reduce the administrative burden on the Sector Manager. Further, because sector vessels must already submit VMS catch reports for operating in one or more Broad Stock Areas on the same trip, requiring similar reporting for the Closed Area I Hook Gear Haddock SAP would maintain consistency.

14. Extension of the GOM Sink Gillnet Mesh Exemption Through May

In the ROD for Amendment 16, NMFS did not approve the GOM Haddock Sink Gillnet Pilot Program. The pilot program would have allowed all limited access Northeast multispecies vessels to target haddock in the Gulf of Maine while using stand-up sink gillnets consisting of 6-inch mesh (limited to 30 nets for Day gillnet vessels) from January through April of each year. The pilot program was not approved because the catch of haddock could not be substantially increased without the possibility of also increasing mortality on GOM cod and pollock, stocks that, at that time, required reductions in fishing mortality in order to rebuild under established rebuilding programs in the FMP.

In the event that the GOM Sink Gillnet program exemption (exemption 8) is approved, sectors have requested that the exemption be extended through May (one additional month). This would allow sector vessels, when complying with other relevant regulations, to deploy stand-up sink gillnets consisting of 6-inch mesh in the Gulf of Maine in May. The exemption is intended to increase haddock catch rates.

15. Prohibition on Pair Trawling

The prohibition on pair trawling for groundfish was first authorized under an emergency interim rule (59 FR 26, 1/3/94) and then permanently instituted under Amendment 5 (59 FR 9872, 3/1/94). This prohibition was enacted as a mortality control through effort reduction due to the highly efficient nature of pair trawling. At the time the prohibition was implemented the Ruhle trawl, a more selective trawling method (See exemption 18), had not yet been approved for use. Regulations for this prohibition can be found at § 648.80(g)(3).

Sectors have requested that their vessels be exempted from the pair trawl prohibition when using the more selective Ruhle Trawl (Eliminator Trawl™). The intent of the exemption is to increase haddock catch rates.

16. Minimum Hook Size Requirements for Demersal Longline Gear

Minimum hook sizes for demersal (bottom) longlines were implemented to achieve specific fishing mortality reductions. Amendment 13 (69 FR 22906, 4/27/04) established a minimum hook size of 12/0 circle hooks for demersal longlines when fishing under a Northeast multispecies DAS or fishing under the small-vessel permit in the GOM, GB, or SNE RMAs. The minimum hook size was intended to both reduce the catch of small fish and to improve their survival.

A sector has requested that their vessels be allowed to use any size hook for demersal longlines. The intent of the exemption is to increase catch rates of flatfish, to allow hook vessels to more effectively harvest their sector's flatfish allocations.

17. Exemption from the 6.5-inch min mesh size requirement, allowing trawl vessels to utilize 5-inch mesh size for targeted redfish trips

Minimum mesh size restrictions (§ 648.80(a)(3)(i), (a)(4)(i), (b)(2)(i), (c)(2)(i)) were implemented under Amendment 13 (69 FR 22906, 4/27/04) in conjunction with other management measures, including FW 42, to reduce overall mortality on groundfish stocks, change the selection pattern of the fishery to target larger fish, improve survival of sublegal fish, and allow sublegal fish more opportunity to spawn before entering the fishery.

FW 42 set requirements for trawl codends in the SNE RMA to be made of either square or diamond mesh no smaller than 6.5 inches. The minimum mesh requirements implemented by FW 42 are intended to reduce discards of yellowtail flounder thereby increasing the rate of yellowtail flounder rebuilding (NEFMC 2006). Since yellowtail flounder stock was not rebuilding quickly, even small improvements in rebuilding were considered important (NEFMC 2006).

Sectors have requested an exemption that would allow their vessels to use 5-inch mesh codends to target redfish. The exemption is intended to increase the catch rate of redfish. The sectors making the request have proposed that sector vessels participating in the directed redfish fishery be required to declare their intentions to the Sector Manager and NMFS at least 48 hours prior to departure and that observers would be present on all declared trips to monitor catch and bycatch. In addition, daily catch reports would be submitted to the Sector Manager to ensure that all catch is harvested within the sector's ACE.

18. Ruhle and Haddock Separator Requirements to Utilize the 98.4 in x 15.7 in (250 cm x 40 cm) Eliminator Trawl™

Vessels fishing in the Regular B DAS Program and the Eastern US/CA Haddock SAP must use approved trawl gear to reduce catch of certain groundfish stocks of concern. FW 42 (71 FR 62156; 10/23/06) authorizes the Regional Administrator to approve gear types for use in these programs if research is available to demonstrate a reduction in the catch of groundfish stocks of concern.

The Eliminator Trawl™ is designed to capture haddock while reducing the catch of cod and other groundfish stocks of concern. NMFS issued standards (72 FR 72965, 12/26/07) by which new gears could be considered for approval. NMFS approved the use of the Ruhle trawl in these areas (a.k.a Eliminator Trawl™) (73 FR 40186, 7/14/08) based on the net configuration as described in *Bycatch Reduction in the Directed Haddock Bottom Trawl Fishery* (Beutel et al. 2006).

This exemption would authorize the use of an Eliminator Trawl™ with a fishing circle of 250 x 40 cm and larger (a smaller, experimental version of the previously tested Eliminator Trawl™). Sectors have requested approval for the 250 x 40 cm Eliminator Trawl™ for use in all areas and for all purposes for which the Eliminator Trawl™ has been approved (including but not limited to Eastern US/Canada Area SAP). This exemption would facilitate the use of the Eliminator Trawl™ technology by smaller vessels which is intended to increase haddock landings.

19. Gear Requirements in the US/Canada Management Area

In the US/Canada Management Area, both the U.S. and Canada coordinate the management of several transboundary fisheries stocks (including GB cod, GB haddock, and GB yellowtail flounder). The US/Canada area is split into Eastern and Western sections. GB cod and GB haddock generally occur in the Eastern US/Canada Area while GB yellowtail flounder occur across the full US/Canada Management Area. The management objective for these shared stocks is to achieve but not exceed the US allocation fraction as established under the US/Canada Sharing Agreement (NEFMC 2003).

Amendment 13 intended to constrain U.S. catches of the three shared stocks to ensure that they will not exceed the U.S. allocations (69 FR 22906, 4/27/04). To constrain catches, and to minimize

catches of cod (the stock which tends to reach its TAC first), vessels are required to use gear that is designed to minimize the catch of cod. Amendment 13 implemented the restriction on trawl gear to allow the use of only the haddock separator trawl and the flounder trawl net in the Eastern US/Canada Area. Use of the Ruhle trawl, which also minimizes cod catch, was later approved through an in-season action in 2008 (73 FR 53158, 8/15/08), extended through an interim rule in 2009 (74 FR 17030, 4/13/09; 74 FR 55158, 10/27/09), and made permanent by Amendment 16.

Because each of these three gear types are designed to affect cod selectivity, and because the cod TAC is specific to the Eastern US/Canada Area only, application of this gear requirement is not necessary for the Western US/Canada Area (69 FR 22906, 4/27/04).

Sectors have requested an exemption to allow their vessels to use any type of trawling gear while fishing in the US/Canada area to increase catch rates of allocated stocks.

20. Requirement to Power a VMS While at the Dock

A VMS is used for vessels to submit area declarations, hail reports, and catch information to enable the monitoring of catch, DAS use, gear requirements, and trip limits (75 FR 18262, 4/9/10). In accordance with § 648.10, groundfish vessels are required to have an approved and operational VMS on board in order to fish on a Northeast multispecies DAS, on a sector trip, or when a Common Pool vessel has declared their intent to fish in more than one broad stock area on the same trip. Once a multispecies vessel declares its first DAS or sector trip, it must use a properly functioning VMS for the remainder of the fishing year. A limited access Northeast multispecies vessel may power down its VMS only when done in accordance with the power down rules specified at § 648.10(c)(2) which allow powering down if the vessel will be out of the water for more than 72 consecutive hours, or if the vessel does not participate in any fisheries (and the vessel will not move from the dock/mooring) for a minimum period of 30 consecutive days. This powering down of the VMS requires a letter of exemption from the NMFS Regional Administrator.

Because sector vessels would not be fishing for groundfish under DAS or groundfish trip limits, sectors have requested an exemption from keeping the VMS units powered while tied to the dock or on a mooring. This exemption is intended to reduce costs and energy consumption.

21. All DSM and Roving Monitoring Requirements

Amendment 13 adopted the concept that sectors are responsible for monitoring sector catch, but provided few details for that requirement. Amendment 16 formalized this requirement, by specifying that sector Operations Plans must detail how a sector will monitor its catch to ensure that sector catch does not exceed the sector allocation; including developing and implementing an independent third-party Dockside Monitoring Program (DSM) for monitoring landings from sector trips and utilization of ACE. The DSM program was implemented to ensure that catch is accurately documented and that sectors are monitored equally, for the purpose of bolstering enforcement efforts.

The GB Fixed Gear Sector and Northeast Fishery Sectors II-III and V-XIII have requested an exemption from the DSM requirements, as specified at § 648.87(b). The GB Fixed Gear Sector contends that this program has added little value to the sectors' infrastructure or sector members' businesses. Additionally, the sector notes that ambiguities with the DSM program, such as the failure to require confirmation that all landings have been offloaded, the fact that NMFS does not utilize or cross-reference this data, and the ability of fishermen to alter behavior when notified of a monitoring event, prevent the program from meeting its stated objectives. The GB Cod Fixed Gear Sector also asserts that NMFS has yet to request any dockside or roving monitoring reports to validate or verify a landing event, and therefore the requirement is not being utilized as an enforcement tool. The Northeast Fishery Sectors

contend that the implementation of the DSM program has not met the stated objectives of the DSM program in an economically efficient manner. They contend that DSM was meant as a means for sector managers to verify catch, and that the Northeast Fishery Sector managers do not utilize DSM reports, and instead opt to utilize dealer weigh out slips for this purpose.

22. DSM Requirements for Directed Monkfish, Skate, and Dogfish Trips

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. Unless a vessel is fishing in an exempted fishery, directed monkfish, skate and dogfish trips are included as sector trips because a groundfish declaration is required (NE multispecies DAS or non-DAS sector trip), since gear utilized on such trips is capable of catching groundfish and groundfish retention is permitted.

The Northeast Coastal Communities Sector, and Northeast Fishery Sectors II-III, V-X, and XIII have requested an exemption from DSM while on directed fishing trips on monkfish, skate, and/or dogfish. Specifically, the Northeast Coastal Communities Sector has requested an exemption from DSM on dogfish trips when vessels are utilizing hook gear. The sector contends that FY 2010 observer data shows little groundfish bycatch, making the cost of DSM per pound of groundfish too low to support it. The Northeast Fishery Sectors have requested an exemption on all directed monkfish, skate, and dogfish trips, contending that the implementation of DSM in FY 2010 has not met the objectives stated in Amendment 16 in an economically efficient manner.

23. DSM Requirements for Jig Vessels

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. Jigging, with respect to the NE multispecies fishery, is defined at § 648.2 as fishing with handgear, handline, or rod and reel using a jig, which is a weighted object attached to the bottom of the line used to sink the line and/or imitate a baitfish, which is moved with an up and down motion. This jig gear is not exempted gear, and therefore sector trips utilizing this gear are required to have DSM.

The Northeast Coastal Communities Sector requested this exemption, noting that vessels utilizing this gear type are able to target cod with little bycatch of other allocated groundfish species and that the cost of monitoring these trips is disproportionately high, due to the comparatively small amount of catch that this gear type yields.

The Council, through FW 45, proposes to remove DSM requirements in FY 2011 for Common Pool Handgear A or B permitted vessels, as well as for small vessel permitted vessels, because small quantities of groundfish landed by these permit categories would make monitoring such trips uneconomical.

24. DSM Requirements for Hook Vessels When the Sector Has Caught Less Than 10,000 lbs (4,535.9 kg) of Groundfish per Year

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. The Northeast Coastal Communities Sector has requested an exemption from DSM requirements when the sector has caught less than 10,000 lb (4,535.9 kg) of groundfish per year, noting that in FY 2010, trips by sector vessels have thus far yielded few groundfish, and due to the remote location of its ports, DSM has been cost prohibitive. The sector proposes a 10,000-lb (4,353.9-kg) threshold for the year, above which DSM would be required. Catch could be verified through a comparison of dealer data, vessel trip reports, and VMS catch reports. The Sector Manager proposes to notify NMFS when 8,000 lb (3,628.7 kg) of groundfish have been caught, and would specify a DSM program at that time. This exemption would provide greater financial flexibility to sector members.

25. DSM Requirements in May when Fishing in Certain Mid-Atlantic (MA)Areas

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. Upon receiving exemption requests to the DSM requirements for vessels fishing in southern New England and Mid-Atlantic waters, the Regional Administrator, in a September 1, 2010 letter to the Council, requested that the Council consider establishing a geographic boundary outside of which DSM would not be required. At its November 18, 2010 meeting, the Council considered this request, and supported removal of DSM from the list of prohibited exemptions to allow sectors to requested geographic- and gear-based exemptions from DSM.

Northeast Fishery Sectors VI-VIII and X-XIII have requested an exemption from DSM in May and June on non-groundfish directed trips that occur in the following NMFS statistical areas: 615, 616, 621, 622, 623, 625, 626, 627, 631, 632, 633, 635, 637, and 638. The sectors contend that historical data indicates that little groundfish bycatch has been observed in these areas, and monitoring of such trips is not a beneficial use of financial resources.

26. DSM Requirements for Vessels Fishing West of 72°30' W. long.

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. The Regional Administrator, in a September 1, 2010 letter to the Council, requested that the Council consider establishing a geographic boundary to prescribe where DSM requirements apply, as explained in exemption number 25.

Sustainable Harvest Sectors 1 and 3, and the Tri-State Sector have requested an exemption from DSM requirements for vessels fishing west of 72°30' W. long., noting that historical data indicate that a small amount groundfish bycatch has been observed in these areas, and monitoring of such trips is not a beneficial use of financial resources.

27. DSM, Roving Monitoring and Hail Requirements for Hook-only or Handgear Vessels

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. Hook gear is defined at § 648.2, as fishing gear that is comprised of a hook, or hooks, attached to a line and includes, but is not limited to, longline, setline, jigs, troll line, rod and reel, and line trawl. Handgear at § 648.2, with respect to the NE multispecies fishery, is defined as handline gear, rod and reel gear, and tub-trawl gear. Neither hook gear nor handgear, as defined at § 648.2 are exempted gear, and therefore sector trips utilizing these gear types are required to have DSM.

The GB Cod Fixed Gear Sector requested this exemption, noting that vessels utilizing this gear type are among the smallest operators and have historically landed small amounts of groundfish. The sector contends that the proceeds from these trips may be less than the cost of deploying a dockside or roving monitor, making the cost of monitoring these vessels disproportionately high relative to the rest of the groundfish fleet. The sector also requests that if this exemption is granted, that these vessels also be exempt from hail requirements. Although FW 45 proposes to remove DSM requirements from the list of regulations sectors may not be exempt from, hail requirements would remain reporting requirements, and therefore may not be exempted.

28. DSM, Roving Monitoring, and Hail Requirements for Vessels Using Demersal Longline Gear, Jig Gear, and Handgear while Targeting Spiny Dogfish in Massachusetts State Waters.

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. Unless a vessel is fishing in an exempted fishery, directed dogfish trips are considered sector trips because a groundfish declaration is required (NE multispecies DAS or sector trip), since gear utilized on such trips is capable of catching groundfish and groundfish retention is permitted.

The GB Cod Fixed Gear Sector has requested this exemption, asserting that its FY 2010 sector data indicate small amounts of groundfish bycatch in this area. The sector contends that deploying monitors on such trips provides little value to a program designed to monitor landings of regulated groundfish.

29. DSM Requirements when a Trip has been Monitored by Either an At-Sea Monitor or Fishery Observer

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements.

The GB Cod Fixed Gear Sector has requested an exemption from DSM requirements when a trip has been monitored by an At-Sea Monitor or Fishery Observer, noting that requiring both at-sea monitoring and DSM is redundant, as the goal of both programs is catch verification. The sector claims that requiring DSM on trips that receive monitoring at-sea is overly burdensome for sector members. At its November 18, 2010, meeting, the Council voted that NMFS prioritize DSM for trips that did not receive an At-Sea Monitor.

30. The Requirement to Delay Offloading Due to the Late Arrival of the Assigned Monitor

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. The regulations at § 648.87(b)(5)(i)(C) specify that a vessel may not offload any fish from a trip that was selected to be observed by a dockside/roving monitor until the dockside/roving monitor assigned to that trip is present. The regulations implementing Amendment 16 require each sector to develop, implement, and fund a DSM program, including the selection and hiring of approved monitoring provider(s). Because each sector contracts directly with monitoring provider(s), the sector has the ability, and responsibility, to resolve this issue directly with its contracted provider(s).

The GB Cod Fixed Gear Sector has requested a partial exemption from the above regulation, allowing vessels to begin offloading catch if a dockside or roving monitor is late. The sector argues that it is the responsibility of the monitor to ensure timely arrival at monitoring events, and that delays have negative social and economic impacts for the sector member being observed, for the dealer, and for other members that must also wait to offload.

31. Prohibition on Offloading of Non-Allocated Species Prior to the Arrival of the Monitor

As explained in exemption number 21, Amendment 16 formalized dockside monitoring requirements. The regulations at § 648.87(b)(5)(i)(C) specify that a vessel may not offload any fish from a trip that was selected to be observed by a dockside/roving monitor until the dockside/roving monitor assigned to that trip is present.

Sustainable Harvest Sectors 1 and 3 have requested an exemption from the prohibition on offloading non-allocated species prior to the arrival of the monitor, to allow for the offload of non-allocated species prior to the arrival of a monitor. The sectors contend that, on occasion, dealers request vessels to offload non-allocated stocks, such as lobster, prior to the offload of groundfish; this exemption would give additional flexibility to sector members and dealers for the processing of catch. The sectors propose to require its vessels to file VMS catch reports and/or a trip end hail prior to crossing the demarcation line to account for total catch. Additionally, the sectors would require captains to sign an affidavit stating that no allocated stock was offloaded during these instances. The DSM standards require catch of all stocks to be monitored because sector discard ratios are calculated based on total catch, not groundfish catch only.

3.3.2.1 No Action Alternative 3

Under the No Action for Alternative 3, one or more of the sector -specific exemptions would not be approved. The No Action could apply independently to each exemption. If the No Action is selected for a requested exemption vessels would continue to be required to follow current regulations.

3.4 ALTERNATIVE 4 - EXEMPTIONS TO BE ANALYZED FOR STATE PERMIT BANK SECTORS ONLY

As described in Section 3, only the Maine Permit Banking Sector (MPBS) is being considered for approval in FY 2011. The MPBS has also requested the sector-specific exemption from DAS leasing size restrictions, as described in Section 3.3. The length and horsepower restriction on DAS leasing exemption was approved for sectors for FY 2010. If Alternative 2 is approved, the exemption for the MPBS may be approved or disapproved. Below is a description of this exemption.

1. Length and Horsepower Restrictions on DAS Leasing

As described in Section 3.3, Amendment 16 exempts sector vessels from the requirement to use Northeast multispecies DAS to harvest groundfish, but some sector vessels would still need to use Northeast multispecies DAS under specific circumstances, such as when fishing for monkfish or skates. Currently multispecies vessels are allowed to lease DAS from other vessels provided they meet the restrictions on vessel length and horsepower. The DAS leasing restrictions were imposed as a means of maintaining the character of the fleet.

The MPBS has requested an exemption to allow its sector vessels to lease DAS to vessels in eligible sectors without being limited by restrictions of the DAS Leasing Program on vessel size characteristics. The MPBS vessels would lease DAS to vessels in other sectors to use the DAS for the purpose of complying with the Monkfish and Skate FMPs, and maximizing their fishing opportunities. The MPBS Operations Plan has stipulated that the vessel length restrictions in the MOA between the State of Maine and NOAA would supersede this exemption request for those permits owned by the permit bank. Additionally, the sector Operations Plan states that the allocations associated with the permits owned by the two other entities will be leased to the Port Clyde Community Groundfish Sector. As discussed in Section 3.2, the State permit banks can be used to preserve fishing opportunities for small-scale fishermen operating in small, rural fishing ports, which may offset changes in fleet character that might otherwise result from an exemption from the DAS leasing vessel size restrictions.

3.4.1 No Action Alternative 4

Under the No Action for Alternative 4, the MPBS length and horsepower restriction on DAS leasing exemption would not be approved. If the No Action is selected for the requested exemption, the MPBS would continue to be required to follow current regulations when leasing DAS.

3.5 ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER ANALYSIS

Amendment 16 states that sectors cannot request exemptions from certain management measures including year-round closed areas, permitting restrictions, gear restrictions designed to minimize habitat impacts, and/or certain reporting requirements. Amendment 16 further specifies that sectors cannot request exemptions from regulations outside of the Northeast Multispecies FMP; § 648.87(c)(2)).

Given this guidance, several exemptions were considered but not carried forward. These included, but were not limited to, exemptions from internal NMFS policy or reporting requirements related to observer coverage, discard assumptions, and/or confidentiality as well as exemptions from

regulations outside the Northeast Multispecies FMP such as lobster or highly migratory species restrictions. In addition, exemptions disapproved for FY 2010 were not carried forward unless new information or data was provided for FY 2011.

3.5.1 Sector Roster Deadline

The exemption from the requirement to submit a sector roster was considered, but rejected, in this analysis. The requirement to submit a roster is integral to the formation of a sector, and must be submitted as part of the Operations Plan for the sector to be considered for approval. Therefore, these exemptions cannot be considered in this action. The deadline for submission of a roster is an administrative requirement implemented by NMFS, and NMFS has handled changes to the deadline as an administrative matter.

3.5.2 Definition of a Sector

The exemption from the requirement that a sector be comprised of at least three entities was considered, but rejected, in this analysis. The requirement for a sector to be comprised of at least three entities is integral to the formation of a sector, and must be demonstrated as part of the Operations Plan for the sector to be considered for approval. Therefore, this exemption cannot be considered in this action.

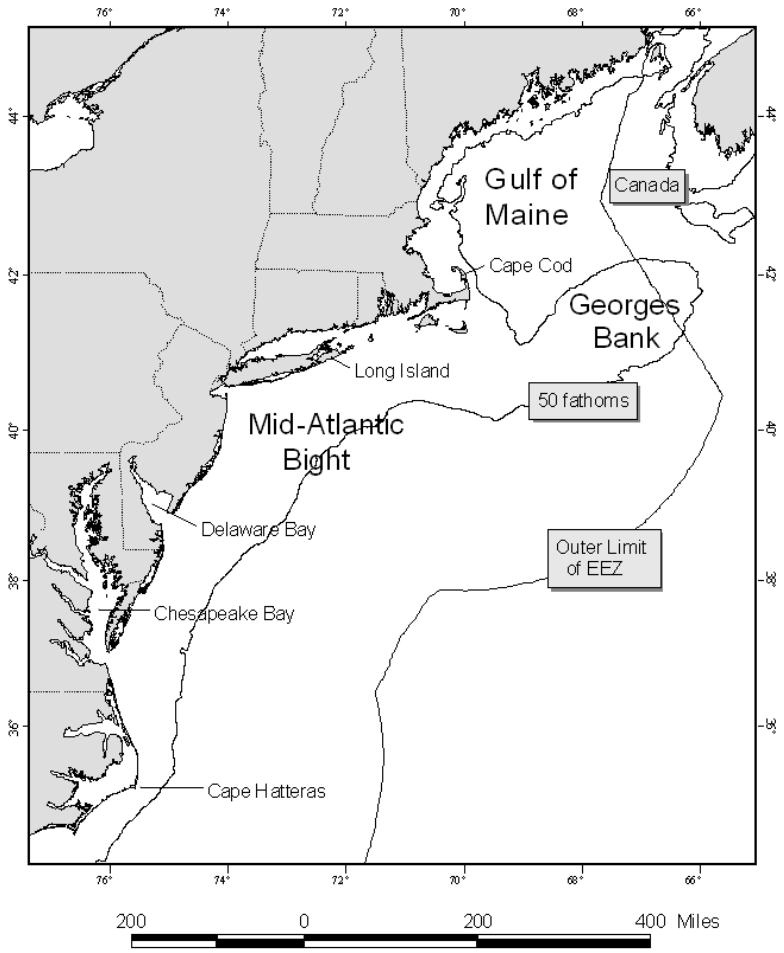
4.0 AFFECTED ENVIRONMENT

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

4.1 PHYSICAL ENVIRONMENT/HABITAT/EFH

The Northeast U.S. Shelf Ecosystem (Figure 4.1-1) has been described as including the area from the Gulf of Maine 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 seaward of the shelf, out to a depth of 6,562 feet (ft) [2,000 meters (m)]. Four distinct sub-regions comprise the NOAA Fisheries Northeast Region: the Gulf of Maine, Georges Bank, the southern New England/Mid-Atlantic region, and the continental slope. Since all sectors would primarily be fishing in the inshore and offshore waters of the Gulf of Maine, Georges Bank, and the southern New England/Mid-Atlantic 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 4.1-1 Northeast U.S Shelf Ecosystem

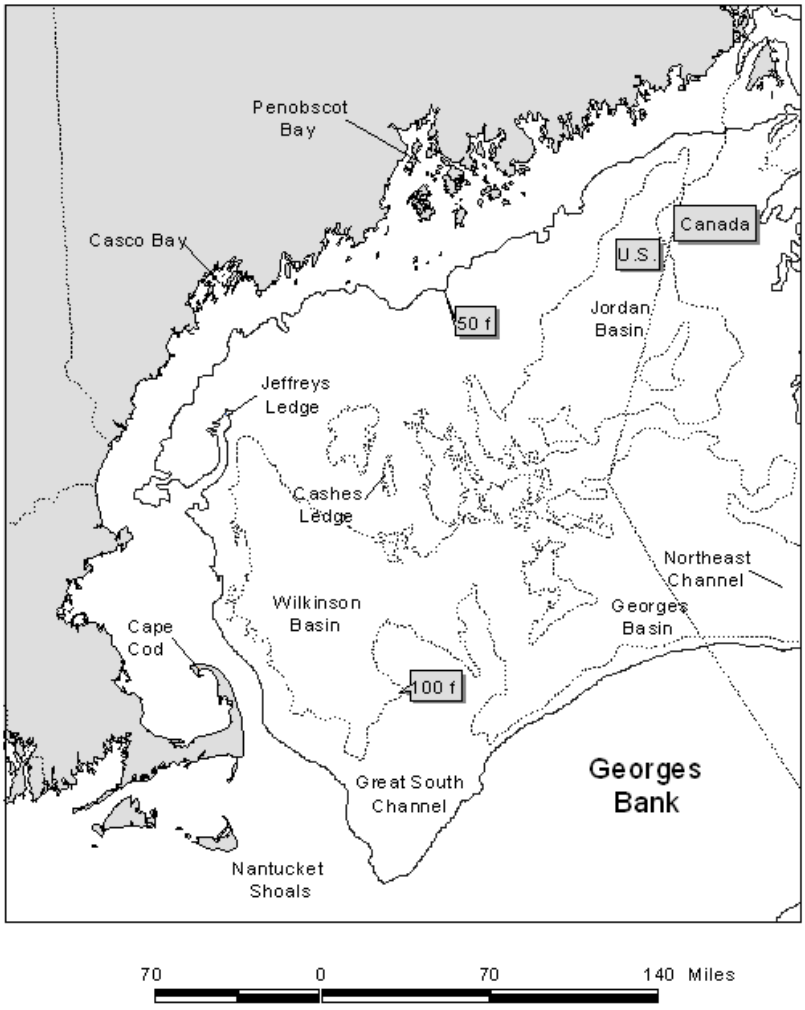


4.1.1 Affected Physical Environment

4.1.1.1 Gulf of Maine

The Gulf of Maine is 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 Georges Bank (Figure 4.1.1-1). The Gulf of Maine 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 820 ft (250 m), with a maximum depth of 1,148 ft (350 m) in Georges Basin, just north of Georges Bank. High points within the Gulf of Maine include irregular ridges, such as Cashes Ledge, which peaks at 30 (9 m) below the surface.

Figure 4.1.1-1 Gulf of Maine



The Gulf of Maine 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 Gulf of Maine 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 Gulf of Maine, 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,[4] sometimes with boulders, predominates others. Bedrock is the predominant substrate along the western edge of the Gulf of Maine, north of Cape Cod in a narrow band out to a water depth of about 197 ft (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

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

66 to 131 ft (20 to 40 m), except off eastern Maine where a gravel-covered plain exists to depths of at least 328 ft (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 Gulf of Maine 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 Gulf of Maine 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 Gulf of Maine 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 [< 197 ft (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 197 to 459 ft (60 to 140 m) within cold Gulf of Maine Intermediate Water:[5] 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 45 to 46 °F (7 to 8°C): fauna densities are not high, dominated by brittle stars and sea pens, and sporadically by tube-making amphipods; and
- Upper slope, mixed sediment of either fine muds or mixture of mud and gravel, water temperatures always greater than 46 °F (8°C): upper slope fauna extending into the Northeast Channel.

Two studies (Gabriel 1992, Overholtz and Tyler 1985) reported common[6] demersal fish species by assemblages in the Gulf of Maine and Georges Bank:

- Deepwater/Slope and Canyon: offshore hake, blackbelly rosefish, Gulf stream flounder;
- Intermediate/Combination of Deepwater Gulf of Maine-Georges Bank and Gulf of Maine-Georges Bank Transition: silver hake, red hake, goosefish (monkfish);
- Shallow/Gulf of Maine-Georges Bank Transition Zone: Atlantic cod, haddock, pollock;

[5] 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.

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

- Shallow water Georges Bank-southern New England: yellowtail flounder, windowpane flounder, winter flounder, winter skate, little skate, longhorn sculpin;
- Deepwater Gulf of Maine-Georges Bank: white hake, American plaice, witch flounder, thorny skate; and
- Northeast Peak/Gulf of Maine-Georges Bank Transition: Atlantic cod, haddock, pollock.

4.1.1.2 Georges Bank

Georges Bank is a shallow (10 to 492 ft [3 to 150 m depth]), elongated ((100 miles [mi] (161 kilometer [km] wide) by 20 mi (322 km long)) extension of the continental shelf that was formed during the Wisconsinian glacial episode (Figure 4.1-1). It is characterized by a steep slope on its northern edge and a broad, flat, gently sloping southern flank and has steep submarine canyons on its eastern and southeastern edges. It is characterized by highly productive, well-mixed waters and strong currents. The Great South Channel lies to the west. Natural processes continue to erode and rework the sediments on Georges Bank. It is anticipated that erosion and reworking of sediments by the action of rising sea level as well as tidal and storm currents reduce the amount of sand and cause an overall coarsening of the bottom sediments (Valentine and Lough 1991).

Bottom topography on eastern Georges Bank is characterized by linear ridges in the western shoal areas; a relatively smooth, gently dipping seafloor on the deeper, easternmost part; a highly energetic peak in the north with sand ridges up to 30 m high and extensive gravel pavement; and steeper and smoother topography incised by submarine canyons on the southeastern margin. The central region of Georges Bank is shallow, and the bottom is characterized by shoals and troughs, with sand dunes superimposed within. The area west of the Great South Channel, known as Nantucket Shoals, is similar in nature to the central region of Georges Bank. Currents in these areas are strongest where water depth is shallower than 164 ft (50 m). Sediments in this region include gravel pavement and mounds, some scattered boulders, sand with storm-generated ripples, and scattered shell and mussel beds. Tidal and storm currents range from moderate to strong, depending upon location and storm activity.

Oceanographic frontal systems separate water masses of the Gulf of Maine and Georges Bank from oceanic waters south of Georges Bank. These water masses differ in temperature, salinity, nutrient concentration, and planktonic communities, which influence productivity and may influence fish abundance and distribution.

Georges Bank has been historically characterized by high levels of both primary productivity and fish production. The most common groups of benthic invertebrates on Georges Bank in terms of numbers collected were amphipod crustaceans and annelid worms, and overall biomass was dominated by sand dollars and bivalves (Theroux and Wigley 1998). Using the same database, four macrobenthic invertebrate assemblages that occur on similar habitat type were identified (Theroux and Grosslein 1987):

- The Western Basin assemblage is found in comparatively deep water (492 to 656 ft [150 to 200 m]) with relatively slow currents and fine bottom sediments of silt, clay, and muddy sand. Fauna are comprised mainly of small burrowing detritivores and deposit feeders, and carnivorous scavengers.
- The Northeast Peak assemblage is found in variable depths and current strength and includes coarse sediments, consisting mainly of gravel and coarse sand with interspersed boulders, cobbles, and pebbles. Fauna tend to be sessile (coelenterates, brachiopods, barnacles, and tubiferous annelids) or free-living (brittle stars, crustaceans, and polychaetes), with a characteristic absence of burrowing forms.

- The Central Georges Bank assemblage occupies the greatest area, including the central and northern portions of Georges Bank in depths less than 328 ft (100 m). Medium-grained shifting sands predominate this dynamic area of strong currents. Organisms tend to be small to moderately large with burrowing or motile habits. Sand dollars are most characteristic of this assemblage.
- The Southern Georges Bank assemblage is found on the southern and southwestern flanks at depths from 262 to 656 ft (80 to 200 m), where fine-grained sands and moderate currents predominate. Many southern species exist here at the northern limits of their range. Dominant fauna include amphipods, copepods, euphausiids, and starfish.

As stated in Section 4.1.1.1, common demersal fish species in Georges Bank are offshore hake, blackbelly rosefish, Gulf stream flounder, silver hake, red hake, goosefish (monkfish), Atlantic cod, haddock, pollock, yellowtail flounder, windowpane flounder, winter flounder, winter skate, little skate, longhorn sculpin, white hake, American plaice, witch flounder, and thorny skate.

4.1.1.3 Southern New England/Mid-Atlantic Bight

The Mid-Atlantic Bight includes the shelf and slope waters from Georges Bank south to Cape Hatteras, and east to the Gulf Stream (Figure 4.1-1). The northern portion of the Mid-Atlantic Bight is sometimes referred to as southern New England and generally includes the area of the continental shelf south of Cape Cod from the Great South Channel to Hudson Canyon. The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina. The shelf slopes gently from shore out to between 62 to 124 ft (100 and 200 km) offshore where it transforms to the slope (328 to 656 ft [100 to 200 m water depth]) at the shelf break. In both the Mid-Atlantic Bight and on Georges Bank, numerous canyons incise the slope, and some cut up onto the shelf itself (Stevenson et al. 2004). Like the rest of the continental shelf, the topography of the Mid-Atlantic Bight was shaped largely by sea level fluctuations during past ice ages. Since that time, currents and waves have modified this basic structure.

The sediment type covering most of the shelf in the Mid-Atlantic Bight is sand, with some relatively small, localized areas of sand-shell and sand-gravel. On the slope, silty sand, silt, and clay predominate. Permanent sand ridges occur in groups with heights of about 33 ft (10 m), lengths of 6 to 31 mi (10 to 50 km), and spacing of 1 mi (2 km). The sand ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Sand waves are usually found in patches of 5 to 10 with heights of about 7 ft (2 m), lengths of 164 to 328 ft (50 to 100 m), and 0.6 to 1 mi (1 to 2 km) between patches. The sand waves are usually found on the inner shelf and are temporary features that form and re-form in different locations, especially in areas like Nantucket Shoals where there are strong bottom currents. Because tidal currents southwest of Nantucket Shoals and southeast of Long Island and Rhode Island slow significantly, there is a large mud patch on the seafloor where silts and clays settle out.

Artificial reefs are another significant Mid-Atlantic Bight habitat, formed much more recently on the geologic time scale than other regional habitat types. These localized areas of hard structure have been formed by shipwrecks, lost cargoes, disposed solid materials, shoreline jetties and groins, submerged pipelines, cables, and other materials (Steimle and Zetlin 2000). In general, reefs are important for attachment sites, shelter, and food for many species. In addition, fish predators, such as tunas, may be attracted by prey aggregations or may be behaviorally attracted to the reef structure. Estuarine reefs, such as blue mussel beds or oyster reefs, are dominated by epibenthic organisms, as well as crabs, lobsters, and sea stars. These reefs are hosts to a multitude of fish, including gobies, spot, bass (black sea and striped), perch, toadfish, and croaker. Coastal reefs are comprised of either exposed rock, wrecks, kelp, or other

hard material, and these are generally dominated by boring mollusks, algae, sponges, anemones, hydroids, and coral. These reef types also host lobsters, crabs, sea stars, and urchins, as well as a multitude of fish, including; black sea bass, pinfish, scup, cunner, red hake, gray triggerfish, black grouper, smooth dogfish, and summer flounder. These epibenthic organisms and fish assemblages are similar to the reefs farther offshore, which are generally comprised of rocks and boulders, wrecks, and other types of artificial reefs. There is less information available for reefs on the outer shelf, but the fish species associated with these reefs include tilefish, white hake, and conger eel.

The benthic inhabitants of this primarily sandy environment are dominated in terms of numbers by amphipod crustaceans and bivalve mollusks. Biomass is dominated by mollusks (70 percent) (Theroux and Wigley 1998). Pratt (1973) identified three broad faunal zones related to water depth and sediment type:

- The "sand fauna" zone is dominated by polycheates and was defined for sandy sediments (1 percent or less silt) that are at least occasionally disturbed by waves, from shore out to a depth of about 164 ft (50 m).
- The "silty sand fauna" zone is dominated by amphipods and polychaetes and occurs immediately offshore from the sand fauna zone, in stable sands containing a small amount of silt and organic material.
- Silts and clays become predominant at the shelf break and line the Hudson Shelf Valley supporting the "silt-clay fauna."

Rather than substrate as in the Gulf of Maine and Georges Bank, latitude and water depth are considered to be the primary factors influencing demersal fish species distribution in the Mid-Atlantic Bight area. The following assemblages were identified by Colvocoresses and Musick (1984) in the Mid-Atlantic subregion during spring and fall.[7]

- Northern (boreal) portions: hake (white, silver, red), goosefish (monkfish), longhorn sculpin, winter flounder, little skate, and spiny dogfish;
- Warm temperate portions: black sea bass, summer flounder, butterfish, scup, spotted hake, and northern searobin;
- Water of the inner shelf: windowpane flounder;
- Water of the outer shelf: fourspot flounder; and
- Water of the continental slope: shortnose greeneye, offshore hake, blackbelly rosefish, and white hake.

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 4.1.2-1 briefly summarizes the habitat requirements for each of the 13 large-mesh groundfish species managed by the Northeast Multispecies FMP, some of which consist of multiple stocks within the Northeast Multispecies

[7] Other species were listed as found in these assemblages, but only the species common to both spring and fall seasons are listed.

FMP. Information for this table was extracted from the original Northeast Multispecies FMP and profiles available from NMFS (Clark 1998). EFH information for egg, juvenile, and adult life stages for these species was compiled from Stevenson et al. 2004 (Table 4.1.2-1). 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 4.1.2-1.

Table 4.1.2-1
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, Georges Bank and southward	Omnivorous (invertebrates and fish)	(J): 82-245 ft (25-75 m) (A): 33-492 ft (10-150 m)	(J): Cobble or gravel bottom substrates (A): Rocks, pebbles, or gravel bottom substrate	Otter trawl, bottom longlines, gillnets
Haddock	southwestern Gulf of Maine and shallow waters of Georges Bank	Benthic feeders (amphipods, polychaetes, echinoderms), bivalves, and some fish	(J): 115-328 ft (35-100 m) (A): 131-492 ft (40-150 m)	(J): Pebble and gravel bottom substrates (A): Broken ground, pebbles, smooth hard sand, smooth areas between rocky patches	Otter trawl, bottom longlines, gillnets
Acadian redfish	Gulf of Maine, deep portions of Georges Bank and Great South Channel	Crustaceans	(J): 82-1,312 ft (25-400 m) (A): 164-1,148 ft (50-350 m)	(J): Bottom habitats with a substrate of silt, mud, or hard bottom (A): Same as for (J)	Otter trawl

Table 4.1.2-1 (continued)
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	
Pollock	Gulf of Maine, extends to Georges Bank, and the northern part of Mid-Atlantic Bight	Juvenile feed on crustaceans, adults also feed on fish and mollusks	(J): 0-820 ft (0-250 m)	(J): Bottom habitats with aquatic vegetation or substrate of sand, mud, or rocks	Otter trawl, gillnets
			(A): 49-1,198 ft (5-365 m)	(A): Hard bottom habitats including artificial reefs	
Ocean Pout	Gulf of Maine, Cape Cod Bay, Georges Bank, southern New England, 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): <164 ft (<50 m)	(E): Bottom habitats, generally hard bottom sheltered nests, holes, or crevices where juveniles are guarded.	Otter trawl
			(L): <164 ft (<50 m)	(L): Hard bottom nesting areas	
			(J): 262 ft (<80 m)	(J): Bottom habitat, often smooth areas near rocks or algae	
			(A): 361 ft (<110 m)	(A): Bottom habitats; dig depressions in soft sediments	
Atlantic Halibut	Gulf of Maine, Georges Bank	Juveniles feed on annelid worms and crustaceans, adults mostly feed on fish	(J): 66-197 ft (20-60 m)	(J): Bottom habitat with a substrate of sand, gravel, or clay	Otter trawl, bottom longlines
			(A): 328-2,297 ft (100-700 m)	(A): Same as for (J)	

Table 4.1.2-1 (continued)
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	
White hake	Gulf of Maine, Georges Bank, southern New England	Juveniles feed mostly on polychaetes and crustaceans; adults feed mostly on crustaceans, squids, and fish	(J): 16-738 ft (5-225 m)	(J): Bottom habitat with seagrass beds or substrate of mud or fine-grained sand	Otter trawl, gillnets
			(A): 16-1,066 ft (5-325 m)	(A): Bottom habitats with substrate of mud or fine grained sand	
Yellowtail flounder	Gulf of Maine, southern New England, Georges Bank	Amphipods and polychaetes	(J): 66-164 ft (20-50 m)	(J): Bottom habitats with substrate of sand or sand and mud	Otter trawl
			(A): 66-164 ft (20-50 m)	(A): Same as for (J)	
American plaice	Gulf of Maine, Georges Bank	Polychaetes, crustaceans, mollusks, echinoderms	(J): 148-492 ft (45-150 m)	(J): Bottom habitats with fine grained sediments or a substrate of sand or gravel	Otter trawl
			(A): 148-574 ft (45–175 m)	(A): Same as for (J)	
Witch flounder	Gulf of Maine, Georges Bank, Mid-Atlantic Bight/southern New England	Mostly polychaetes (worms), echinoderms	(J): 164-1,476 ft (50-450 m)	(J): Bottom habitats with fine grained substrate	Otter trawl
			(A): 82-984 ft) (25-300 m)	(A): Same as for (J)	

Table 4.1.2-1 (continued)
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	
Winter flounder	Gulf of Maine, Georges Bank, Mid-Atlantic Bight/southern New England	Polychaetes, crustaceans	(E): 16 ft (<5 m)	(E): Bottom habitats with a substrate of sand, muddy sand, mud, and gravel	Otter trawl, gillnets
			(J): 0.3-32 ft (0.1-10 m) (3-164 ft age 1+) (1-50 m)	(J): Bottom habitats with a substrate of mud or fine grained sand	
			(A): 3.2-328 ft (1-100 m)	(A): Bottom habitats including estuaries with substrates of mud, sand, gravel	
Atlantic wolffish	Gulf of Maine & Georges Bank	Mollusks, brittle stars, crabs, and sea urchins	(J): 131.2-787.4 ft (40-240 m)	(J): Rocky bottom and coarse sediments	Otter trawl, bottom longlines, and gillnets
			(A): 131.2-787.4 ft (40-240 m)	(A): Same as for (J)	
Windowpane flounder	Gulf of Maine, Georges Bank, Mid-Atlantic Bight/southern New England	Juveniles mostly crustaceans; adults feed on crustaceans and fish	(J): 3.2-328 ft (1-100 m)	(J): Bottom habitats with substrate of mud or fine grained sand	Otter trawl
			(A): 3.2-574 ft (1-75 m)	(A): Same as for (J)	

Note:

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

4.1.3 Essential Fish Habitat (EFH)

EFH is defined by the Sustainable Fisheries Act (SFA) 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 4.1.2-1. Full descriptions and maps of EFH for each species and life stage 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

Sectors would fish for target species with a number of gear types: trawl, gillnet, fish pots/traps, and hook and line gear (including jigs, handline, and non-automated demersal longlines) as part of the FY 2011 operations. This section discusses the characteristics of each of the proposed 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 4.1.4-1.

Table 4.1.4-1
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	295 ft (90 m) long per net	~1,476 ft (451 m)	Varies by target species
Lines	N/A	Leadline and floatline with webbing (mesh) connecting	Mainline is parachute cord. Gangions (lines from mainline to hooks) are 15 inches (38 cm)long, 3 to 6 inches (8 to 15 cm) 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 [16.5 cm])	No nets, but 12/0 circle hooks are required	No nets, but single to multiple hooks, “umbrella rigs”
Anchoring	N/A	22 lb (10 kg) Danforth-style anchors are required at each end of the net string	20-24 lb (9-11 kg) anchors, anchored at each end, using pieces of railroad track, sash weights, or Danforth anchors, depending on currents	No anchoring, but sinkers used (stones, lead)

Table 4.1.4-1 (continued)
Descriptions of the Fixed Gear Types Used by the Multispecies Fishery

	Gear Type			
	Trawl	**Sink/ Anchor Gillnets**	**Bottom Longlines**	**Hook and Line**
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

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; however, mid-water trawls are prohibited in the Northeast multispecies fishery. 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 361 to 558 ft (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 codend aboard the vessel until the entire catch is in the hold.

Although there are three general types of bottom trawl used in the Northeast Region, 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 (Northeast Region Essential Fish Habitat Steering Committee [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 tend to 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 1.6 to 2.0 ft (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).

In addition the haddock separator trawl and Ruhle trawl (bottom trawls), can be used to minimize the catch of cod through gear design that considers the behavior of fish in response to gear. A haddock separator trawl is a groundfish trawl modified to a vertically oriented trouser trawl configuration, with two extensions arranged one over the other, where a codend is attached to the upper extension, and the bottom extension is left open with no codend attached. A horizontal large mesh separating panel constructed with a minimum of 6-inch diamond mesh must be installed between the selvedges joining the upper and lower panels [648.85(a)(3)(iii)(A)]. Generally, haddock swim to the upper part of a net and cod swim to the lower part of the net and by inserting a mesh panel in the net, and using two codends, the catch can be effectively divided. If the codend on the lower part of the net is left open, the cod escape (NEFMC 2003). Overall, the haddock separator trawl has had mixed results in commercial fishing operations and the ratios of haddock to cod that were expected when this gear was adopted have not been realized. Catches of other demersal species, such as flounders, skates, and monkfish, have also been higher than expected based on experimental results; however, the separator trawl has reduced catches of these species compared to normal fishing practices (NEFMC 2009a).

The Ruhle trawl (previously known as the haddock rope trawl or eliminator trawl) is a four-seam bottom groundfish trawl with a rockhopper that is designed to reduce the bycatch of cod while retaining or increasing the catch of haddock and other healthy stocks [648.85(b)(6)(iv)(J)(*3*)]. The Ruhle trawl was approved for use in the DAS program and in the Eastern U.S./Canada Haddock SAP on July 14, 2008 (73 FR 40186) after nearly two years of testing to determine efficacy. Experiments comparing traditional and the new trawl gear showed that the Ruhle trawl reduced bycatch of cod and flounders, while simultaneously retaining the catch of healthier stocks, primarily haddock. The large, 8-foot mesh in the forward end (the wings) of the Ruhle trawl net allows cod and other fish to escape because of their body shapes and unique behavior around the netting (NOAA 2008).

Gillnet Gear

Sectors would also use individual sink/anchor gillnets which are about 295 ft (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 66 lb/net (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 gillnets ranges from daily to semiweekly (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. The meshes of individual gillnets are uniform in size and shape,

hence highly selective for a particular size of fish (Jennings et al. 2001). 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 set with the floatline tied to the leadline at 6-ft (1.8 m) intervals, so that the floatline is close to the bottom, and the net forms a limp bag between each tie. They are left in the water for 3-4 days, and are used to catch flounders and monkfish.

Fish Traps/Pots

Some sectors would use fish traps/pots. It is assumed these traps/pots are similar to lobster pots. Lobster pots are typically rectangular and are divided into two sections, the chamber and the parlor. The chamber has an entrance on both sides of the pot and is usually baited. Lobsters enter the parlor via a tunnel (Everhart and Youngs 1981). Escape vents are installed in both areas of the pot to minimize the retention of sub-legal sized lobsters (DeAlteris 1998).

Lobster pots are fished as either a single pot per buoy (although two pots per buoy are used in Cape Cod Bay, and three pots per buoy in Maine waters), or a “trawl” or line with up to one hundred pots. According to the Northeast Fishery Science Center (NEFSC 2002), important features of lobster pots and their use are the following:

- About 95 percent of lobster pots are made of plastic-coated wire.
- Floating mainlines may be up to 25 ft (8 m) off bottom; sinking groundlines are used where entanglements with marine mammals are a concern.
- Soak time depends on season and location - usually 1 to 3 days in inshore waters in warm weather to weeks in colder waters.
- Offshore pots are larger [more than 4 ft (1 m) long] and heavier (~ 100 lb or 45 kg), with an average of about 40 pots/trawl and 44 trawls/vessel. They have a floating mainline and are usually deployed for a week at a time.

Hook and Line Gear

Hand Lines/Rod and Reel

Sectors would also use handlines. 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 natural bait or an artificial lure. Hand lines can be carried by currents until retrieved or fished in such a 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.

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 attract a fish and is commonly used to catch squid. Jigging machine lines are generally fished in waters up to 1,970 ft (600 m) deep. Hooks and sinkers can contact the bottom, depending upon the way the gear is used and may catch a variety of demersal species.

Bottom Longlines

Sectors would also use bottom longlines, which consist of a long length of line 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 1,476 ft (450 m) and are deployed with 20 to 24 lb (9 to 11 kg) anchors. The mainline is a parachute cord. Gangions are typically 16 in (40 cm) long and 3 to 6 in (1 to 1.8 m) apart and are made of shrimp twine. These bottom longlines are usually set for a few hours at a time (NREFHSC 2002).

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).

4.1.4.2 Gear Interaction with Habitat

Historically, commercial fishing in the region has been conducted using trawls, gillnets, and bottom longline gear. 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 (changes are always permanent 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 (changes may be permanent 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 Mid-Atlantic Fishery Management Council (MAFMC) (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 to 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 bottom 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 to biological structure were ranked higher than impacts to 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 bottom 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 bottom 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 ICES and National Research Council reports, individual types of trawls and dredges were not evaluated. The impacts of bottom gillnets, traps, and bottom longlines were limited to warm or shallow water environments with rooted aquatic vegetation or "live bottom" environments (e.g., coral reefs).

4.2 ALLOCATED TARGET SPECIES

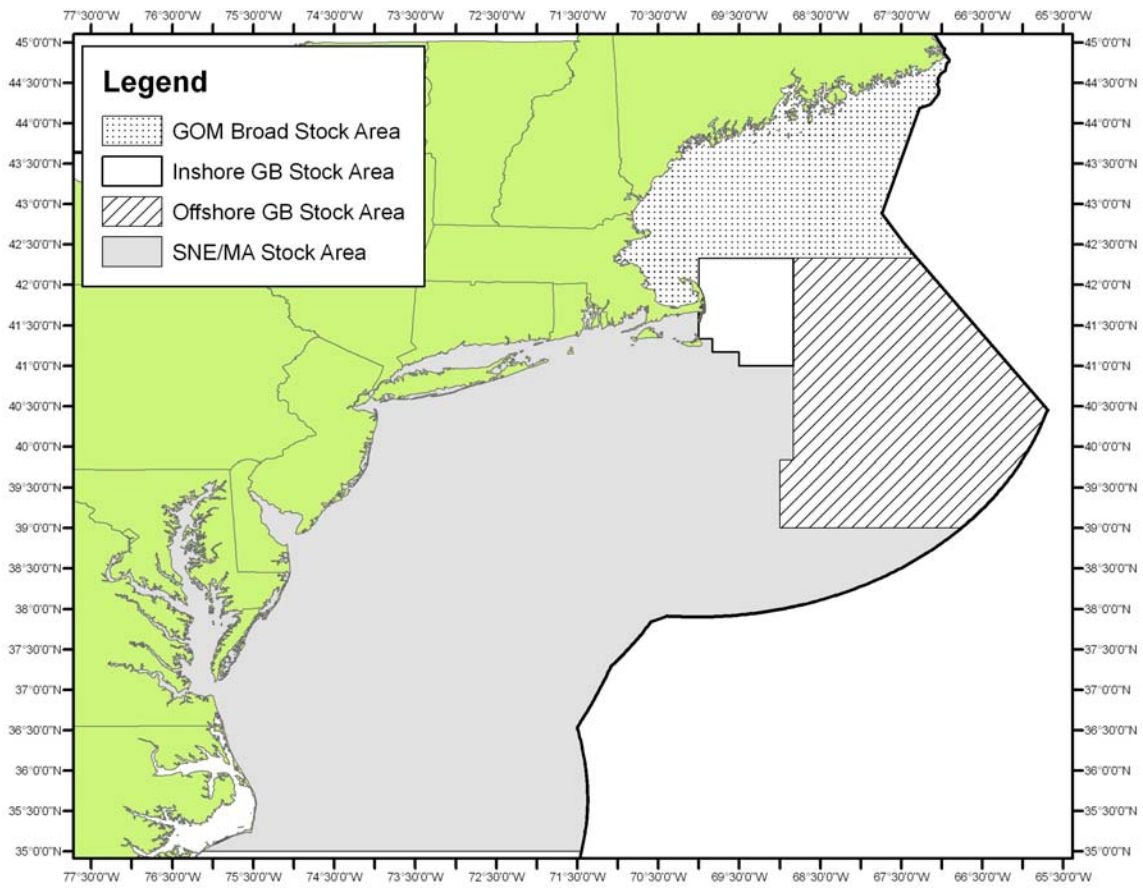
This section describes the species life history and stock population status for each of the fish stocks that are managed under the Northeast Multispecies FMP, which would be harvested by the sectors as allocated target species under provisions of the FMP (Figure 4.2-1 identifies broad stock areas). The description of species habitat associations described in Section 4.1 provides context for considering the interactions between gear and species. A comparison of depth-related demersal fish assemblages of Georges Bank and the Gulf of Maine is also provided for additional context. The discussion of allocated target species is concluded with an analysis of the interaction between the gear types the sectors intend to use (as described in Section 4.1.6.2) and allocated target species. The following discussions have been adapted from the GARM III report (NEFSC 2008) and the EFH Source Documents: Life History and Habitat Characteristics can be accessed via the NEFSC website at http://www.nefsc.org (NEFSC 2010).

4.2.1 Species and Stock Status Descriptions

The allocated target stocks for the sectors are:

- GOM Cod
- GB Cod
- GOM Haddock
- GB Haddock
- American Plaice
- Witch Flounder
- GOM Winter Flounder
- GB Winter Flounder
- Cape Cod/GOM Yellowtail Flounder
- GB Yellowtail Flounder
- SNE/MA Yellowtail Flounder
- Redfish
- Pollock
- White Hake

Figure 4.2-1 Broad stock areas as defined in Amendment 16



Spiny dogfish, skates, and monkfish may also be affected by the Proposed Action and are considered in this EA as "non-allocated target species and bycatch" in Sections 4.3 and 5.1. These species are not allocated under the Northeast Multispecies FMP and are managed under their respective FMPs.

Atlantic halibut, ocean pout, windowpane flounder, and SNE/MA winter flounder are non-allocated species that are also managed under the Northeast Multispecies FMP. Sector and Common Pool vessels are permitted to retain 1 halibut per trip. Wolffish have been provisionally added to the list of stocks managed under the Northeast Multispecies FMP. These species stocks are addressed in Amendment 16 to the Northeast Multispecies FMP (NEFMC 2009a), and are not considered further within this EA.

4.2.1.1 Gulf of Maine Cod

Life History: The Atlantic cod, *Gadus morhua*, is a demersal gadoid species found on both sides of the North Atlantic. In the western North Atlantic, cod occur from Greenland to North Carolina. In U.S. waters, cod are assessed and managed as two stocks: Gulf of Maine and Georges Bank. GOM cod attain sexual maturity at a later age than GB cod, which is related to differences in growth rates between the two stocks. The greatest concentrations of cod off the Northeast coast of the U.S. are on rough bottoms in waters between 33 and 492 ft (10 and 150 m) and at temperatures between 32 and 50°F (0 and

10°C). Spawning occurs year-round, near the ocean bottom, with a peak in winter and spring. Peak spawning is related to water temperatures between 41 and 45°F (5 and 7°C). It is delayed until spring when winters are severe and peaks in winter when mild. Eggs are pelagic, buoyant, spherical, and transparent, and drift for 2 to 3 weeks before hatching. The larvae are also pelagic until reaching 1.6 to 2.3 in (4 to 6 cm) in about 3 months, at which point they descend to the seafloor. Most remain on the bottom after this descent, and there is no evidence of a subsequent diel, vertical migration. Adults tend to move in schools, usually near the bottom, but also occurring in the water column.

Population Status: The inshore GOM stock appears to be relatively distinct from the offshore cod stocks on the banks of the Scotian Shelf and Georges Bank based on tagging studies. GOM cod spawning stock biomass has increased since the late 1990's from 12,236 ton (11,100 metric tons [mt]) in 1997 to 37,479 ton (34,000 mt) in 2007, but the stock remains low relative to historic levels. The stock is not overfished, but overfishing is occurring.

4.2.1.2 Georges Bank Cod

Life History: The GB cod stock, *Gadus morhua,* is the most southerly cod stock in the world. The greatest concentrations off the Northeast coast of the U.S. are on rough bottoms in waters between 33 and 492 ft (10 and 150 m) and at temperatures between 32 and 50° F (0 and 10°C). Spawning occurs year-round, near the ocean bottom, with a peak in winter and spring. Peak spawning is related to water temperatures between 41 and 45°F (5 and 7°C). It is delayed until spring when winters are severe and peaks in winter when mild. Eggs are pelagic, buoyant, spherical, and transparent and drift for 2 to 3 weeks before hatching. The larvae are also pelagic until reaching 1.6 to 2.3 in (4 to 6 cm) in about 3 months, at which point descending to the seafloor. Most remain on the bottom after this descent, and there is no evidence of a subsequent diel, vertical migration. Adults tend to move in schools, usually near the bottom, but also occur in the water column.

Population Status: GB cod are a transboundary stock that is harvested by both the U.S. and Canadian fishing fleets. The GB cod stock is overfished and overfishing is occurring.

4.2.1.3 Gulf of Maine Haddock

Life History: The GOM haddock, *Melanogrammus aeglefinus*, is a commercially-exploited groundfish found in the North Atlantic Ocean. This demersal gadoid species is distributed from Cape May, New Jersey to the Strait of Belle Isle, Newfoundland in the western North Atlantic, where a total of six distinct haddock stocks have been identified. Two of these haddock stocks are found in U.S. waters associated with Georges Bank and Gulf of Maine.

Haddock are highly fecund broadcast spawners. Haddock spawn over various substrates including rocks, gravel, smooth sand, and mud. Eggs are released near the ocean bottom in batches and fertilized by a courting male. After fertilization, haddock eggs become buoyant and rise to the surface water layer. In the Gulf of Maine, spawning occurs from early February to May, usually peaking in February to April. In the Gulf of Maine, Jeffreys Ledge and Stellwagen Bank are the two primary spawning sites. Eggs are broadcast and fertilized near the bottom. Fertilized eggs are buoyant and remain in the water column where subsequent development occurs. Larvae metamorphose into juveniles in roughly 30 to 42 days at lengths of 0.8 to 1.1 in (2 to 3 cm). Small juveniles initially live and feed in the epipelagic zone. Juveniles remain in the upper part of the water column for 3 to 5 months. Juveniles visit the ocean bottom in search of food. Once suitable bottom habitat is located, juveniles settle into a demersal existence. Haddock do not make extensive seasonal migrations. In winter, haddock prefer deeper waters and tend to move shoreward in summer.

Population Status: The GOM haddock stock is not overfished and overfishing is not occurring.

4.2.1.4 Georges Bank Haddock

Life History: The general life history of GB haddock, *Melanogrammus aeglefinus*, is comparable to the GOM haddock as described above. On Georges Bank, spawning occurs from January to June, usually peaking from February to early-April. Georges Bank is the principal haddock spawning area in the Northeast U.S. Shelf Ecosystem. GB haddock spawning is concentrated on the northeast peak of Georges Bank.

Median age and size of maturity differ slightly between the GB and GOM haddock stocks. GARM III found that the GOM fishery does not target haddock and is directed mostly at flatfish for which the fleet uses large square (6.5 inch [16.5 cm]) mesh gear, which leads to reduced selectivity on haddock. The GOM haddock have lower weights at age than the GB stock and the age at 50 percent maturity was also lower for GOM haddock as compared to GB haddock.

Population Status: The GB haddock stock is a transboundary resource, which is co-managed with Canada. Substantial declines have recently occurred in the weights at age due to slower than average growth, particularly of the 2003 year-class. This is affecting productivity in the short-term. The growth of subsequent year-classes is returning to the earlier rates. The stock is not overfished and overfishing is not occurring.

4.2.1.5 American Plaice

Life History: The American plaice, *Hippoglossoides platessoides*, is an arctic-boreal to temperate-marine pleuronectid (righteye) flounder that inhabits both sides of the North Atlantic on the continental shelves of northeastern North America and northern Europe. Off the U.S. coast, American plaice are managed as a single stock in the Gulf of Maine-Georges Bank region. American plaice have been categorized as batch spawners. Eggs are released in batches every few days over the spawning period. Adults spawn and fertilize their eggs at or near the bottom. Buoyant eggs, which lack oil globules, drift into the upper water column after being released. Eggs hatch at the surface and the amount of time between fertilization and hatching varies with the water temperature. Transformation of the larvae and migration of the left eye begins when the larvae are approximately 0.8 in (20 millimeters (mm)). Dramatic physiological transformations occur during the juvenile stage. The body shape continues to change, flattening and increasing in depth from side to side. As the migration of the left eye across the top of the head to the right side reaches completion, descent towards the seafloor begins. In U.S. and Canadian waters, American plaice is regarded as a sedentary species migrating only for spawning and feeding.

Population Status: In the Gulf of Maine and Georges Bank area, the American plaice stock is not overfished and overfishing is not occurring.

4.2.1.6 Witch Flounder

Life History: The witch flounder, *Glyptocephalus cynoglossus*, is a demersal flatfish distributed on both sides of the North Atlantic. In the western North Atlantic, the species ranges from Labrador southward, and is closely associated with mud or sand-mud bottom. In U.S. waters, witch flounder are common throughout the Gulf of Maine, in deeper areas on and adjacent to Georges Bank, and along the shelf edge as far south as Cape Hatteras, North Carolina. Witch flounder are assessed as a unit stock.

Spawning occurs at or near the bottom; however, the buoyant eggs rise into the water column where subsequent egg and larval development occurs. The pelagic stage of witch flounder is the longest among the species of the family *Pleuronectidae*. Descent to the bottom occurs when metamorphosis is complete, at 4 to 12 months of age. There has been a decrease in both the age and size of sexual maturity in recent years. Witch flounder spawn from March to November, with peak spawning occurring in summer. The general trend is for spawning to occur progressively later from south to north. In the Gulf of Maine-Georges Bank region, spawning occurs from April to November, and peaks from May to August. Spawning occurs in dense aggregations that are associated with areas of cold water. Witch flounder spawn at 32 and 50 °F (0 to 10°C).

Population Status: Witch flounder are overfished and overfishing is occurring.

4.2.1.7 Gulf of Maine Winter Flounder

Life History: The winter flounder, *Psuedopleuronectes americanus,* is a demersal flatfish distributed in the western North Atlantic from Labrador to Georgia. Important U.S. commercial and recreational fisheries exist from the Gulf of Maine to the Mid-Atlantic Bight. In U.S. waters, the resource is assessed and managed as three stocks: Gulf of Maine, southern New England/Mid-Atlantic, and Georges Bank. Adult GOM winter flounder migrate inshore in the fall and early winter and spawn in late winter and early spring. 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. After spawning, adults typically leave inshore areas when water temperatures exceed 59 °F (15°C) although some remain inshore year-round. The eggs of winter flounder are demersal, adhesive, and stick together in clusters. Larvae are initially planktonic but become increasingly bottom-oriented as metamorphosis approaches. Metamorphosis, when the left eye migrates to the right side of the body and the larvae become "flounder-like," begins around 5 to 6 weeks after hatching, and is completed by the time the larvae are 0.3 to 0.4 in (8 to 9 mm) in length at about 8 weeks after hatching. Newly metamorphosed young-of-the-year winter flounder take up residence in shallow water where individuals may grow to about 4 in (100 mm) within the first year.

Population Status: While the parameters of status determination criteria are presented in Table 12 of Amendment 16, the exact status determination for GOM winter flounder is unknown. Fishing mortality for this stock is likely above the level that would produce maximum sustainable yield (MSY), which typically indicates that overfishing is occurring. Further, population assessments suggest that spawning stock biomass is below biomass levels necessary to produce MSY, which typically indicates that this species is overfished.

4.2.1.8 Georges Bank Winter Flounder

Life History: The life history of the GB winter flounder, *Psuedopleuronectes americanus,* is comparable to the GOM winter flounder as described above.

Population Status: The stock is likely in an overfished condition and overfishing is probably occurring.

4.2.1.9 Cape Cod/Gulf of Maine Yellowtail Flounder

Life History: The yellowtail flounder, *Limanda ferruginea,* is a demersal flatfish distributed from Labrador to Chesapeake Bay generally at depths between 131 to 230 ft (40 and 70 m). Off the U.S. coast, three stocks are considered for management purposes including Cape Cod/GOM, GB, and SNE/MA stocks. In the western North Atlantic, spawning occurs from March through August at

temperatures of 41 to 54 °F (5 to 12°C). Spawning takes place along continental shelf waters northwest of Cape Cod. Yellowtail flounder spawn buoyant, spherical, pelagic eggs that lack an oil globule. Pelagic larvae are brief residents in the water column; transformation to the juvenile stage occurs at 0.5 to 0.6 in (11.6 to 16 mm) standard length. There are high concentrations of adults around Cape Cod in both spring and autumn. The median age at maturity for females is 2.6 years off Cape Cod.

Population Status: The Cape Cod/GOM yellowtail flounder stock continues to be overfished and overfishing is continuing. However, fishing mortality has been declining since 2004 and is currently at the lowest level observed in the time series in 2009. Spawning stock biomass has increased the past few years.

4.2.1.10 Georges Bank Yellowtail Flounder

Life History: The general life history of the GB yellowtail flounder, *Limanda ferruginea,* is comparable to the Cape Cod/GOM yellowtail described above. The median age at maturity for females is 1.8 years on Georges Bank. Spawning takes place along continental shelf waters of Georges Bank.

Population Status: GB yellowtail flounder is overfished, but overfishing is not continuing.

4.2.1.11 Southern New England/Mid-Atlantic Yellowtail Flounder

Life History: The general life history of the SNE/MA yellowtail flounder, *Limanda ferruginea,* is comparable to the Cape Cod/GOM yellowtail described above. The median age at maturity for females is 1.6 years off southern New England.

Population Status: The SNE/MA yellowtail flounder continues to be overfished and overfishing is still occurring. However, fishing mortality has been declining since 2005 and it is recently at the lowest levels observed in the time series in 2009.

4.2.1.12 Redfish

Life History: The Acadian redfish, *Sebastes fasciatus* Storer, and the deepwater redfish, *S. mentella* Travin, are virtually indistinguishable from each other based on external characteristics. Deepwater redfish are less prominent in the more southerly regions of the Scotian Shelf and appear to be virtually absent from the Gulf of Maine where Acadian redfish appear to be the sole representative of the genus Sebastes. Acadian redfish inhabiting the waters of the Gulf of Maine and deeper portions of Georges Bank and the Great South Channel are managed as a unit stock in U.S. waters.

The redfish are a slow growing, long-lived, ovoviviparous species with an extremely low natural mortality rate. Redfish eggs are fertilized internally, develop into larvae within the oviduct, and are released near the end of the yolk sac phase. The release of larvae lasts for 3 to 4 months with a peak in late May to early June. Newly spawned larvae occur in the upper 10 m of the water column; at 0.4 to 1.0 in (10 to 25 mm). The post-larvae descend below the thermocline when about 1 in (25 mm) in length. Young-of-the-year are pelagic until reaching 1.6 to 2.0 in (40 to 50 mm) at 4 to 5 months old, at which point moving to the bottom, typically by early fall of their first year. Redfish of 9 in (22 cm) or greater are considered adults. In general, the size of landed redfish is positively correlated with depth. The reason for this may involve differential growth rates of stocks, confused species identification (deepwater redfish are a larger species), size-specific migration, gender-specific migration (females are larger), or a combination of these factors. Redfish make diurnal vertical migrations linked to their primary euphausiid prey. Nothing is known about redfish breeding behavior, but fertilization is internal and fecundity is relatively low.

Population Status: The redfish stock is not overfished and overfishing is not occurring.

4.2.1.13 Pollock

Life History: Pollock, *Pollachius virens*, occur on both sides of the North Atlantic. In the western North Atlantic, the species is most abundant on the western Scotian Shelf and in the Gulf of Maine. There is considerable movement of the species between the Scotian Shelf, Georges Bank, and the Gulf of Maine. Although some differences in meristic and morphometric characters have been shown, there are no significant genetic differences among areas. As a result, they are assessed as a single unit. The principal pollock spawning sites in the western North Atlantic are in the western Gulf of Maine, Great South Channel, Georges Bank, and on the Scotian Shelf. Spawning takes place from September to April. Spawning time is more variable in northern sites than in southern sites. Spawning occurs over hard, stony, or rocky bottom. Spawning activity begins when the water column cools to near 46 °F (8°C) and peaks when temperatures are approximately 40 to 43 °F (4.5 to 6°C). Thus, most spawning occurs within a comparatively narrow range of temperatures.

Pollock eggs are buoyant, rising into the water column after fertilization. The pelagic larval stage lasts for 3 to 4 months, at which time the small juveniles or "harbor pollock" migrate inshore to inhabit rocky subtidal and intertidal zones. Pollock then undergo a series of inshore-offshore movements linked to temperature until near the end of their second year. At this point, the juveniles move offshore where the pollock remain throughout the adult stage. Pollock are a schooling species and are found throughout the water column. With the exception of short migrations due to temperature changes and north-south movements for spawning, adult pollock are fairly stationary in the Gulf of Maine and along the Nova Scotian coast. Male pollock reach sexual maturity at a larger size and older age than females. Age and size at maturity of pollock have declined in recent years, a trend that has also been reported in other marine fish species (e.g., haddock, witch flounder).

Population Status: While the GARM III report suggested that pollock is overfished and overfishing is occurring, due to the high uncertainty of the determination of pollock stock status (as noted in the GARM III stock assessment conclusions), the NMFS Northeast Fisheries Science Center, in conjunction with the Northeast Region Coordinating Council, which provides advice on the scheduling and prioritization of stock assessments, agreed to schedule another pollock stock assessment in 2010. The pollock peer reviewed benchmark stock assessment review (SAW 50) was completed during the first week of June 2010, and the final summary report was completed on July 14, 2010. The conclusions in this report indicate that overfishing is not occurring, the stock is not overfished, and the stock is rebuilt.

4.2.1.14 White Hake

Life History: The white hake, *Urophycis tenuis*, occurs from Newfoundland to southern New England and is common on muddy bottom throughout the Gulf of Maine. The depth distribution of white hake varies by age and season; juveniles typically occupy shallower areas than adults, but individuals of all ages tend to move inshore or shoalward in summer, dispersing to deeper areas in winter. The northern spawning group of white hake spawns in late summer (August-September) in the southern Gulf of St. Lawrence and on the Scotian Shelf. The timing and extent of spawning in the Georges Bank - Middle Atlantic spawning group has not been clearly determined. The eggs, larvae, and early juveniles are pelagic; older juveniles and adults are demersal. The eggs are buoyant. Pelagic juveniles become demersal at 2.0 to 2.4 in (50 to 60 mm) total length. The pelagic juvenile stage lasts about two months. White hake attain a maximum length of 53 in (135 cm) and weigh up to 49 lb (22 kg); females are larger than males.

Population Status: The stock is overfished and overfishing is occurring.

4.2.2 Assemblages of Fish Species

Georges Bank and the Gulf of Maine have been historically characterized by high levels of fish production. Several studies have identified demersal fish assemblages over large spatial scales. Overholtz and Tyler (1985) found five depth-related groundfish assemblages for Georges Bank and the Gulf of Maine 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 4.2.2-1 (adapted from Amendment 16). For the Affected Area, including southern New England, these assemblages and relationships are considered to be relatively consistent for purposes of general description. The assemblages include allocated target species, and non-allocated target species and bycatch. As presented in Table 4.2.2-1, the terminology and definitions of habitat types vary slightly between the two studies. For further information on fish habitat relationships, see Table 4.1.2-1.

Table 4.2.2-1
Comparison of Demersal Fish Assemblages of Georges Bank 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/Georges Bank and Gulf of Maine-Georges Bank Transition
Shallow	Atlantic cod, haddock, pollock, silver hake, white hake, red hake, goosefish, ocean pout	Atlantic cod, haddock, pollock	Gulf of Maine-Georges Bank 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 Georges Bank-southern New England
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-Georges Bank
Northeast Peak	Atlantic cod, haddock, pollock, ocean pout, winter flounder, white hake, thorny skate, longhorn sculpin	Atlantic cod, haddock, pollock	Gulf of Maine-Georges Bank Transition Zone

4.2.3 Stock Status Trends

Of the 19 groundfish stocks (including all management units of each species) included in the GARM III report (NEFSC 2008), benchmark assessments indicated that six stocks were fished below the fishing mortality rate that would produce MSY (F_{MSY}) (or its proxy) in 2007 and 13 were above. The

F_{MSY} is the fishing mortality rate (F) that produces the MSY, defined as the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions (National Standards Guidelines 50 CFR 600.310). With the exception of pollock, the most recent information regarding stock assessments is provided by the GARM III Report and can be accessed via the NEFMC website at http://www.nefsc.org. The information in this section is largely adapted from that report. The 19 groundfish stocks listed in Table 4.2.3-1 include the 14 target stocks allocated under the Northeast Multispecies FMP that could be impacted to various degrees by sector fishing activities.

Table 4.2.3-1
Status of the Northeast Groundfish Stocks in 2007(GARM III)

Stock Status	Stock (GARM III)
Overfished and Overfishing Biomass < ½ B_{MSY} and F > F_{MSY}	GB Cod GB Yellowtail Flounder SNE/MA Yellowtail Flounder Cape Cod/GOM Yellowtail Flounder SNE/MA Winter Flounder White Hake Witch Flounder GB Winter Flounder GOM Winter Flounder[a] Northern Windowpane
Overfished but not Overfishing Biomass < ½ B_{MSY} and F ≤ F_{MSY}	Ocean Pout Halibut
Not Overfished but Overfishing Biomass ≥ ½ B_{MSY} and F > F_{MSY}	GOM Cod Southern Windowpane
Not Overfished and not Overfishing Biomass ≥ ½ B_{MSY} and F ≤ F_{MSY}	Pollock[b] Redfish Plaice GB Haddock GOM Haddock

Notes:

B_{MSY} = biomass necessary to produce MSY

F_{MSY} = fishing mortality rate that produces the MSY

[a] GARM III projections were not conducted due to the high uncertainty in the assessment for this species. This species is believed to be overfished and that overfishing is occurring.

[b] SAW 50 revised the status of pollock in 2010 to not overfished and overfishing not occurring

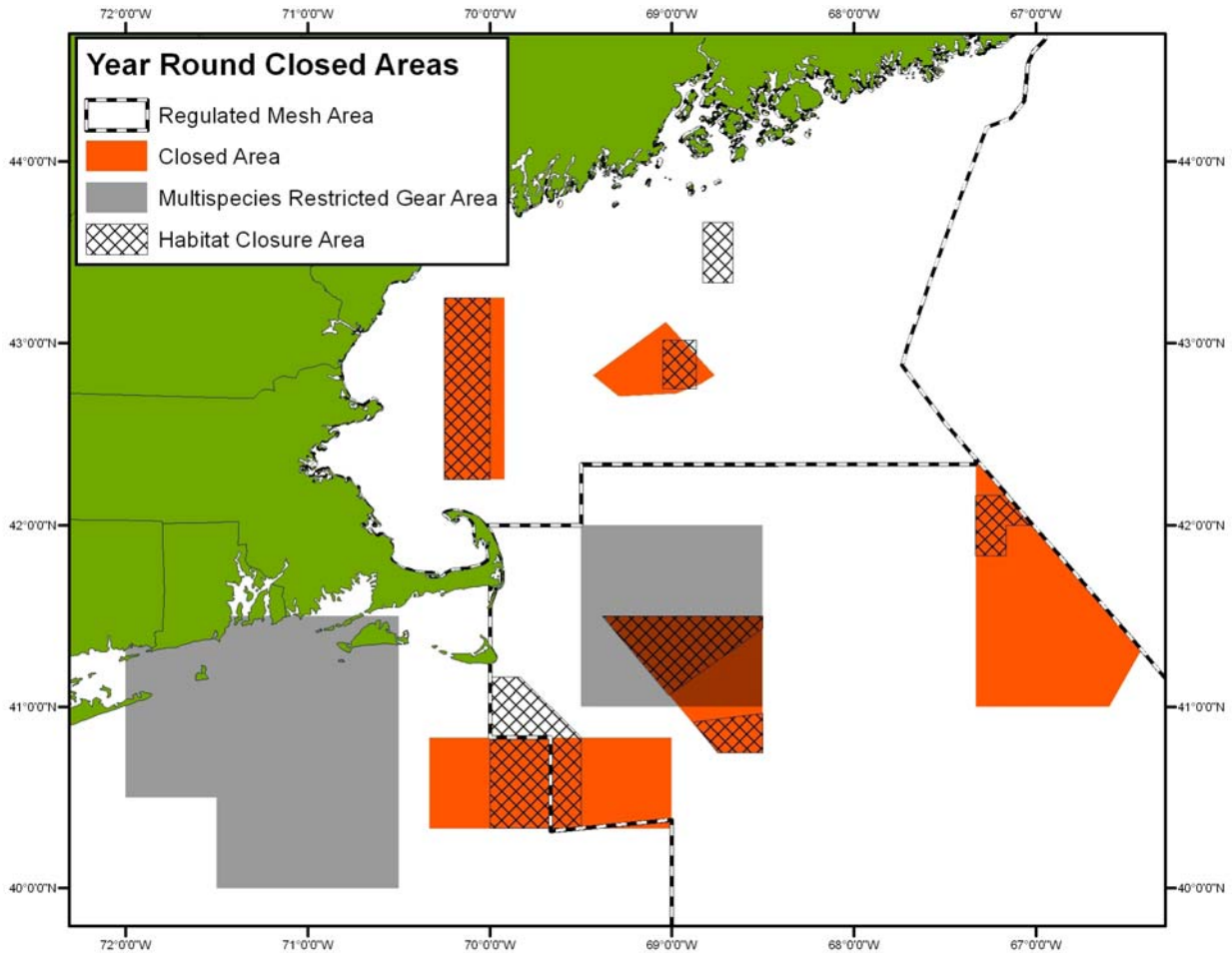
The results of GARM III show stocks of ocean pout and Atlantic halibut are being fished at a sustainable level, but the biomass indicates stocks have not yet been rebuilt and are considered to be overfished. The stock of GB haddock is rebuilt, and GOM haddock, Acadian redfish, pollock, and American plaice are no longer overfished or experiencing overfishing, which indicates Amendment 13 and FW 42 management actions have had positive effects on certain groundfish stocks. All other groundfish stocks are still experiencing overfishing, indicating the need for additional management measures.

4.2.4 Areas Closed to Fishing

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 4.2.4-1 shows the Closed Areas for FY 2011.

Amendment 13 to the Northeast Multispecies FMP and Amendment 10 of the Atlantic Sea Scallop FMP established year-round habitat closed areas which are off-limits to all mobile, bottom-tending gear (trawls and dredges). These closures were designed to minimize the adverse effects of fishing on EFH for species managed by the NEFMC (Table 4.1.2-1). In many cases, these closed areas overlap portions of the groundfish mortality closures (see Figure 4.2.4-1), but in other cases (Jeffreys Bank in the Gulf of Maine and the area southeast of Nantucket Island) they do not. The closed habitat areas are currently being evaluated for possible revision as part of the NEFMC Omnibus EFH Amendment 2 and may be changed or eliminated in the future. In addition, portions of four submarine canyons on the outer continental shelf are closed to all bottom trawling in order to protect vulnerable habitats for tilefish. Detailed descriptions and maps of these areas are available in Amendment 1 to the MAFMC Tilefish FMP.

Figure 4.2.4-1 Northeast Multispecies Closed Areas and U.S/Canada



4.2.5 Interaction between Gear and Allocated Target Species

The majority of the proposed sectors have minimal operational history; therefore, the analysis of interactions between gear and allocated target 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 4.2.5-1) 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.

4.3 NON-ALLOCATED TARGET SPECIES AND BYCATCH

Non-allocated target species and bycatch are defined in Section 2.0 and may include a broad range of species. For purposes of this assessment, and following the convention established in Amendment 16, the non-allocated target species and bycatch most likely to be affected by the sector Operations Plans include spiny dogfish, skates, and monkfish. As indicated in Table 87 of the Final EIS for Amendment 16, these were the top three non-groundfish species landed by multispecies vessels in FY 2006 and FY 2007 under the Category B (regular) DAS program. These species have no allocation under the Northeast Multispecies FMP and are managed under separate FMPs. Monkfish and skates are commonly landed when caught. Spiny dogfish, which tend to be relatively abundant in catches, may be landed but are often the predominant component of the discarded bycatch. Monkfish may be discarded when regulations or market conditions constrain the amount of the catch that can be landed.

4.3.1 Spiny Dogfish

Life History: The spiny dogfish, *Squalus acanthias*, is distributed in the western North Atlantic from Labrador to Florida and are considered to be a unit stock off the coast of New England. In summer, dogfish migrate northward to the Gulf of Maine-Georges Bank region and into Canadian waters and return southward in autumn and winter. Spiny dogfish tend to school by size and, when mature, by sex. The species bears live young, with a gestation period of about 18 to 22 months, and produce between 2 to 15 pups with an average of 6. Size at maturity for females is around 31 in (80 cm), but can vary from 31 to 33 in (78 cm to 85 cm) depending on the abundance of females.

Population Management and Status: The fishery is managed under a FMP developed jointly by the NEFMC and MAFMC for federal waters and a plan developed concurrently by the Atlantic States Marine Fisheries Commission (ASMFC) for state waters. Spawning stock biomass of spiny dogfish declined rapidly in response to a directed fishery during the 1990's. Management measures, initially implemented in 2001, have been effective in reducing landings and reducing fishing mortality. Based upon the 2009 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.

Table 4.2.5-1
Commercial US Landings and Discards (mt) for Allocated and Non-allocated Target Species and Bycatch by Gear Type from 1996 to 2006 as presented in GARM III

	Trawl			Gillnet		Hook/Line[a]		Scallop Dredge		Other and/or Unknown		Total	
Stock/species	Landings	Large-mesh trawl discards	Small-mesh trawl discards	Landings	Discards	Landings	Discards	Landings	Discards	Landings	Discards	Landings[b]	Discards[b]
Georges Bank Cod	NA	1,789	--	NA	551	NA	--	NA	170	NA	352	73,806	2,860
Georges Bank Haddock	38,989	3,950[c]	--	883	61	2,461	380	--	31	297	--	42,626	4,423
Georges Bank Yellowtail Flounder	NA	1,280	134	NA	--	NA	--	NA	2,562	NA	--	27,960	3,976
Southern New England/Mid-Atlantic Yellowtail Flounder	NA	725	129	NA	--	NA	--	NA	1,119	NA	--	7,968	1,972
Gulf of Maine/Cape Cod Yellowtail Flounder	NA	1,123	33	NA	510	NA	--	NA	944	NA	--	15,796	2,611
Gulf of Maine Cod	22,435	5301[c]	--	17,532	4,036	3,077	--	--	--	562	--	43,606	9,337
Witch Flounder	26,046	1,831	469	395	--	--	--	--	--	587	181[d]	27,031	2,481
American Plaice	32,013	4,295	--	629	--	--	--	--	--	718	350[d]	33,363	4,645[e]
Gulf of Maine Winter Flounder	4,479	259	54	259	163	--	--	--	--	168	--	5,993	476
Southern New England/Mid-Atlantic Winter Flounder	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	31,146	1,481

Table 4.2.5-1 (continued)
Commercial US Landings and Discards (mt) for Allocated and Non-allocated Target Species and Bycatch by Gear Type from 1996 to 2006 as presented in GARM III

Stock/species	Trawl			Gillnet		Hook/Line[a]		Scallop Dredge		Other and/or Unknown		Total	
	Landings	Large-mesh trawl discards	Small-mesh trawl discards	Landings	Discards	Landings	Discards	Landings	Discards	Landings	Discards	Landings[b]	Discards[b]
Georges Bank Winter Flounder	18,202	169	47	--	--	--	--	210	418	135	--	18,546	634
White Hake	21,513	NA	NA	8,971	NA	1,567	NA	--	NA	495	NA	32,547	11,976
Pollock	NA	--	--	NA	--	NA	--	NA	--	NA	--	51,568	--
Acadian Redfish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,115	2,085
Ocean Pout	161	4,424	515	--	29	18	--	--	197	28	--	207	5,165
Gulf of Maine/Georges Bank Windowpane	1,966	3,584	403	4	--	--	--	3	615	7	248	1,978	4,850
Southern New England/Mid-Atlantic Windowpane	1,071	1,762	433	3	--	--	--	1	1,004	18	--	1,093	3,197
Gulf of Maine Haddock	6,396	--	--	1,091	--	724	--	NA	--	246	--	8,456	--
Atlantic Halibut	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	138	157
Atlantic Wolffish	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 4.2.5-1 (continued)
Commercial US Landings and Discards (mt) for Allocated and Non-allocated Target Species and Bycatch by Gear Type from 1996 to 2006 as presented in GARM III

Notes:

NA = landings or discard data not available for individual fishery gear type for this species.

-- = None reported

NMFS reports landings in metric tons. For consistency, this EA maintains that convention by reporting landings in metric tons. To covert metric tons to the English equivalent, short tons, multiply by 1.1

[a] Includes handline and bottom longline

[b] Total landings or discards may differ slightly from the sum of the individual fishery entries due to differences in rounding.

[c] Trawl mesh size not reported

[d] Includes reported shrimp trawl discard.

[e] 1998 through 2002 data as estimated by direct method (O'Brien and Esteves 2001, O'Brien et al. 2005)

4.3.2 Skates

Life History: The seven species in the Northeast Region skate complex are: little skate (*Leucoraja erinacea*), winter skate (*L. ocellata*), barndoor skate (*Dipturus laevis)*, thorny skate (*Amblyraja radiata*), smooth skate (*Malacoraja senta*), clearnose skate (*Raja eglanteria*), and rosette skate (*L. garmani*). The barndoor skate is the most common skate in the Gulf of Maine, on Georges Bank, and in southern New England. In the Northeast Region, the center of distribution for the little and winter skates is Georges Bank and southern New England. The thorny and smooth skates are commonly found in the Gulf of Maine. The clearnose and rosette skates have a more southern distribution, and are found primarily in southern New England and the Chesapeake Bight.

Skates are not known to undertake large-scale migrations. Skates tend to move seasonally in response to changes in water temperature, moving offshore in summer and early autumn and returning inshore during winter and spring. Members of the skate family lay eggs that are enclosed in a hard, leathery case commonly called a mermaid's purse. Incubation time is 6 to 12 months, with the young having the adult form at the time of hatching.

Population Management and Status: The Skate FMP was implemented in September 2003 with a primary requirement for mandatory reporting of skate landings by species by both dealers and vessels (http://www.nefmc.org/skates/fmp/fmp.htm). Possession prohibitions of barndoor, thorny, and smooth skates in the Gulf of Maine were also provisions of the FMP. A trip limit of 10,000 lbs (4,536 kg) was implemented for winter skate, and a Letter of Authorization is needed for the bait fishery (little skate) to exceed trip limits.

The final rule implementing Amendment 3 to the Northeast Skate Complex Fishery Management Plan (Skate FMP) was published on June 16, 2010, and became effective on July 16, 2010 (75 FR 34049). This amendment implemented a rebuilding plan for smooth skate and established an ACL and annual catch target (ACT) for the skate complex, total allowable landings (TAL) for the skate wing and bait fisheries, seasonal quotas for the bait fishery, reduced possession limits, in-season possession limit triggers, and other measures to improve management of the skate fisheries. Due to insufficient information about the population dynamics of skates, there remains considerable uncertainty about the status of skate stocks. Based on new biological reference points implemented in Amendment 3, smooth and thorny skates are considered to be overfished, but no skates are currently subject to overfishing; although thorny skate was considered to be subject to overfishing in 2007.

Skate landings have been reported to be generally increasing since 2000. Due to insufficient information about the population dynamics of skates, there remains considerable uncertainty about the status of skate stocks. The landings and catch limits proposed by Amendment 3 have been reported to have an acceptable probability of promoting biomass growth and achieving the rebuilding (biomass) targets for thorny skates. Modest reductions in landings and a stabilization of total catch below the median relative exploitation ratio is expected to cause skate biomass and future yield to increase.

4.3.3 Monkfish

Life History: Monkfish, *Lophius americanus*, also called goosefish, are distributed in the western North Atlantic from the Grand Banks and northern Gulf of St. Lawrence south to Cape Hatteras, North Carolina. Monkfish may be found from inshore areas to depths of at least 2,953 ft (900 m). Seasonal onshore-offshore migrations occur and appear to be related to spawning and possibly to food availability.

Female monkfish begin to mature at age 4, and 50 percent of females are mature by age 5 (about 17 in [43 cm]). Males generally mature at slightly younger ages and smaller sizes (50 percent maturity at age 4.2 or 14 in [36 cm]). Spawning takes place from spring through early autumn, progressing from south to north, with most spawning occurring during the spring and early summer. Females lay a buoyant egg raft or veil that can be as large as 39 ft (12 m) long and 5 ft (1.5 m) wide, and only a few mm thick. The eggs are arranged in a single layer in the veil, and the larvae hatch after about 1 to 3 weeks, depending on water temperature. The larvae and juveniles spend several months in a pelagic phase before settling to a benthic existence at a size of about 3 in (8 cm).

Population Management and Status: Monkfish are currently regulated by the Monkfish FMP, which was implemented in 1999 (NEFMC and MAFMC 1998). The FMP was designed to stop overfishing and rebuild the stocks through a number of measures, including: limiting the number of vessels with access to the fishery and allocating DAS to those vessels; setting trip limits for vessels fishing for monkfish; minimum fish size limits; gear restrictions; mandatory time out of the fishery during the spawning season; and a framework adjustment process.

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

4.3.4 Interaction between Gear and Non-allocated Target Species and Bycatch

The majority of the proposed sectors have minimal operational history; therefore, the analysis of interactions between gear and non-allocated target species and bycatch 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 gillnets, which are described in detail in Amendment 2 to the Monkfish FMP (NEFMC and MAFMC 2003). These same gear types would be used by FY 2011 sectors.

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

Of the non-allocated target species and bycatch considered in the EA, dogfish have the potential to interact with all gear types expected to be used by the sectors. Historic landings for non-allocated target species and bycatch from reporting time periods between FY 1996 to FY 2006 (Table 4.3.4-1) show that the majority of fish of all species are caught with otter trawls.

Table 4.3.4-1
Landings (mt) for Non-allocated Target Species and Bycatch by Gear Type[a]

	Gear Type									
	Trawl		Gillnet		Dredge		Other Gear		Total[b]	
Species	Landings	Discard	Landings	Discard	Landings	Discard	Landings	Discard	Landings	Discard
Monkfish	NA	16,516	NA	6,526	NA	16,136	NA	4 [c]	228,000	39,182
Skates	117,381	315,308	29,711	26,601	--	146,725	4,413	2646 [d]	151,505	491,280
Dogfish	24,368	61,914	72,712	39,852	--	--	946	--	98,026	101,766

Notes:

NA = landings or discard data not available for individual fishery gear type for this species.

-- = None reported

[a] monkfish 1996-2006, skates 1996-2006, dogfish 1996-2005

[b.] Total landings or discards may differ slightly from the sum of the individual fishery entries due to differences in rounding.

[c] Shrimp Trawl

[d] Line and shrimp trawl

Source: Northeast Data Poor Stocks Working Group 2007a; Northeast Data Poor Stocks Working Group 2007b ; Sosebee et al. 2008; NEFSC 2006a.

4.4 PROTECTED RESOURCES

There are numerous protected species that inhabit the environment within the Northeast Multispecies FMP management unit, and that, therefore, potentially occur in the operations area of the fishery. These species 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. As listed in Table 4.4.1-1, 13 marine mammal, sea turtle, and fish species are classified as endangered or threatened under the ESA; the remaining species in Table 4.4.1-1 are protected by the MMPA and are known to interact with the Northeast multispecies fishery. Non ESA-listed species protected by the MMPA that utilize this environment and have no documented interaction with the Northeast multispecies fishery will not be discussed in this statement.

4.4.1 Species Present in the Area

Table 4.4.1-1 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 sectors. Table 4.4.1-1 also includes two candidate fish species, and one proposed fish species (species being considered by 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, Atlantic bluefin tuna, 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 4.4.1-1
Species Protected Under the Endangered Species Act and/or Marine Mammal Protection Act that May Occur in the Operations Area for the FY 2011 Sectors[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
Atlantic Bluefin Tuna (*Thunnus thynnus*)	Candidate
Pinnipeds	
Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected

Table 4.4.1-1 (continued)
Species Protected Under the Endangered Species Act and/or Marine Mammal Protection Act that May Occur in the Operations Area for the FY 2011 Sectors[a]

Species	Status
Pinnipeds (continued)	
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.

At this time, Atlantic sturgeon has been proposed for listing under the ESA. A status review for Atlantic sturgeon was completed in 2007. NMFS has concluded that the U.S. Atlantic sturgeon spawning populations comprise five Distinct Population Segments (DPSs) (ASSRT, 2007). The Gulf of Maine 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. On October 6, 2010 (75 FR 61872 and 75 FR 61904), NMFS proposed listing five populations of Atlantic sturgeon along the U.S. East Coast as either threatened or endangered species. A final listing rule is expected by October 6, 2011.

Atlantic sturgeon from any of the five DPSs could occur in areas where the Northeast multispecies fishery operates, and the species has been captured in gear targeting multispecies (Stein et al. 2004a, ASMFC 2007). The proposed action to modify the Northeast Multispecies fishery is expected to be completed before the anticipated date of a final listing determination for Atlantic sturgeon. However, the conference provisions of the ESA apply to actions proposed to be taken by federal agencies once a species is proposed for listing (50 CFR 402.10). Therefore, this EA includes information on the anticipated effects of the action on Atlantic sturgeon.

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

It is expected that the sea turtle, cetacean, and pinniped species discussed below have the potential to be affected by the operation of the multispecies fishery, and thus the sectors. 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) can be found in a number of published documents. These include sea turtle status reviews and biological reports (NMFS and USFWS 1995; Marine Turtle Expert Working Group (TEWG) 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. In general, turtles 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). The trend is reversed in the fall as water temperatures cool. By December, turtles have passed Cape Hatteras, returning 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 are typically observed as far north as Cape Cod whereas the more cold-tolerant leatherbacks are observed in more northern Gulf of Maine waters in the summer and fall (Shoop and Kenney 1992, SEFSC 2010).

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).

The loggerhead sea turtle is listed as threatened throughout its worldwide range. On July 12, 2007, NMFS and USFWS (Services) received a petition from Center for Biological Diversity and Turtle Island Restoration Network to list the ''North Pacific populations of loggerhead sea turtle'' as an endangered species under the ESA. In addition, on November 15, 2007, the Services received a petition from Center for Biological Diversity and Oceana to list the ''Western North Atlantic populations of loggerhead sea turtle'' as an endangered species under the ESA. NMFS published notices in the *Federal Register*, concluding that the petitions presented substantial scientific information indicating that the petitioned actions may be warranted (72 FR 64585, November 16, 2007; 73 FR 11849; March 5, 2008). In 2008, a Biological Review Team (BRT) was established to assess the global population structure to determine whether DPSs exist and, if so, the status of each DPS. The BRT identified nine loggerhead DPSs, distributed globally (Conant et al. 2009). On March 16, 2010, the Services announced 12-month findings on the petitions to list the North Pacific populations and the Northwest Atlantic populations of the loggerhead sea turtle as DPSs with endangered status and published a proposed rule to designate nine loggerhead DPSs worldwide, seven as endangered (North Pacific Ocean DPS, South Pacific Ocean DPS, Northwest Atlantic Ocean DPS, Northeast Atlantic Ocean DPS, Mediterranean Sea DPS, North Indian Ocean DPS, and Southeast Indo-Pacific Ocean DPS) and two as threatened (Southwest Indian Ocean DPS and South Atlantic Ocean DPS). On March 22, 2011, the timeline for the final determination was extended for six months until September 16, 2011 (76 FR 15932).

4.4.2.2 Large Cetaceans

The most recent Marine Mammal Stock Assessment Report (SAR) (Waring et al. 2009) reviewed the current population trend for each of these cetacean species within U.S. Economic Exclusion Zone (EEZ) waters. The SAR also provided information on the estimated annual human-caused mortality and serious injury, as well as a description of the commercial fisheries that interact with each stock in the U.S. Atlantic. Information from the SAR is summarized below.

The western North Atlantic baleen whale species (North Atlantic right, humpback, fin, sei, and minke whales) follow a general annual pattern of migration from high latitude summer foraging grounds, including the Gulf of Maine and Georges Bank, and low latitude winter calving grounds (Perry et al. 1999, Kenney 2002). However, this is a simplification of species movements, and the complete winter distribution of most species is unclear (Perry et al. 1999, Waring et al. 2009). 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, and occur only infrequently within the U.S. EEZ (Waring et al. 2002).

For North Atlantic right whales, the available information suggests that the population increased at a rate of 1.8 percent per year between 1990 and 2005, and the total number of North Atlantic right whales is estimated to be at least 345 animals in 2005 (Waring et al. 2009). The minimum rate of annual human-caused mortality and serious injury to right whales averaged 3.0 mortality or serious injury incidents per year during 2003 to 2007 (Waring et al. 2009). Of these, an average of 0.8 mortality or serious injury incidents per year resulted from fishery interactions. Recent mortalities included six female right whales, including three that were pregnant at the time of death (Waring et al. 2009).

The North Atlantic population of humpback whales is estimated to be 7,698, although the estimate is considered to be biased toward underestimation (Waring et al. 2009). The best estimate for the GOM stock of humpback whale population is 847 whales (Waring et al. 2009). The population trend is considered positive for the GOM population, but there are insufficient data to estimate the trend for the larger North Atlantic population. Based on data available for selected areas and time periods, the minimum population estimates for other western North Atlantic whale stocks are 2,269 fin whales, 386 sei whales (Nova Scotia stock), 4,804 sperm whales, and 3,312 minke whales (Waring et al. 2009). Insufficient data exist to determine trends for any other large whale species.

The Atlantic Large Whale Take Reduction Plan (ALWTRP) was recently revised with publication of a new final rule (72 FR 57104, October 5, 2007) that is intended to continue to address entanglement risk of large whales (right, humpback, and fin whales, and acknowledged benefits to minke whales) in commercial fishing gear and to reduce the risk of death and serious injury from entanglements that do occur.

4.4.2.3 Small Cetaceans

Numerous small cetacean species (dolphins, pilot whales, and harbor porpoise) that occur within the area from Cape Hatteras through the Gulf of Maine are known to interact with 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 primarily occupy continental shelf waters (e.g., white-sided dolphin, harbor porpoise), while others are found primarily in continental shelf edge and slope waters (e.g., Risso's dolphin), and still others occupy all three habitats (e.g., common dolphin,

and spotted dolphin). Information on the western North Atlantic stocks of each species is summarized in Waring et al. (2009).

4.4.2.4 Pinnipeds

Of the four species of seals expected to occur in the area, harbor seals have the most extensive distribution with sightings occurring as 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, occurring primarily off 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 with the majority of harbor seal pupping likely occurring in U.S. waters and the majority of gray seal pupping occurring in Canadian waters, although there are at least three gray seal pupping colonies in U.S. waters as well. Harp and hooded seals are less commonly observed in U.S. EEZ waters. Both species form aggregations for pupping and breeding off eastern Canada in the late winter/early spring, and 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 (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 TC 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 TC 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 870 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).

4.4.3 Species Not Likely to be Affected

NMFS has determined that the action being considered in the 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 can be found in rivers along the western Atlantic coast from St. Johns River, Florida (although the species is possibly extirpated from this system), to the Saint John River in New Brunswick, Canada. 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, whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River, are listed as endangered under the ESA. Juvenile salmon in New England rivers typically migrate to sea in spring after a one- to three-year period of development in freshwater streams, and 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 and multispecies gear operates in the ocean at or near the bottom rather than near the surface. 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). Potential fishery interactions with North Atlantic right whale individuals (entanglement and/or mortality) are discussed in Section 4.4.2.2. The western North Atlantic population distribution 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). Five well-known habitats are used 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. The Great South Channel and Cape Cod and Massachusetts Bays occur in the northeastern U.S. waters and were, therefore, designated by NMFS 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 sector EAs and further in Section 5.0, sectors would result in a negligible effect on physical habitat; therefore, sectors in FY 2011 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 UU.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). Since operation of the sectors would not occur in waters that are typically used by hawksbill sea turtles, it is highly unlikely that its 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 (CeTAP) surveys of the mid- and North Atlantic areas of the outer continental shelf (CeTAP 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). Given that the species is unlikely to occur in areas where the sectors would operate, and given that the operation of the sectors would not affect the availability of blue whale prey or areas where calving and nursing of young occurs, 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). Typically, sperm whale distribution is concentrated east-northeast of Cape Hatteras in winter and shifts northward in spring when whales are found throughout the Mid-Atlantic Bight (Waring et al. 2006). Distribution extends further northward to areas north of Georges Bank and the Northeast Channel region in summer and then south of New England in fall, back to the Mid-Atlantic 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 CeTAP surveys was 5,879 ft (1,792 m) (CeTAP 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). Given that sperm whales are unlikely to occur in areas (based on water depth) where the sectors would operate, and given that the operation of the sectors would not affect the availability of sperm whale prey or areas where calving and nursing of young occurs, 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 (e.g., sand lance, herring, 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 versus schooling fish such as herring and mackerel that occur within the water column. Therefore, the continued authorization

of the multispecies fishery will not, nor would the approval of the FY 2011 sector's Operations Plan, affect the availability of prey for foraging humpback or fin whales.

4.4.4 Interactions Between Gear and Protected Resources

Commercial fisheries are categorized by NMFS 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 stock. The system is based on the numbers of animals per year that incur incidental mortality or serious injury due to commercial fishing operations relative to a stock's Potential Biological Removal (PBR) level (the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population). Tier 1 takes into account the cumulative mortality and serious injury to marine mammals caused by commercial fisheries while Tier 2 considers marine mammal mortality and serious injury caused by the individual fisheries; Tier 2 classifications are used in this EA to indicate how each type of gear proposed for use in the Proposed Action may affect marine mammals (NMFS 2009b). Table 4.4.4-1 identifies the classifications used in the final List of Fisheries (LOF) for FY 2010 (74 FR 58859, November 16, 2009; NMFS 2009b), which are broken down into Tier 2 Categories I, II, and III. A proposed LOF for FY 2011 was published on June 25, 2010 (75 FR 36318), but the LOF for FY 2011 has not yet been adopted and is not discussed further in this document.

Table 4.4.4-1
Descriptions of the Tier 2 Fishery Classification Categories (50 CFR 229.2)

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 gear is deployed 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. Large and small cetaceans and sea turtles are more prevalent within the operations area during the spring and summer, although 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 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). The potential for entanglements to occur is assumed to be higher in areas where more gear is set and in areas with higher concentrations of protected species.

Table 4.4.4-2 lists the marine mammals known to have had interactions with gear used by the Northeast multispecies fishery including sink gillnets, traps/pots, bottom trawls, and bottom longlines within the Northeast multispecies region, as excerpted from the LOF for FY 2010 ([75 FR 58850, November 16, 2009], also see Waring et al. 2009). Sink gillnets have the greatest potential for interaction with protected resources, followed by bottom trawls. Impacts to protected resources through interaction with bottom longline gear are not known within the operations area; 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 4.4.4-2
Marine Mammal Species and Stocks Incidentally Killed or Injured Based on Northeast Multispecies Fishing Areas and Gear Types (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	Mid-Atlantic gillnet	>670	Bottlenose dolphin, western North Atlantic (WNA), coastal[a]
			Bottlenose dolphin, WNA, offshore
			Common dolphin, WNA
			Gray seal, WNA
			Harbor porpoise, Gulf of Maine(GOM)/Bay of Fundy(BOF)
			Harbor seal, WNA
			Harp seal, WNA
			Humpback whale, GOM
			Long-finned pilot whale, WNA
			Minke whale, Canadian east coast
			Short-finned pilot whale, WNA
			White-sided dolphin, WNA

Table 4.4.4-2 (continued)
Marine Mammal Species and Stocks Incidentally Killed or Injured Based on Northeast Multispecies Fishing Areas and Gear Types (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 (continued)	Northeast sink gillnet	341	Bottlenose dolphin, WNA, offshore
			Common dolphin, WNA
			Fin whale, WNA
			Gray seal, WNA
			Harbor porpoise, GOM/BOF [a]
			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
Category II	Mid-Atlantic bottom trawl	>1,000	Common dolphin, WNA [a]
			Long-finned pilot whale, WNA [a]
			Short-finned pilot whale, WNA [a]
			White-sided dolphin, WNA
	Northeast bottom trawl	1,052	Common dolphin, WNA
			Gray seal, WNA[b]
			Harbor porpoise, GOM/BOF
			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]	unknown	Fin whale, WNA [d]
			Humpback whale, GOM
Category III	Northeast/Mid-Atlantic bottom longline/hook-and-line	46	None documented in recent years

Table 4.4.4-2 (continued)
Marine Mammal Species and Stocks Incidentally Killed or Injured Based on Northeast Multispecies Fishing Areas and Gear Types (based on 2010 List of Fisheries)

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.

[d] The fin whale noted as being killed or injured in the Atlantic mixed species trap/pot fishery was later determined to have been impacted by hagfish pot gear and is proposed for removal.

Marine mammals are taken in gillnets, trawls, and trap/pot gear used in the Northeast multispecies area. Of these gear types, gillnets are considered more detrimental to marine mammals such as pilot whales, dolphins, porpoises, and seals, as well as large marine whales. To minimize potential impacts to certain cetaceans, multispecies fishing vessels would be required to adhere to measures in the ALWTRP, which 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, and use of weak links, and sinking groundline. Fishing vessels would be required to comply with the ALWTRP in all areas where gillnets were used. The Bottlenose Dolphin Take Reduction Plan (BDTRP) and Harbor Porpoise Take Reduction Plan (HPTRP) would also be complied with within the Northeast multispecies area. The BDTRP would be complied with in the Mid-Atlantic gillnet region and restricts night-time use of gillnets. The HPTRP would be complied with in the Gulf of Maine to reduce interactions between the harbor porpoise and gillnets in New England. 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.

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 than with other gear types (NMFS 2009d). 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 Mid-Atlantic 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). Although sea turtles generally occur in more temperate waters than those in the Northeast multispecies area, impacts to sea turtles would likely still occur under the Proposed Action, but would be similar to those in the Common Pool.

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 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 frequency of encounters in the observer programs were expanded by total landings recorded in fishing vessel trip reports (VTR) rather than dealer data, since the dealer data does not include information on mesh sizes. Generally, the VTR data represent greater than 90 percent of total landings. Data were combined into division (identified as the first 2 digits in the statistical area codes), quarter, gear type (otter trawl (fish) and sink gillnet) and mesh categories. Mesh sizes were categorized for otter trawl as small (<5.5”) or large (greater than or equal to 5.5”) and small (<5.5”), large (between 5.5” and 8”) and extra large (>8”) in sink gillnets.

For each cell (year, division, quarter, gear, mesh), the ratio of sturgeon count to total kept weight of all species was calculated. This ratio was then applied to total weight in the cell recorded in the VTR data. No imputation was done at this time to estimate sturgeon in missing cells. Totals are presented for encounters as well as encounters where the observer recorded the fish as dead (a subset of total encounters). The two categories represent bounds of possible sturgeon mortalities. The results should not be considered definitive estimates of Atlantic sturgeon losses until further work can be done to account for missing cells. The NEFSC is undertaking additional analyses to account for the missing cells, and this will be available in the fall of 2011.

Below, the data for encounter rates by month and statistical area for each gear strata are presented (Tables 4.4.4-3 – 4.4.4-6). The expanded estimates of all sturgeon by quarter, division and year are in Tables 4.4.4-7 and 4.4.4-8. Total estimated dead sturgeon are in Tables 4.4.4-9 and 4.4.4-10. Composite estimates by year and gear type are provided in Table 4.4.4-11. Estimated total annual takes ranged from 1536 to 3221; estimated annual mortalities ranged from 37 to 376 sturgeon.

Table 4.4.4-3

Encounters of Atlantic Sturgeon and Unknown Sturgeon By Month, Area and Mesh Size In Otter Trawl Gear, 2006-2010 Combined.

Large mesh otter trawl

area	month 1	2	3	4	5	6	7	8	9	10	11	12
464	0		0		0					0	0	
465	0		0	0		0	0				0	0
511	0		0	0								0
512	0		0	0	0	0	0	0	0	0	0	0
513	0	0	0	0	0	0	0	0	0	0	0	0
514	3	0	0	0	0	0	0	0	0	0	0	0
515	0	0	0	0	0	0	0	0	0	0	0	0
521	0	0	0	0	0	0	0	0	0	0	0	0
522	0	0			0			0	0	0	0	
525				0	0			0				
526	0	0	0	0	0	0	0	0	0	0	0	0
537	0	0	0	0	0	0	0	0	0	0	0	0
538				0	0	0	0	0	0	0	0	
539	0	0	0	0	0	0	0	0	0	0	0	0
562					0			0				
611	0	0	0	0	0	0	0	0	0	0	0	0
612		**1**		0	**25**	**5**	**5**	0	**33**	**1**	0	0
613	0	0	0	**1**	0	0		0	0	0	0	0
614				**1**	0	0	0		0			
615	0		0		0	0	0	0	0		0	0
616	0	0	0	0						0	0	0
621	0	0	0		0	**2**	0	0	**18**	0	0	0
622	0	0	0	0							0	0
623			0	0								
625							0			0	0	0
626	0	0	0	0							0	0
627				0								
631	0	**2**										0
632		0										
635	0											0

small mesh otter trawl

area	month 1	2	3	4	5	6	7	8	9	10	11	12
465									0			
512							0		0		0	
513	0	0				0	0	0	0		0	
514	0	0	0				0	0	0	0	1	0
515	0		0			0	0		0		0	
521	0	0	0				0	0	0	0	0	0
522						0	0	0	0	0		
525	0	0	0	0	0	0	0	0	0	0	0	0
526	0	0	0				0	0	0	0	0	0
533				0								
534									0			
537	0	0	0	0	0	**1**	**1**	0	0	0	0	0
538				0	0	0	0	0	0	0		
539	0	0	0	0	0	1	0	0	0	0	0	0
562	0	0	0		0	0	0	0	0	0	0	0
611	0	0		0	1	0	0	0	0	0	0	0
612	0		0	**6**	**14**	**13**	0	0	**1**	0	0	0
613	0	0	0	0	0	0	**1**	0	0	**1**	**4**	0
614					**1**	**3**	0	0	0	0	0	
615	0	0	0	0	0	0	0	0	0	0	0	0
616	0	0	0	0	0	0	0	0	0	0	0	0
621	0	0	0	0	**3**	**1**	**1**	0	3	9	2	0
622	0	0	0	0	0	0	0	0	0	0	0	0
623	0	0	0	0				0	0	0	0	0
625	4		0			0				**1**	**12**	**2**
626	0	0	0	0		0	0	0	0	0	0	0
627	0	0		0			0	0	0	0		
631	**2**	**2**	**22**	**7**						**1**	**2**	**3**
632	0			0		0	0	0	0	0	0	0
633								0				
635	**10**	**4**	**8**	**1**						0	0	0
636	0	0		0		0	0	0	0	0	0	0

Table 4.4.4-4

Encounters of Atlantic sturgeon and Unknown Sturgeon By Month and Area In Small Mesh Sink Gillnet Gear, 2006-2010 Combined.

small mesh sink gillnet

	month											
area	1	2	3	4	5	6	7	8	9	10	11	12
464			0									
513								0	0	0		
514	0	0	0				0	0				
515			0									
521	0	0	0		0	0	0	0	0	0	0	**1**
522	0											
526					0							
537	0		0	0	0				0		0	
539					**1**							
611					0		0				0	
612				0	0	0	0	**1**	**1**	0		
613				0		0	0	0	0	0	0	
614				**5**	0	0		**1**	0	0	0	
615						0			0	0		
621			0	0	0			0	0	0	0	
625		0	0	**1**	0	**1**	0	0	0	**1**	0	0
626			0	0								
631	**1**	**6**	**8**	**2**	0				0	0	0	0
632				0								
635	**2**	0	**12**	**2**	0	0	0	0	0	0	**1**	**1**
636	0	0	0	0							0	
637	0											
638				0								

Table 4.4.4-5

Encounters of Atlantic Sturgeon and Unknown Sturgeon By Month and Area In Large Mesh Sink Gillnet Gear, 2006-2010 Combined.

large mesh sink gillnet

	month											
area	1	2	3	4	5	6	7	8	9	10	11	12
464		0	0						0			0
513	0		0	0	0	0	0	0	0	0	0	0
514	**6**	**5**	**2**	0	**1**	0	0	0	0	0	0	**2**
515	0	0	0	0	0	0	0	0	0	0	0	0
521	0	0		0	0	**1**	0	0	0	0	0	0
522		0			0							
525											0	
537	0	0		0	0		0					
538					0	0			0		0	
539		0		0	**4**	0	0	0	0	0	0	0
611				0	0			0			0	
612				**5**	0	0	**5**	**9**	0	0	**2**	0
613		0		0	4		0	0	0	0	0	0
614				**9**	**5**	**3**	**4**	**1**	0	0	0	0
615					0				0	0	0	0
621	0		0	**4**	0						0	0
625	**2**	**1**	0	**3**	**7**	**1**			0		**2**	**2**
631	**4**	**4**	0	0	**1**				0	0	0	**4**
632		0										
635	0	**1**	0	0	0	0	0	0	0	0	0	0
636	0	0	0	0								

Table4.4.4.4-6

Encounters of Atlantic Sturgeon and Unknown Sturgeon By Month and Area In Extra Large Mesh Sink Gillnet Gear, 2006-2010 Combined.

X-large sink gillnet

	month											
area	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
464												0
512										0		
513				0		0	0	0	0	0	0	0
514	0	0	0		0	0	0	0	1	0	0	0
515					0		0		0	0	0	0
521	**1**			0	0	0	**1**	0	**1**	**1**	**2**	**1**
522				0			0					0
526		0	0	0	0							
537	**1**	0	**1**	**1**	**5**	0	0	0	0	**1**	0	**1**
538					0							
539	0	0		0	**4**	0	0		0	0	0	0
611					0	**1**						
612	**5**	0	0	0	**1**	**3**	0			0	0	**1**
613	0	0		0	**2**	**1**		0	0	0	**7**	0
614	0			0	**5**	0					0	
615	0	0	0	0	**2**	**2**	0			0	0	**1**
616	0		0	0	0	0				0	0	0
621		0	0	0	**2**						0	
622					0							
625		**2**	**2**	**2**	**4**	0					**1**	**3**
626	0	0	0	**1**	**5**						0	0
631	**2**	**6**	**1**	**5**						0	0	**2**
635	0		**58**	**69**								

Table 4.4.4-7

All Atlantic Sturgeon Encounters Expanded By VTR Landings By Division, Mesh Size and Year for Sink Gillnets (2006 Across Top Row to 2010 Across Bottom Row).

small mesh sink gillnet
All sturgeon
expanded to VTR landings

division	1	2	3	4	
51					
52	0				
53			0		
61		157	9	0	
62		4	0	9	
63	0	14	0	6	198
51	0	0	0	0	
52			0	0	
53		12	0	0	
61	0	0	24	0	
62	0	15	0	0	
63	83	0	0	0	135
51	0	0	0	0	
52	0			0	
53		0	0	0	
61	0	0	0	0	
62	0	0	0	0	
63	0	0	0	0	0
51	0		0		
52	0		0		
53	0	0			
61	0	0	0	0	
62	0	0	0	0	
63	98	0	0	0	98
51			0		
52					
53				0	
61			0	0	
62		0	0	0	
63	81	13	0	0	94

large mesh sink gillnet
All sturgeon
expanded to VTR landings

division	1	2	3	4	
51	54	0	0	0	
52	0	0	0	0	
53		11	0	0	
61		638	72	0	
62	206	114	0	20	
63	0	0		3	1117
51	29	0	0	0	
52	0	0	0	0	
53	0	27	0	0	
61		0	184	87	
62	0	15		0	
63	34	17		24	416
51	47	0	0	65	
52	0	79	0	0	
53	0	17	0	0	
61		0	0		
62	189	22		20	
63	17	0	0	22	478
51	34	0	0	0	
52	0	0	0	0	
53		0	0	0	
61		0	453	0	
62		193		22	
63	0	0		0	702
51	39	12	0	0	
52	0	0	0	0	
53		0	0	0	
61	0	46	0	0	
62	0	24			
63	0	0	0	0	121

x-large mesh sink gillnet
All sturgeon
expanded to VTR landings

division	1	2	3	4	
51	0	0	63	0	
52	0	0	22	44	
53	0	14	0	0	
61	17	62	0	0	
62	0	54		0	
63	13	10			299
51	0	0	0	0	
52	0	0	23	14	
53	0	47	0	14	
61	0	131	0	0	
62	41	128		28	
63	51	17			493
51	0	0	0	0	
52	0	0	0	0	
53	10	0	0	0	
61	0	67	0	84	
62	0	14		0	
63	15	11		0	200
51	0	0	0	0	
52	0	0	0	13	
53	10	104	0	40	
61	40	66	0	136	
62	9	8		26	
63	18	158			628
51	0	0	0	0	
52	12	0	0		
53	0	0			
61	28	66	0	0	
62	0	6			
63		20			132

Table 4.4.4-8
All Atlantic Sturgeon Encounters Expanded By VTR Landings By Division, Mesh Size, and Year for Otter Trawls (2006 Across Top Row to 2010 Across Bottom Row)

small mesh otter trawl
All sturgeon
Expanded by ratio to VTR landings

	1	2	3	4	
51	0		0	0	
52	0	0	0	0	
53	0	0	0	0	
56					
61	0	996	0	184	
62	29	0	8	309	
63	20	0	0	0	1546

51	0		0	0	
52	0	0	0	0	
53	0	0	0	0	
56					
61	0	0	0	0	
62	0	0	0	449	
63	47			40	536

51	0	0	0	0	
52	0	0	0	0	
53	0	0	0	0	
56					
61	0	279	80	0	
62	0	21	0	19	
63	19		0	36	454

51	0		0	22	
52	0	0	0	0	
53	0	0	17	0	
56					
61	0	336	9	0	
62	0	9	48	24	
63	435	0	0	6	907

51	0		0	0	
52	0	0	0	0	
53	0	39	0	0	
56					
61	0	317	0	0	
62	0	0	0	0	
63	41	36	0	0	433

Large mesh otter trawl
All sturgeon
Expanded by ratio to VTR landings

	1	2	3	4	
51	33				
52	0	0	0	0	
53	0	0	0	0	
61		0	0		
62	0	28	0	0	
63	0	0	0		61

51	19	0	0	0	
52	0	0	0	0	
53	0	0	0	0	
56					
61	0	0	0	0	
62	0	0	252	0	
63	0			0	271

51		0		0	
52	0	0	0	0	
53	0	0	0	0	
61	44	218	108	22	
62	0	12	0	0	
63	0	0	0	0	404

51	0	0		0	
52	0	0	0	0	
53	0	0	0	0	
56		0		0	
61	0	113	23	0	
62	0	0	7	0	
63	0				143

51	0	0	0	0	
52	0	0	0	0	
53	0	0	0	0	
56		0	0		
61	0	437	601	0	
62	0	0	0	0	
63	172			0	1211

Table 4.4.4-9

Dead Atlantic Sturgeon Encounters Expanded By VTR Landings By Division, Mesh Size, and Year for Sink Gillnets (2006 Across Top Row to 2010 Across Bottom Row).

small mesh sink gillnet dead sturgeon expanded by VTR

		1	2	3	4	
2006	51					
	52	0				
	53			0		
	61		0	0	0	
	62		0	0	0	
	63	0	0	0	0	0
2007	51	0		0		
	52	0	0	0	1	
	53	0	0		0	
	61		0	0	0	
	62	0	0		0	
	63	0	0		0	1
2008	51	0		0		
	52	0	0	0	0	
	53		0			
	61		0	0		
	62	0	0		0	
	63	0	0	0	0	0
2009	51	0		0	0	
	52	0		0		
	53		0			
	61		0	0	0	
	62		0		0	
	63	0	0		0	0
2010	51			0	0	
	52			0	0	
	53					
	61		0	0	0	
	62		0			
	63	0	0	0	0	0

large mesh sink gillnet dead sturgeon expanded

		1	2	3	4	
2006	51	0	0	0	0	
	52	0	0	0	0	
	53		0	0	0	
	61	0	28	0	0	
	62	0	38	0	0	
	63	0	0		0	66
2007	51	15	0	0	0	
	52	0	0	0	0	
	53	0	0	0	0	
	61		0	20	0	
	62	0	0		0	
	63	0	0		0	35
2008	51	16	0	0	0	
	52	0	79	0	0	
	53	0	0	0	0	
	61		0	0		
	62	0	0		0	
	63	6	0	0	0	100
2009	51	0	0	0	0	
	52	0	0	0	0	
	53		0	0	0	
	61		0	0	0	
	62		0		0	
	63	0	0		0	0
2010	51	0	0	0	0	
	52	0	0	0	0	
	53		0	0	0	
	61	0	0	0	0	
	62	0	24			
	63	0	0	0	0	24

x-large mesh sink gillnet dead sturgeon expanded

		1	2	3	4	
2006	51	0	0	63	0	
	52	0	0	22	44	
	53	0	0	0	0	
	61	17	31	0	0	
	62	0	0	0	0	
	63	0	3		0	180
2007	51	0	0	0	0	
	52	0	0	0	0	
	53	0	31	0	14	
	61	0	112		0	
	62	0	107		9	
	63	0	0		0	273
2008	51	0	0	0	0	
	52	0	0	0	0	
	53	0	0	0	0	
	61	0	67	0	42	
	62	0	14		0	
	63	4	4		0	131
2009	51	0	0	0	0	
	52	0	0	0	13	
	53	10	69	0	0	
	61	0	33	0	82	
	62	0	8		0	
	63	0	11		0	226
2010	51	0	0	0	0	
	52	0	0	0	0	
	53	0	0			
	61	0	0	0	0	
	62	0	6			
	63		0			6

Table 4.4.4-10

Dead Atlantic Sturgeon Encounters Expanded By VTR Landings By Division, Mesh Size, and Year for Otter Trawl (2006 Across Top Row to 2010 Across Bottom Row).

		small mesh otter trawl Expanded by ratio to VTR landings dead sturgeon expanded					large mesh otter trawl dead sturgeon expanded to VTR all kept				
		1	2	3	4						
2006	51	0		0	0		51	0	0	0	0	
	52	0	0	0	0		52	0	0	0	0	
	53	0	0	0	0		53	0	0	0	0	
	56						61	0	0	0	0	
	61	0	0	0	61		62	0	0	0	0	
	62	29	0	0	0		63	0	0	0	0	0
	63	0	0	0	0	90						
							51	0	0	0	0	
2007	51	0		0	0		52	0	0	0	0	
	52	0	0	0	0		53	0	0	0	0	
	53	0	0	0	0		56	0	0	0	0	
	56						61	0	0	0	0	
	61	0	0	0	0		62	0	0	59	0	
	62	0	0	0	0		63	0	0	0	0	59
	63	4			0	4						
							51	0	0	0	0	
2008	51	0	0	0	0		52	0	0	0	0	
	52	0	0	0	0		53	0	0	0	0	
	53	0	0	0	0		61	0	36	108	0	
	56						62	0	0	0	0	
	61	0	0	0	0		63	0	0	0	0	145
	62	0	0	0	0							
	63	0		0	0	0	51	0	0	0	0	
							52	0	0	0	0	
2009	51	0		0	0		53	0	0	0	0	
	52	0	0	0	0		56	0	0	0	0	
	53	0	0	0	0		61	0	0	0	0	
	56						62	0	0	0	0	
	61	0	0	0	0		63	0	0	0	0	0
	62	0	0	0	0							
	63	19	0	0	0	19	51	0	0	0	0	
							52	0	0	0	0	
2010	51	0		0	0		53	0	0	0	0	
	52	0	0	0	0		56	0	0	0	0	
	53	0	0	0	0		61	0	0	0	0	
	56						62	0	0	0	0	
	61	0	0	0	0		63	0			0	0
	62	0	0	0	0							
	63	7	0	0	0	7						

Table 4.4.4-11

Summary of Atlantic Sturgeon Encounters of All Fish and Total Dead, By Gear Type and Year

expanded encounters

	sink gillnet	otter trawl	
2006	1614	1606	3221
2007	1044	807	1851
2008	678	857	1536
2009	1428	1050	2478
2010	347	1644	1991

expanded dead encounters

	sink gillnet	otter trawl	
2006	246	90	336
2007	309	63	373
2008	231	145	376
2009	226	19	245
2010	30	7	37

	Total encounters	dead
2006	3221	336
2007	1851	373
2008	1536	376
2009	2478	245
2010	1991	37

As illustrated above, for the years 2006 through 2010, an average of approximately 2,215 Atlantic sturgeon were taken by commercial fishing vessels using small and large mesh otter trawls and sink gillnets of varying mesh size (small to extra large). Of this number of encounters, there were approximately 273 mortalities (12%). As noted above, the data were provided by quarter (rather than by month given the relatively low frequency of occurrence). The total number of encounters in sink gillnet and otter trawl gear and associated mortalities for quarters 2 and 3 are most relevant for the timeframe of interest for this analysis. For sink gillnets, an average of 483 and 192 Atlantic sturgeon were encountered in the 2006 to 2010 timeframe in quarters 2 and 3, respectively. Of these, there were 133 (28%) mortalities in quarter 2 and 21 (11%) mortalities in quarter 3. For otter trawls, an average of 439 and 360 were encountered in quarters 2 and 3, respectively. It was not appropriate to average the number of mortalities over the five year time frame for quarters 2 and 3 given that all mortalities occurred in just two of the five years (2007 and 2008), and these mortalities occurred just in large mesh otter trawl gear (e.g., there were no mortalities in quarters 2 and 3 in small mesh otter trawl gear). It is important to note that

the information provided on mortality rates may be an underestimate as the rate of post-release mortality for those reportedly released alive is unknown.

Most fishing activity in the groundfish fishery occurs in the 500 series of statistical areas (i.e., waters North and east of Long Island, including waters off Rhode Island, Massachusetts, New Hampshire, and Maine) and using large-mesh sink gillnet and otter trawl gear, as required in the NE Multispecies FMP. Small mesh gear is deployed to target small-mesh NE multispecies (whiting, offshore hake, red hake), while extra-large mesh gear is typically utilized to target monkfish. Both of these latter fisheries occur in both northern waters and southern waters. As illustrated in Tables 4.4.4-3 – 4.4.4-11, there are substantially fewer encounters with Atlantic sturgeon in the 500 series of statistical areas than in the 600 series of statistical areas using these gears from 2006 through 2010. For example, out of a total of 1,179 total estimated encounters by both the large-mesh sink gillnet and otter trawl fisheries combined in 2006, 98 total encounters were estimated in northern waters (500 series of statistical areas) compared to 1,081 total encounters estimated in southern waters (600 series of statistical areas). This pattern is observed through 2010 (see Table 4.4.4-12). This table also illustrates that estimated encounters with Atlantic sturgeon in northern waters in large mesh sink gillnets and otter trawl gears have declined in recent years to nearly half of that estimated in 2006. It's important to note that, while these data should primarily represent estimated encounters in the groundfish fishery, because other fisheries utilize the same gear types and fish in the same area, it is likely that the actual encounters with Atlantic sturgeon by the groundfish fishery are lower than that presented in Table 4.4.4-12. However, because the NEFOP data available for this analysis did not identify the species targeted, a more precise evaluation of encounters in only the groundfish fishery cannot be specified at this time.

Table 4.4.4-12

Yearly Atlantic Sturgeon Encounters Expanded by VTR Landings for Northern (500 Series of Statistical Areas) and Southern Waters (600 Series of Statistical Areas) from 2006 Through 2010 for Both Large-Mesh Sink Gillnet and Otter Trawls

Year	Northern Waters Encounters	Southern Waters Encounters	Total Estimated Encounters
2006	98	1,081	1,179
2007	75	612	687
2008	208	674	882
2009	34	811	845
2010	51	1,281	1,332
Average	93	892	985

Seasonally, more encounters with Atlantic sturgeon are estimated during Quarters 4 and 1 (i.e., October through March) than during Quarters 2 and 3 (i.e., April through September) (see Table 4.4.4-13), averaging 64 from 2006-2010. Overall, encounters have dropped slightly in recent years during Quarters 4 and 1, but have remained relatively constant, if not declined slightly, in Quarters 2 and 3. Once again, because other fisheries utilize the same gear types and fish in the same area, it is likely that

the actual encounters with Atlantic sturgeon by the groundfish fishery are lower than that presented in Table 4.4.4-13.

Table 4.4.4-13

Atlantic Sturgeon Encounters Expanded by VTR Landings for Northern (500 Series of Statistical Areas) for Both Large-Mesh Sink Gillnet and Otter Trawls in Each Quarter of the Year.

Year	Quarters 4 and 1	Quarters 2 and 3	Total Estimated Encounters
2006	87	11	98
2007	48	27	75
2008	112	96	208
2009	34	0	34
2010	39	12	51
Average	***64***	***29***	***93***

As noted in Section 4.4.2.5, there are no total population size estimates for any of the 5 Atlantic sturgeon DPSs at this time. However, there are two estimates of spawning adults per year for two river systems (e.g., 870 spawning adults per year for the Hudson River, and 343 spawning adults per year for the Altamaha River). These estimates represent only a fraction of the total population size as Atlantic sturgeon do not appear to spawn every year and additionally, these estimates do not include subadults or early life stages. Between 2006 and 2010, an average of 154 Atlantic sturgeon mortalities occurred in quarters 2 and 3 in all sink gillnet gear (small mesh, large mesh, and extra large mesh), and some mortalities occurred in two years in large mesh otter trawls in these two quarters (36 in 2008; 167 total in 2007 and 2008). This includes mortalities in all areas. When evaluated only for northern waters predominantly fished by the groundfish fishery, mortalities in Quarters 2 and 3 range from 85 in 2006 to 0 in 2008 and 2010. Based on the available information, it is not possible at this time to attribute these mortalities to the DPS(s) from which these fish originated. However, given the migratory nature of subadult and adult Atlantic sturgeon, it is expected that these mortalities represent takes from multiple DPSs. This conclusion is supported by preliminary genetic mixed stock analyses undertaken by Dr. Isaac Wirgin from New York University and Dr. Tim King from the U.S. Geological Survey. These additional data support the conclusion from the earlier bycatch estimate that this fishery may interact with Atlantic sturgeon from now until the time a final listing determination is made for the species. Thus, while the operations of this fishery over the five months between May 1 and early October 2011 will most likely result in adverse impacts to Atlantic sturgeon, the magnitude of that interaction (e.g., up to 154 fish from multiple DPSs) during this short timeframe of interest is not likely to result in jeopardy to the species, thereby obviating the need for a conference as required under Section 7(a)(4) of the ESA. When evaluated only for northern waters predominantly, but not exclusively, fished by the groundfish fishery and for the entire year, yearly mortalities range from 129 in 2006 to 0 in 2008 and 2010.

4.5 HUMAN COMMUNITIES/SOCIAL-ECONOMIC ENVIRONMENT

This EA considers the formation of the FY 2011 sectors and evaluates the effect sectors 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 sector 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 sector participants as well as their homeports.

4.5.1 Overview of New England Groundfish Fishery

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. Today, the Northeast Multispecies FMP (large-mesh and small-mesh) includes a total of 13 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 wolffish) harvested from three geographic areas (Gulf of Maine, Georges Bank, and southern New England/Mid-Atlantic Bight) representing 19 distinct stocks. Fourteen of these stocks are considered allocated target stocks as described in Section 4.2.1, and are addressed in this EA.

Prior to the industrial revolution, the groundfish fishery focused primarily on cod. The salt cod industry, which preserved fish by salting while still at sea, supported a hook and line fishery that included hundreds of sailing vessels and shore-side industries including salt mining, ice harvesting, and boat building. Late in the 19th century, the fleet also began to focus on Atlantic halibut with landings peaking in 1896 at around 4,900 tons (4,445 mt).

From 1900 to 1930, the fleet transitioned to steam powered trawlers and increasingly targeted haddock for delivery to the fresh and frozen fillet markets. With the transition to steam powered trawling, it became possible to exploit the groundfish stocks with increasing efficiency. This increased exploitation resulted in a series of boom and bust fisheries from 1930 to 1960 as the North American fleet targeted previously unexploited stocks, depleted the resource, and then transitioned to new stocks.

In the early 1960's, fishing pressure increased with the discovery of haddock, hake, and herring off of Georges Bank and the introduction of foreign factory trawlers. Early in this time period, landings of the principal groundfish (cod, haddock, pollock, hake, and redfish) peaked at about 650,000 tons (589,670 mt). However, by the 1970's, landings decreased sharply to between 200,000 and 300,000 tons (181,437 and 272,155 mt) as the previously virgin GB stocks were exploited (NOAA 2007).

The exclusion of the foreign fishermen by the Fisheries Conservation and Management Act in 1976, coupled with technological advances, government loan programs, 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. This shift resulted in a temporary increase in domestic groundfish landings; however, overall landings (domestic plus foreign) continued to trend downward from about 200,000 tons (181,437 mt) to about 100,000 tons (90,718 mt) through the mid 1980's (NOAA 2007).

In 1986, NEFMC implemented the Northeast Multispecies FMP with the goal of rebuilding stocks. Since Amendment 5 in 1994, 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. Partially in response to those regulations, landings decreased

throughout the latter part of the 1980's until reaching a more or less constant level of around 40,000 tons (36,287 mt) annually since the mid 1990's.

In 2004, the final rule implementing Amendment 13 to the Northeast Multispecies FMP allowed for self-selected groups of limited access groundfish permit holders to form sectors. These sectors were allowed to develop a legally binding Operations Plan and operate under an ACE. While approved sectors were subject to general requirements specified in Amendment 16 in exchange for operating under an ACE, sector members were exempt from DAS and some of the other effort control measures that tended to limit the flexibility of fishermen. The 2004 rule also authorized implementation of the first sector, the GB Cod Hook Sector, and in 2006 a second sector, the GB Cod Fixed Gear Sector, was authorized.

Through Amendment 16, NEFMC sought to rewrite groundfish sector policies with a scheduled implementation date of May 1, 2009. When that implementation date was delayed until FY 2010, the NMFS Regional Administrator announced that, in addition to a previously announced 18 percent reduction in DAS, interim rules would be implemented to reduce fishing mortality during FY 2009. These interim measures generally reduced opportunity among groundfish vessels through differential DAS counting, elimination of the SNE/MA winter flounder SAP, elimination of the state waters winter flounder exemption, revisions to incidental catch allocations, and a reduction in some groundfish allocations (NOAA 2009).

In 2007, the Northeast multispecies fishery included 2,515 permits, about 1,500 of which were 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. The passage of Amendment 16 prior to FY 2010 issued in a new era of sector management in the New England groundfish fishery. In FY 2010, over 50 percent of eligible northeast groundfish multispecies permits and over 90 percent of landings history were associated with sectors. Approximately 56 percent of the eligible northeast groundfish multispecies permits constituting between approximately 99.4 percent and 77.5 percent of the various species ACLs were included in sectors for FY 2011. The remaining vessels were Common Pool groundfishing 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 middle Atlantic. Vessels from these ports pursue stocks in four geographic regions: Gulf of Maine, inshore Georges Bank, offshore Georges Bank, and southern New England. In 2007, the estimated dockside value of these 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 fishing represents an important occupation in many of the smaller port areas.

There is limited quantitative socio-economic data upon which to evaluate the 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. Regional economic models do exist that describe some of these inter-connections at that level (Olson and Clay 2001, Thunberg 2007, Thunberg 2008, NMFS 2010, and Clay et al. 2008).

4.5.2 Overview of the Primary Ports for FY 2011 Sectors

Sector fishermen would utilize ports throughout the Middle Atlantic and New England. A description of each of the primary ports is provided below (in alphabetic order) largely based on information provided in the Community Profiles for Northeast US Fisheries, by NEFSC (2009). Please refer to the source documents for a list of references as all of the in-text citations in this section are implied to be 'as cited in' NEFSC (2009).

4.5.2.1 Tremont (Bass Harbor), Maine

The town of Tremont, Maine (44.16°N, 68.24°W) is located in Hancock County, on Mount Desert Island. The town of Tremont includes the villages of Bass Harbor, Bernard, West Tremont, Seal Cove, and Gotts Island (Town of Tremont no date). The town is roughly 17 miles from Bar Harbor and 50 miles from Bangor (MapQuest 2006). The town encompasses 16.1 square miles (State of Maine 2004a).

History

Tremont was first settled in 1762 and was incorporated in 1848 when it split off from the town of Mount Desert. Most of the residents of Tremont in 1850 were fishermen, mariners, or boat builders. Most of the fishing vessel crews, fishing for cod and mackerel as far away as the Grand Banks and Labrador, were made up of extended families. Bass Harbor was an important area for shipbuilding, and also had a canning factory, the Underwood & Co. Cannery, which canned lobster, clams, and sardines. A lobster fishery developed partly out of demand from Boston. During the late 1800s, Tremont also became a tourist destination (Ellsworth American 2002a). The Underwood Cannery closed in 1978, and has been transformed into luxury condominiums (Maine Preservation 2001). Today Tremont's population nearly doubles during the summer, and increasingly those who have spent their summers here are now living in Tremont year-round (Ellsworth American 2002a).

Commercial Fishing

Landings for lobster were the most valuable, on average, in Tremont from 1997 to 2006, followed by the "Other" and scallop (Table 4.5.2-1). Vessel and homeport data are combined for Tremont, Bernard, and Bass Harbor in Table 4.5.2-2. Generally the combined number of homeported vessels increased, from 19 in 1997 to 28 in 2006. This trend was similar for the number of vessel owners living in Tremont, Bernard, and Bass Harbor (Table 4.5.2-2).

Table 4.5.2-1
Dollar Value of Federally Managed Groups Landed in Tremont

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Lobster	1
Other[a]	2
Scallop	3
Large-mesh Groundfish[b]	4
Monkfish	5
Small-mesh Groundfish[c]	6
Skate	7

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-2
Commercial Fishing Trends in Tremont, Bass Harbor, and Bernard

Year	Number of vessels with Tremont, Bass Harbor, and Bernard homeport	Number of vessels whose owner receives mail in Tremont, Bass Harbor, and Bernard
1997	19	14
1998	21	14
1999	23	16
2000	19	14
2001	19	16
2002	24	20
2003	23	21
2004	24	20
2005	25	18
2006	28	17

4.5.2.2 Beverly, Massachusetts

The city of Beverly, Massachusetts (42.55°N, 70.88°W) is located in Essex County and is part of the Boston-Cambridge-Quincy metro area (USGS 2008). Beverly is located approximately 20 miles (32 km) from the city of Boston. Beverly is drained by the Danvers River and is on the Massachusetts Bay

and Atlantic Ocean. The city is 22.7 square miles (58.8 square km) in size, 6.1 square miles (15.8 square km) or 27 percent of which is water (State of Massachusetts 2007).

History

Beverly was settled in 1626 and was originally part of the town of Salem. Historically, the city was a fishing, farming, and trading community (Harbormasters.org No Date). Beverly was officially incorporated in 1688. In the mid-1800's, 43 schooners from Beverly caught over 17,196,056 lbs (7,800 metric tons) of cod on the Scotian Shelf (Dybas 2006). Despite the long presence of the fishing community in Beverly, an increasing dependence on industry following the Civil War resulted in a decline in maritime activity in Beverly (National Park Service No Date). However, in recent years, industrialization has decreased and Beverly has turned to more academic and cultural pursuits (State of Massachusetts 2007).

Commercial Fishing

Landings for lobster were the most valuable, on average, in Beverly from 1997 to 2006, followed by the "Other" and large-mesh groundfish groupings (Table 4.5.2-3). While Beverly did not report landings from 1997 through 1999, landings decreased after 2000. The number of vessels homeported in Beverly fluctuated from 1997 to 2006, but overall there was a declining trend (Table 4.5.2-4). This was also true for vessels with owners living in Beverly. The level of fishing for homeported vessels peaked in 2005, dramatically increasing from the level recorded for 2004.

Table 4.5.2-3
Dollar Value of Federally Managed Groups Landed in Beverly

Federal Group	Rank Value of Average Landings from 1997-2006[c]
Lobster	1
Other[a]	2
Large-mesh Groundfish[b]	3
Monkfish	4
Dogfish	5
Summer Flounder, Scup, Black Sea Bass	6
Bluefish	7

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-4 Commercial Fishing Trends in Beverly		
Year	Number of vessels with Beverly homeport	Number of vessels whose owner receives mail in Beverly
1997	37	34
1998	30	29
1999	34	28
2000	35	29
2001	36	31
2002	33	34
2003	28	28
2004	26	27
2005	24	26
2006	19	23

4.5.2.3 Boothbay Harbor, Maine

The city of Boothbay Harbor, Maine (43.50°N, 69.38°W) is located in Lincoln County. Boothbay Harbor covers an area of 5.7 square miles (14.8 square km) of land area (State of Maine 2004b).

History

The Boothbay Regional Historical Society reports that, in the early 1600's, local fishermen supplied Pilgrim settlements, which exported "salt fish, timber and furs, until the Indian Wars wiped them out." Settlements of Scottish-Irish families followed in the early 1700's relying on trade and lumber. Boothbay was incorporated as a town in 1764. After the Revolutionary War and War of 1812, Boothbay vessels fished on the offshore banks for cod and inshore for mackerel. Shipbuilding, farming, ice-cutting, and brick-making flourished.

By 1881, Boothbay Harbor supported the fisheries community including an ice company, two marine railways, and a factory for canning lobsters (Varney 1886a). Fresh fish and lobsters were sent by steamer and rail to the Boston market. By the World Wars, Boothbay shipyards built military vessels including minesweepers (Boothbay Region Historical Society 2007). The boatyards now specialize in yachts, fishing vessels, ferries, and tugs (Boothbay Region Historical Society 2007).

Commercial Fishing

Boothbay Harbor has several seafood retailers and wholesalers such as Atlantic Edge Lobster, Boothbay Region Fish Market, Boothbay Lobster Wharf, and Bristol Lobster Sales (Boothbay Harbor Region Chamber of Commerce 2007). Lobsters are sold year-round, to as far as Boston and New York. Fresh Maine shrimp is sold in the winter (Maine Dept of Agriculture 2003).

Like many other coastal towns in Maine, lobster is the highest value species in Boothbay Harbor (Table 4.5.2-5). Other significant fisheries are small compared to lobster, but include "Other," large-

mesh groundfish, and monkfish. The value of fishing for homeported vessels has fluctuated between the years 2001 to 2006, while the number of vessels whose owner's city was Boothbay Harbor stayed relatively consistent (Table 4.5.2-6).

Table 4.5.2-5
Dollar Value of Federally Managed Groups Landed in Boothbay Harbor

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Lobster	1
Other[a]	2
Large-mesh Groundfish[b]	3
Monkfish	4
Scallop	5
Herring	6
Skate	7
Dogfish	8

Table 4.5.2-5 (continued)
Dollar Value of Federally Managed Groups Landed in Boothbay Harbor

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Small-mesh Groundfish[c]	9
Summer Flounder, Scup, Black Sea Bass	10

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-6 Commercial Fishing Trends in Boothbay Harbor		
Year	Number of vessels with Boothbay Harbor	Number of vessels whose owner receives mail in Boothbay Harbor
1997	40	24
1998	35	24
1999	37	22
2000	36	24
2001	41	29
2002	40	29
2003	41	25
2004	37	23
2005	40	26
2006	43	26

4.5.2.4 Boston, Massachusetts

The City of Boston (42.35º N, 71.06º W) is the capital of Massachusetts, and is located in Suffolk County. Boston Harbor opens out onto Massachusetts Bay (USGS 2008). The city covers a total of 89.6 square miles (232.1 square km), of which only 48.4 square miles (125.4 square km) (54 percent) is land.

History

The City of Boston has been an important port since its founding in 1630. Early on, it was the leading commercial center in the colonies (Banner 2005) and its economy was based on fishing, shipbuilding, and trade in and out of Boston Harbor. After the Revolutionary War, Boston became one of the wealthiest international ports in the world, exporting products such as rum, tobacco, fish, and salt (Lovestead 1997). Once an important manufacturing center, with many factories and mills based along Boston's numerous rivers and in the surrounding communities, many of the manufacturing jobs began to disappear around the early 1900's, as factories moved to the South. These industries were quickly replaced, however, by banking, financing, retail, and healthcare, and Boston later became a leader in high-tech industries (Banner 2005). The city remains the largest in New England and an important hub for shipping and commerce, as well as being an intellectual and educational hub. The Boston Fish Pier, located on the South Boston waterfront, has been housing fishermen for almost a century, and is the oldest continuously operating fish pier in the U.S. (BHA No Date) and home to the nation's oldest daily fish auction.

Commercial Fishing

More than 11,500 tons of fish are processed at the Fish Pier each year, of which 4,000 tons come from the 12 to 15 fishing vessels that dock there (BHA 2004). The landings show that large-mesh groundfish were the most valuable fishery in Boston, followed by monkfish and lobster (Table 4.5.2-7).

While the value of landings in the multispecies fishery was less in 2006 than the 1997-2006 average, the value of both lobster and monkfish to Boston fishermen increased.

There are far more vessels with their homeport in Boston than there are vessel owners in Boston, indicating that most fishermen who docked in Boston Harbor live elsewhere (Table 4.5.2-8). The landings values for both homeport and landed port varied over the period from 1997 to 2006, with no significant pattern. The landed port value exceeded the homeport value in every year, meaning some fishermen come from elsewhere to land their catch there.

Table 4.5.2-7
Dollar Value of Federally Managed Groups Landed in Boston

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Large-mesh Groundfish[a]	1
Monkfish	2
Lobster	3
Other[b]	4
Squid, Mackerel, Butterfish	5
Skate	6
Scallop	7
Herring	8
Summer Flounder, Scup, Black Sea Bass	9
Small-mesh Groundfish[c]	10
Bluefish	11

Table 4.5.2-7 (continued)
Dollar Value of Federally Managed Groups Landed in Boston

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Dogfish	12
Tilefish	13

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-8 Commercial Fishing Trends in Boston		
Year	Number of vessels with Boston homeport	Number of vessels whose owner receives mail in Boston
1997	66	16
1998	49	10
1999	45	8
2000	37	10
2001	42	9
2002	45	9
2003	42	9
2004	43	9
2005	46	8
2006	46	7

4.5.2.5 Chatham, Massachusetts

Chatham, Massachusetts is located at the southeastern tip of Cape Cod in Barnstable County, approximately 89 miles (143 km) from Boston. To the east is the Atlantic Ocean, to the south is Nantucket Sound, and to the north is Pleasant Bay. The only adjacent town (located at both the north and west town line boundaries) is Harwich. Major geographical features of the town are hills, wooded uplands, extensive barrier beaches and spits, harbors, numerous small estuaries, and salt and freshwater ponds (Town of Chatham No Date).

History

Chatham was an English settlement in the mid 1600's. The population began to stabilize with the fishing trade, ship building, fishing, and salt making in the mid 18th century. With the building of the railroad in 1887, Chatham quickly became a summer resort destination for wealthy people. By 1950, the summer season population was more than double the year-round population. Chatham now receives up to 25,000 visitors each summer (Town of Chatham No Date). Although the cost of living is increasing in Chatham from the dominant tourism industry, there is still a fishing community using a range of harvest techniques from the more traditional hook and line and weir fishing to the more modern trawling, gillnetting, scalloping, etc., as well as other important shellfisheries. While the fishing industry exists and is determined to survive through the difficult period of stock depletion and strict fishery regulations, many changes both in and out of the town are putting pressure on the industry.

Commercial Fishing

Federal landed value data reveals that large-mesh groundfish were the highest value catch between the years 1997 and 2006. There are a variety of landed groups in Chatham, with large-mesh groundfish, "Other," and lobster yielding the highest values (Table 4.5.2-9). The number of vessels whose homeport was Chatham stayed relatively consistent over the 1997-2006 period, with a small spike in 2002 and a significant decline in 2006. Likewise, the level of fishing homeport value stayed consistent

during the same time. The number of vessels whose owner's city was Chatham fluctuated between 61 and 94 vessels, showing the same decline in 2006 (Table 4.5.2-10).

Table 4.5.2-9
Dollar Value of Federally Managed Groups Landed in Chatham

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Large-mesh Groundfish[a]	1
Other[b]	2
Lobster	3
Scallop	4
Monkfish	5
Dogfish	6
Skate	7
Squid, Mackerel, Butterfish	8
Summer Flounder, Scup, Black Sea Bass	9
Bluefish	10
Small-mesh Groundfish[c]	11

Table 4.5.2-9 (continued)
Dollar Value of Federally Managed Groups Landed in Chatham

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Surf Clams, Ocean Quahog	12
Tilefish	13
Herring	14

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-10 Commercial Fishing Trends in Chatham		
Year	Number of vessels with Chatham homeport	Number of vessels whose owner receives mail in Chatham
1997	146	87
1998	131	75
1999	130	77
2000	131	79
2001	135	81
2002	162	94
2003	161	94
2004	145	82
2005	136	72
2006	117	61

4.5.2.6 Chincoteague, Virginia

The town of Chincoteague (37.93°N, 75.38°W), is located in Accomack County in the state of Virginia on Assateague Island. The town has a total area of 37.1 square miles, of which 27.4 square miles is water (USGS 2008). It is located about 3.5 hours from Washington D.C., about 4 hours from Philadelphia and about 5.5 hours from New York (AssateagueIsland.com).

History

Chincoteague is named for the local Indian tribe that originally lived in the area called the Gingo-Teague Tribe. The first settlement came about in the mid-17th Century when Colonel Daniel Jenifer applied for a grant to transport people to both Chincoteague and Assateague Islands. The first people to settle here were farmers who raised stock. The town grew slowly and lived mostly in isolation, with residents only traveling to the mainland for trading. This continued until the late 1800s. People would trade as much as possible, gathering numerous supplies so they could make as few trips as possible to the mainland.

Commercial Fishing

The most valuable species in Chincoteague is scallops, followed by summer flounder, scup, and black sea bass, both with 2006 values significantly higher than the ten year averages (Table 4.5.2-11). The 2006 values of “Other”, monkfish, and lobster were also greater than the ten year averages. The number of vessels home ported in Chincoteague generally increased until 2003 when the number of home ported vessels declined yearly through 2006 (Table 4.5.2-12). The number of vessels whose owners live in Chincoteague also followed a similar trend as the number of home port vessels. While the value for home ported vessels in Chincoteague increased until 2003, the level of fishing landed port continued to increased significantly throughout the 1997 to 2006 time period, with the exception of a decline, compared to 2005, in 2006 (Table 4.5.2-12).

Table 4.5.2-11
Dollar Value of Federally Managed Groups Landed in Chincoteague

Federal Group	Average from 1997-2006[d]	2006 only[d]
Scallop	$2,730,647	7,752,896
Summer Flounder, Scup, Black Sea Bass	$1,126,760	2,159,348
Other[a]	$506,696	921,375
Monkfish	$401,496	540,864
Lobster	$61,952	143,776
Dogfish	$51,843	38,035
Squid, Mackerel, Butterfish	$38,565	12,133
Bluefish	$12,833	54,857
Skate	$6,221	1,710
Tilefish	$1,522	14
Small-mesh Groundfish[c]	$379	0
Large-mesh Groundfish[b]	$293	0

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[c] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-12
Commercial Fishing Trends in Chincoteague

Year	Number of vessels with Chincoteague homeport	Number of vessels whose owner receives mail in Chincoteague	Value of landings among vessels homeported in Chincoteague[a]	Value of fisheries landed in Chincoteague[a]
1997	13	10	$6,601	$906,166
1998	15	15	$24,382	$763,754
1999	17	15	$48,132	$2,138,891
2000	21	16	$362,409	$2,431,371
2001	24	17	$354,429	$2,569,596
2002	28	18	$321,982	$2,877,693
2003	26	18	$503,801	$4,078,803
2004	22	17	$299,244	$7,248,586
2005	25	17	$311,281	$14,752,188
2006	22	16	$333,110	$11,625,008

Note:

[a] All values are reported in nominal U.S. dollars.

4.5.2.7 Cundy's Harbor, Maine

The Village of Cundy's Harbor (44.40º N, 69.89º W) is located on Casco Bay within the town of Harpswell, in Cumberland County, Maine. The town of Harpswell is made up of a 10-mile-long (16 km) peninsula extending into Casco Bay. It also includes three large islands, Bailey Island, Orr Island, and Great (Sebascodegan) Island, and over 200 small islands, creating over 216 miles (348 km) of coastline for the town (TPL 2007). Cundy's Harbor is located on the tip of Great Island (USGS 2008).

History

The town of Harpswell is geographically spread out, and is divided into five main villages: Cundy's Harbor, Harpswell, South Harpswell, Bailey Island, and Orr Island. Cundy's Harbor is the oldest lobstering community in Maine (TPL 2007). Harpswell was incorporated as a town in 1758, under what was then the Massachusetts Bay Colony. Many tall ships, sloops, and schooners were built there during the 1800's, and fishing has been an important economic activity for the town for centuries. Today the town is often considered to have three populations: commuters, who reside there but work in Portland Harbor, Bath, or Brunswick; retirees who have moved to Harpswell; and "working townsfolk," many of whom earn their income from fishing (Hall-Arber et al. 2001).

Commercial Fishing

There are multiple commercial wharves including Cundy's Harbor, Holbrook's, Hawkes, Mill's Ledge Seafood, Watson's, and Oakhurst Island. Overall, lobster dominates the landings in Cundy's Harbor, worth more than $2.5 million in 2006 (Table 4.5.2-13). Landings in the "Other" species grouping were also significant. The level of landings in Cundy's Harbor overall varied during this time period between about $1.5 million and over $3.4 million, with no discernible pattern (Table 4.5.2-14). The level of homeport fishing for Cundy's Harbor was consistently lower than the level of landings there overall, indicating that fishermen from other harbors land their catch there. The level of fishing for homeported values was also variable. The number of homeported vessels in Cundy's Harbor showed somewhat of a declining trend from 1997 to 2006, while the number of vessels with owners living in Cundy's Harbor declined sharply, from 11 in 1997 to three in 2006.

Table 4.5.2-13
Commercial Fishing Trends in Cundy's Harbor

Year	Number of vessels with Cundy's Harbor homeport	Number of vessels whose owner receives mail in Cundy's Harbor	Value of landings among vessels homeported in Cundy's Harbor[a]	Value of fisheries landed in Cundy's Harbor[a]
1997	28	11	$2,053,625	$2,595,709
1998	21	7	$1,611,016	$1,577,290
1999	21	6	$1,343,196	$3,248,354
2000	17	3	$1,361,446	$3,329,120
2001	20	2	$1,371,412	$2,636,583
2002	25	2	$2,029,047	$1,797,178
2003	21	1	$1,849,415	$2,191,411
2004	19	2	$1,676,130	$3,230,312
2005	19	2	$2,573,070	$3,479,115
2006	20	3	$2,708,258	$3,206,997

Note:
[a] All values are reported in nominal U.S. dollars.

Table 4.5.2-14
Dollar Value of Federally Managed Groups Landed in Cundy's Harbor

Federal Group	Average from 1997-2006[d]	2006 only[d]
Lobster	$2,088,171	$2,512,267
Other[a]	$500,190	$385,155
Large-mesh Groundfish[b]	$109,930	$285,239
Monkfish	$26,098	$17,655
Herring	$3,671	$0
7Dogfish	$667	$6,667
Scallop	$380	$0
Skate	$106	$0
Small-mesh Groundfish[c]	$12	$0
Squid, Mackerel, Butterfish	$1	Confidential

Notes:
[a] "Other" species includes any species not accounted for in a federally managed group.
[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.
[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).
[d] All values are reported in nominal U.S. dollars.

4.5.2.8 Gloucester, Massachusetts

The city of Gloucester (42.62°N, 70.66°W) is located on Cape Ann, along the northern coast of Massachusetts in Essex County. It is 30 miles (48 km) northeast of Boston and 16 miles (26 km) northeast of Salem. The area encompasses 41.5 square miles (107 square km) of territory, of which 26 square miles (67 square km) is land (USGS 2008).

History

The history of Gloucester has revolved around the fishing and seafood industries since its settlement in 1623. By the mid 1800's, Gloucester was regarded by many to be the largest fishing port in the world. The construction of memorial statues and an annual memorial to fishermen demonstrates that the historic death tolls in commercial fisheries are still in the memory of the town's residents. The town is well-known as the home of Gorton's frozen fish packaging company, the nation's largest frozen seafood company. Enactment of the Magnuson-Stevens Act prevented foreign vessels from fishing within the waters of the U.S. EEZ, and Gloucester's fishing fleet soon increased along with other communities -- only to decline with the onset of major declines in fish stocks and subsequent strict catch regulations. For more detailed information regarding Gloucester's history, see Hall-Arber et al. (2001).

Commercial Fishing

Although there are threats to the future of Gloucester's fishery, the fishing industry remains strong in terms of recently reported landings. Gloucester's commercial fishing industry had the 13th highest landings in the U.S. and the nation's ninth highest landing value in 2002 Gloucester's federally managed group with the highest landed value was large-mesh groundfish worth nearly $20 million in 2006 (Table 4.5.2-15). Lobster landings were second in value, bringing in more than $10 million in 2006, a significant increase from the 1997-2006 average value of just over $7 million. Monkfish and herring were also valuable species; both had more valuable landings in 2006 than the 10-year average value. The number of vessels homeported in Gloucester increased slightly from 1997 to 2006 (Table 4.5.2-16).

Table 4.5.2-15
Dollar Value of Federally Managed Groups Landed in Gloucester

Federal Group	Average from 1997-2006[d]	2006 only[d]
Large-mesh Groundfish[a]	$17,068,934	$19,577,975
Lobster	$7,036,231	$10,179,221
Monkfish	$3,556,840	$4,343,644
Other[b]	$3,246,920	$1,906,551
Herring	$3,127,523	$5,623,383
Squid, Mackerel, Butterfish	$1,065,567	$3,692,506
Scallop	$735,708	$1,113,749
Small-mesh Groundfish[c]	$732,353	$254,287
Dogfish	$375,972	$316,913
Skate	$63,488	$27,334
Tilefish	$52,502	$245,398
Surf Clams, Ocean Quahog	$29,033	$77,805
Bluefish	$21,672	$18,116
Summer Flounder, Scup, Black Sea Bass	$1,286	$603

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-16
Commercial Fishing Trends in Gloucester

Year	Number of vessels with Gloucester homeport	Number of vessels whose owner receives mail in Gloucester	Value of landings among vessels homeported in Gloucester [a]	Value of fisheries landed in Gloucester[a]
1997	277	216	$15,483,771	$23,497,650
1998	250	196	$18,078,326	$28,394,802
1999	261	199	$18,396,479	$25,584,082
2000	261	202	$19,680,155	$41,929,807
2001	295	230	$18,614,181	$37,961,334
2002	319	247	$21,316,029	$37,795,464
2003	301	225	$22,451,526	$37,795,464
2004	298	227	$24,531,345	$42,760,975
2005	287	217	$34,319,544	$45,966,974
2006	284	213	$34,255,146	$47,377,485

Note:
[a] All values are reported in nominal U.S. dollars.

4.5.2.9 Harwich, Massachusetts

Harwichport (41.67°N, 70.08°W) is located in Barnstable County, 15 miles (24 km) east of Hyannis along Highway 28, in the Barnstable Town metro area. The town of Harwich is made up of seven villages at the edge of Cape Cod. These include the North, South, East and West Harwiches; Harwich Center; Harwichport; and Pleasant Lake (Cape Cod Connection 2007).

History

Harwich was settled around 1665 and was originally known as Satucket until it was incorporated as a town in 1694. The town was once a shipbuilding and whaling center. When the whaling industry collapsed due to the discovery of terrestrial sources of oil, the community shifted its emphasis to cod fishing. By 1802, 15 to 20 ships were shore fishing. Another four ships were cod fishing in Labrador and Newfoundland. By 1851, there were 48 ships employing 577 men and bringing in thousands of tons of cod and mackerel. By the latter part of the 19th century, the decline of the fishing industry in Harwich was due to increases in the size of ships that surpassed the ability of the shallow port to house them. As a result, residents turned to the development of cranberry bogs and resorts for summer tourism.

Cranberry farming continues to be the biggest industry in Harwich. The town's population triples during the summer season, with visitors arriving to enjoy local freshwater and saltwater beaches, fishing, bird watching, scuba diving, and sailing.

Commercial Fishing

There are approximately 735 boats either moored or docked in Harwichport harbors. Of these, 735 boats, approximately 35 to 40 are small commercial fishing vessels, and there is an estimated transient population of 68 vessels. Almost all are involved in single-day hook fishing trips, mostly for groundfish (such as cod and haddock). The bottom longline fishery has also provided quality fish to Cape Cod for hundreds of years.

The most valuable landings in Harwichport were from the "Other" species grouping, followed by groundfish. The landings of both of these groups was considerably less in 2006 than the average landed values for the period 1997 to 2006 (Table 4.5.2-17). The number of homeported vessels in Harwichport increased from 55 in 1998 to 65 in 2002, and then fell again to 48 in 2006 (Table 4.5.2-18). The number of vessels with city owners in Harwich showed a similar trend, but with fewer vessels, indicating that many vessels ported in Harwich have owners in other communities.

Table 4.5.2-17
Dollar Value of Federally Managed Groups Landed in Harwichport

Federal Group	Rank Value of Average Landings from 1997-2006[c]
Other[a]	1
Large-mesh Groundfish[b]	2
Scallop	3
Lobster	4
Summer Flounder, Scup, Black Sea Bass	5
Squid, Mackerel, Butterfish	6
Bluefish	7
Dogfish	8
Monkfish	9
Skate	10

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-18 Commercial Fishing Trends in Harwichport		
Year	Number of vessels with Harwichport homeport	Number of vessels whose owner receives mail in Harwichport
1997	57	30
1998	55	29
1999	56	33
2000	60	37
2001	64	40
2002	65	45
2003	58	37
2004	59	41
2005	55	38
2006	48	38

4.5.2.10 Hyannis, Massachusetts

The village of Hyannis is part of the Town of Barnstable, Massachusetts (41.70º N, 70.30º W), which is located on Cape Cod, in Barnstable County. Barnstable straddles the width of the Cape, and is situated along Cape Cod Bay to the north and Nantucket Sound to the south, bordering Yarmouth and Dennis to the east and Sandwich and Mashpee to the west (USGS 2008). This town encompasses a total of 76.3 square miles (198 square km), of which 60.0 square miles (155 square km) are land and the rest is water (State of Massachusetts 2007).

History

In 1639, settlers that arrived from elsewhere in Plymouth Colony named the community after Barnstable, England. Originally a farming community, fishing and shore whaling soon became important industries (Hyannis Chamber of Commerce No Date); thus beginning Barnstable's long history with harvesting resources from the sea. Cotuit Oyster Company has been harvesting and selling oysters in Cotuit since 1837 (Maroney 2004). Relics of Barnstable's history as an important fishing port still remain on Freezer Point on Barnstable's harbor, in the form of the old Cannery, built in 1943, where thousands of pounds of fish were canned and shipped around the country, and the old fish house next door (Szmit 2005). Today, the town of Barnstable includes seven villages: Barnstable, Centerville, Cotuit, Hyannis, Marstons Mills, Osterville, and West Barnstable. The village of Barnstable is the center of the Barnstable County government, and Hyannis is the commercial and town government center of Barnstable.

Commercial Fishing

Available landings and vessel data combine Barnstable, Hyannisport, and Cotuit, as all three are commercial ports within the town of Barnstable. On average, lobster was the most valuable species landed in Barnstable from 1997 to 2006, with average landings of $1.3 million (Table 4.5.2-19). Lobster landings in 2006 were worth considerably more than this, at over $1.8 million. After lobster, landings in the "Other" species grouping (which likely includes crab and shellfish) and in scallops were also valuable; landings of both were far greater in 2006 than the 10-year average values. In general, lobsters

are landed in Hyannisport, while "Other" species, primarily shellfish, are landed in Barnstable Harbor, which has an important shellfishery. Overall, the value of landings in Barnstable was very low for 1997 to 1999, but then did not fall below $1.5 million, with a high of just under $5 million in 2005 (Table 4.5.2-20). The value of fishing for homeported vessels was high in every year, with a low of $2.5 million in 2004 and a high of $5.6 million in 2005, with no discernible pattern. The number of homeported vessels increased from 1999 to 2002, with 53 in 2002, and then dropped down to 30 in 2006. The number of vessels with owners living in Barnstable had a similar trend, increasing to a high of 52 in 2002, and falling to 32 in 2006. The similarity of these two numbers indicates that most vessel owners living in Barnstable also keep their vessels there.

Table 4.5.2-19
Dollar Value of Federally Managed Groups Landed in Barnstable

Federal Group	Average from 1997-2006[c]	2006 only[c]
Lobster	$1,297,677	$1,827,462
Other[a]	$413,316	$1,717,062
Scallop	$187,238	$1,052,019
Summer Flounder, Scup, Black Sea Bass	$110,690	$260,226
Surf Clams, Ocean Quahog	$76,817	$63,859
Large-mesh Groundfish[b]	$5,307	$14,403
Bluefish	$2,693	$9,534
Monkfish	$2,156	$5,169
Squid, Mackerel, Butterfish	$1,057	$1,292
Skate	$107	$890
Dogfish	$15	$150
Lobster	$1,297,677	$1,827,462

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] All values are reported in nominal U.S. dollars.

Table 4.5.2-20 Commercial Fishing Trends in Barnstable				
Year	Number of vessels with Barnstable home-port	Number of vessels whose owner receives mail in Barnstable	Value of landings among vessels home-ported in Barnstable[a]	Value of fisheries landed in Barnstable[a]
1997	51	43	$3,051,808	$101,199
1998	41	36	$2,869,649	$48,110
1999	37	35	$3,007,525	$80,121
2000	39	41	$2,846,808	$2,501,746
2001	48	46	$3,379,368	$2,927,422
2002	53	52	$4,065,432	$1,892,440
2003	42	39	$3,352,301	$1,921,826
2004	40	39	$2,564,272	$1,575,896
2005	34	35	$5,610,276	$4,969,897
2006	30	32	$5,020,077	$4,952,066

Note:

[a] All values are reported in nominal U.S. dollars.

4.5.2.11 Jonesport, Maine

The town of Jonesport, Maine (44.33°N, 67.30°W) is located in Washington County on the open Atlantic Ocean. West Jonesport is connected to Beals Island by a bridge and the city is situated about 74 miles (119 km) from Bar Harbor, Maine. Jonesport is a peninsula jutting about 6 miles (10 km) out into the ocean and has a total area of about 10 square miles (16 km) of which 72 percent is water (State of Maine 2004c).

History

In Jonesport and Beals Island, 50 to 75 percent of the population depends directly on fishing. Similar to other Downeast coastal communities, there is relatively little non-fishing related employment. There were three sardine canneries in Jonesport in the past. Today, lobster fishing is the dominant fishery, but community members point out that their industry has a history of fishing a diverse array of species. The only substantial income apart from fishing-related business is seasonal tourism.

Commercial Fishing

Lobster is by far the most valuable species during the 1997-2006 period (Table 4.5.2-21). Species that also brought considerable value to Jonesport in 2006 included surf clams and ocean quahogs, "Other," and scallops. Overall, the value of both landings in Jonesport and of fish landed by vessels listing Jonesport as their homeport had increased during the 1997-2006 period, as had the number of vessels using Jonesport as their homeport, and the number of vessels registered to residents (Table 4.5.2-22). The overall level of landings in Jonesport increased steadily each year.

Beals-Jonesport Co-op Inc. in Jonesport is a lobster fisherman's cooperative, both wholesale and retail, handling 500,000 to 800,000 pounds (226,796 to 362,874 kg) of lobster and 200,000 to 400,000 pounds (90,718 to 181,437 kg) of live crab a year. During the winter months, sea urchin fishermen use the facility. The co-op also sells bait, marine supplies, fuel and gas, and wholesale picked crabmeat (Maine Department of Agriculture 2003). The town has seafood dealers such as Carver Shellfish and Old Salt Seafood (Maine DMR 2005).

Table 4.5.2-21
Dollar Value of Federally Managed Groups Landed in Jonesport

Federal Group	Rank Value of Average Landings from 1997-2006[c]
Lobster	1
Surf Clams, Ocean Quahog	2
Other[a]	3
Scallop	4
Large-mesh Groundfish[b]	5
Dogfish	6

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-22
Commercial Fishing Trends in Jonesport

Year	Number of vessels with Jonesport homeport	Number of vessels whose owner receives mail in Jonesport
1997	50	32
1998	50	29
1999	54	30
2000	59	29
2001	61	33
2002	67	40
2003	69	44
2004	70	45
2005	70	47
2006	75	51

4.5.2.12 Kennebunkport (Biddeford Pool and Saco), Maine

Kennebunkport (43.34° N, 70.34° W) is located in York County, on the southern Maine Coast. It is located at the mouth of the Kennebunk River (Town of Kennebunkport 2008), and consists of a total area of 3.2 square miles (8 square km) (3.1 square miles of land [8 square km]; and 0.1 square mile [0.3 square km] of water (State of Maine 2004d). Biddeford Pool and Saco are both within 3 miles (5 km) of Kennebunkport.

History

Kennebunkport, part of the Kennebunks, began with a settlement at Cape Porpoise (Cape Porpus) in 1610. In 1653, Kennebunk was established under the control of the Massachusetts Bay Colony, but was a target of Native hostility. In 1719, the area of present-day Kennebunkport was re-colonized and named Arundel (Kennebunkport Historical Society 2006). Throughout the 17th and 18th centuries, the location was defined by its offshore fishing waters, lumber resources, shipbuilding, and as an entry port for foreign trade (Nonantum Resort 2006). In 1821, the town was established under its current name of Kennebunkport (Kennebunkport Historical Society 2006).

The shipbuilding era of the Kennebunks reached its peak in the 19th century. As shipbuilding declined towards the latter part of the century, the presently thriving tourism industry emerged.

Commercial Fishing

The most valuable landings in Kennebunkport in 2006 were lobster, followed by species in the "Other" category (Table 4.5.2-23). Overall, the values of landings in 2006 were lower than the 10-year averages for those species. The total landings in Kennebunkport have declined in recent years from a high of over $3.6 million in 1999 down to less than a million in 2005. The level of homeport fishing has remained relatively steady over this same period of time, with some variability but no clear trend. At the same time, the number of vessels listing Kennebunkport as their homeport declined. Likewise, the number of vessels with owners living in Kennebunkport declined. The data show that in most years, most vessels landing in Kennebunkport do not list it as their homeport, and there are more vessels with owners living there than there are vessels homeported there (Table 4.5.2-24).

Table 4.5.2-23
Dollar Value of Federally Managed Groups Landed in Kennebunkport

Federal Group	Average from 1997-2006[c]	2006 only[c]
Lobster	$1,863,259	$1,634,288
Other[a]	$221,626	$35,049
Large-mesh Groundfish[b]	$26,071	$8,033
Scallop	$3,086	$0
Monkfish	$2,714	$558
Squid, Mackerel, Butterfish	$5	$0
Bluefish	$1	$0
Skate	$1	$0

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] All values are reported in nominal U.S. dollars.

Table 4.5.2-24
Commercial Fishing Trends in Kennebunkport

Year	Number of vessels with Kennebunkport homeport	Number of vessels whose owner receives mail in Kennebunkport	Value of landings among vessels homeported in Kennebunkport[a]	Value of fisheries landed in Kennebunkport[a]
1997	28	37	$180,937	$2,730,250
1998	19	31	$149,629	$2,057,789
1999	22	32	$134,768	$3,669,728
2000	21	29	$130,919	$2,846,675
2001	24	29	$100,793	$2,121,483
2002	23	30	$86,685	$2,077,278
2003	21	29	$177,670	$1,814,800
2004	17	22	$151,385	$1,536,532
2005	18	20	$166,185	$635,167
2006	16	24	$194,325	$1,677,928

Note:

[a] All values are reported in nominal U.S. dollars.

4.5.2.13 Marshfield (Green Harbor/Brant Rock), Massachusetts

The town of Marshfield (42.09°N, 70.71°W) is located in the South Shore region of Plymouth County, Massachusetts, approximately 30 miles south of Boston. Marshfield is on Cape Cod Bay and is bordered by Scituate on the north and Duxbury on the south. Marshfield is 31.7 square miles (82 square km) in size, 28.5 square miles (74 square km) of which is land (State of Massachusetts 2007). Marshfield encompasses several villages including Green Harbor, Ocean Bluff-Brant Rock, Humarock, Rexhame, North Marshfield, and Marshfield Hills.

History

In 1640, Marshfield was founded by Edward Winslow, who traveled to Plymouth on the Mayflower. Marshfield and Plymouth were connected by a road that is now known as the Pilgrim Trail. A number of villages were settled around the town of Marshfield and these villages remain distinct entities to this day. Shipbuilding became an important industry early in the town's history because of the numerous waterways and access to timber (Marshfield Chamber of Commerce 2006). There were over 1,000 ships built in the North River between 1645 and 1871 (Marshfield Chamber of Commerce 2006). Several industries to support the shipbuilding industry also developed around Marshfield during this period (Marshfield Chamber of Commerce 2006). Currently Marshfield and other towns in this area are growing quickly because of their proximity to Boston. Marshfield is also a summer vacation destination. The population is estimated to increase from 25,500 year-round residents to about 40,000 during the summer months (State of Massachusetts 2007).

Commercial Fishing

Landings in Marshfield were not available at the port level until 2000. At almost $2.3 million, lobster was the most valuable species landed in Marshfield in 2006 (Table 4.5.2-25). According to the Massachusetts Division of Marine Fisheries, 52 commercial lobstermen were fishing out of Marshfield in 2006. Even though lobster landings were lower in 2006 than the average value of landings for 2000 to 2006, they were still far higher in value than any other species grouping in 2006. Marshfield is also a center for tuna landings. Vessel permit data are combined for Marshfield and its villages (Green Harbor, Ocean Bluff, and Brant Rock). In 2000, landings reported in Marshfield were valued at over $5 million; however, landings declined to roughly $2.6 million as of 2006 (Table 4.5.2-26). The landed value of fisheries associated with homeported vessels over the period where data are available (1997-2006) was variable and ranged from approximately $300,000 in 2000 to over $2.7 million in 2006. The value of landings in Marshfield was generally significantly higher than the value of landings associated with homeported vessels, indicating that vessels with homeports elsewhere offload their landings in Marshfield.

Table 4.5.2-25
Dollar Value of Federally Managed Groups Landed in Marshfield

Federal Group	Average from 1997-2006[d]	2006 only[d]
Lobster	$3,030,764	$2,279,311
Large-mesh Groundfish[a]	$124,177	$152,884
Other[b]	$22,234	$13,087
Dogfish	$8,752	$61,246
Scallop	$8,723	$57,359
Skate	$1,333	$148
Surf Clams, Ocean Quahog	$874	$2,204
Monkfish	$728	$175
Summer Flounder, Scup, Black Sea Bass	$535	$513
Bluefish	$166	$73
Squid, Mackerel, Butterfish	$29	$0
Small-mesh Groundfish[c]	$2	$0

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-26
Commercial Fishing Trends in Marshfield

Year	Number of vessels with Marshfield homeport	Number of vessels whose owner receives mail in Marshfield	Value of landings among vessels homeported in Marshfield [a]	Value of fisheries landed in Marshfield [a]
1997	108	74	$754,098	Not Recorded
1998	96	65	$604,562	Not Recorded
1999	101	75	$885,144	Not Recorded
2000	107	77	$338,566	$5,304,282
2001	92	67	$558,856	$3,961,088
2002	92	72	$628,251	$2,678,377
2003	89	67	$643,456	$2,678,377
2004	84	66	$555,371	$2,661,445
2005	88	66	$1,987,389	$2,111,329
2006	81	61	$2,760,790	$2,567,000

Note:

[a] All values are reported in nominal U.S. dollars.

4.5.2.14 Menemsha, Oak Bluffs, and Vineyard Haven

The 87.5 square miles (227 square km) of land that compose Martha's Vineyard (41.40° N, 70.63° W) are connected to the mainland by ferry service out of Woods Hole and Buzzards Bay. Located South of Boston, the driving distance from Boston to the Woods Hole Ferry is 75 miles (121 km). Martha's Vineyard includes 4 harbors commonly used for commercial fishing: Menemsha, Oak Bluffs, Vineyard Haven, and Edgartown.

History

Europeans settled among the Native Americans living on Martha's Vineyard between the 1640's and the 1660's. In the late 1700's, the island of Martha's Vineyard and nearby Nantucket were leading whaling ports. However, as whaling ships grew larger and required deeper ports, much of the whaling activity moved to mainland ports. In the 1800's, the Vineyard played host to religious camp meetings in the area that has now become Oak Bluffs. Today the area is best known as a summer vacation destination of the Kennedy's and several U.S. presidents.

Commercial Fishing

Commercial fishing on the Vineyard is broken into two broad categories: those who pursue fish and shellfish in the inland ponds and those who fish offshore. A 1994 report by the Martha's Vineyard Commission speculated that there were likely fewer than 100 fishermen who fit into the second category. That same report identified conch and lobster as the two most important species landed by both biomass and value (Table 4.5.2-27). Several species of groundfish, notably cod and flounder, also represented a sizeable portion of landings.

Table 4.5.2-27
Dollar Value of fish and shellfish landed in Martha's Vineyard in 1992

Species/Federal group	Rank Value 1992
Conch	1
Lobster	2
Large-mesh Groundfish[a]	3
Swordfish	4
Scallop	5

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

4.5.2.15 Montauk, New York

Montauk (41.00°N, 71.57°W) is located in Suffolk County at the eastern tip of the South Fork of Long Island in New York. It is situated between the Atlantic Ocean to the south, and Block Island Sound to the north, about 20 miles (32 km) off the Connecticut coast. The total area of Montauk is about 20 square miles (52 square km), of which 2.3 square miles (6 square km) of it (11.5 percent) is water (USGS 2008).

History

Montauk was originally inhabited by the Montauket tribe, who granted early settlers permission to pasture livestock there, essentially the only function of this area until the late 1800's. The owner of the Long Island Railroad extended the rail line there in 1895, hoping to develop Montauk as the first port of landing on the East Coast, from which goods and passengers would be transported to New York via the rail. While his grandiose vision was not fulfilled, the rail provided the necessary infrastructure for the transportation of seafood, and Montauk soon became the principal commercial fishing port on the East End. In the early 1900's, the railroad also brought recreational fishermen to the area from the city by the car-load aboard the "Fishermen's Special", depositing them right at the dock where they could board sportfishing charter and party boats. Montauk developed into a tourist destination around that time, and much of the tourism has catered to the sportfishing industry since (Montauk Sportfishing No Date).

Commercial Fishing

According to NMFS Landings Data, the top three valued fisheries in 2003 were squid ($2.3 million), golden tilefish ($2.1 million), and silver hake ($2.1 million). Scallop landings have increased substantially with the 2006 values over $1.5 million, which was more than the 10-year average (Table 4.5.2-28). The number of vessels homeported in Montauk showed a slightly decreasing trend between 1997 and 2006, while the number of vessels whose owner's city was Montauk showed a slight increasing trend over the same time period. Both the level of fishing homeport and landed port also stayed fairly consistent, with a jump in 2005, but generally ranging from over $9 million to over $16 million for the 1997-2006 period (Table 4.5.2-29).

Table 4.5.2-28
Dollar Value of Federally Managed Groups Landed in Montauk

Federal Group	Average from 1997-2006[d]	2006 only[d]
Squid, Mackerel, Butterfish	$3,146,620	$3,640,565
Tilefish	$2,366,489	$2,942,310
Small-mesh Groundfish[a]	$2,028,574	$1,198,711
Summer Flounder, Scup, Black Sea Bass	$1,964,880	$3,900,690
Other[b]	$1,652,214	$1,379,958
Large-mesh Groundfish[c]	$646,634	$426,272
Lobster	$585,627	$613,598
Monkfish	$373,486	$643,731
Scallop	$366,169	$1,869,196
Bluefish	$91,346	$123,277
Skate	$29,360	$40,981
Dogfish	$9,895	$1,323
Herring	$413	$874
Surf Clams, Ocean Quahog	$20	$150
Salmon	$9	$90
Red Crab	$5	Confidential

Notes:

[a] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-29
Commercial Fishing Trends in Montauk

Year	Number of vessels with Montauk homeport	Number of vessels whose owner receives mail in Montauk	Value of landings among vessels homeported in Montauk[a]	Value of fisheries landed in Montauk[a]
1997	165	89	$9,222,288	$13,556,572
1998	146	88	$9,652,978	$12,080,693
1999	158	98	$10,863,508	$12,124,707
2000	166	103	$10,286,306	$13,139,382
2001	160	103	$12,302,916	$13,231,619
2002	153	99	$11,981,882	$11,131,789
2003	152	104	$12,405,663	$11,033,366
2004	152	98	$11,243,881	$13,061,890
2005	144	96	$14,104,902	$16,475,642
2006	145	96	$13,517,890	$16,781,742

Note:
[a] All values are reported in nominal U.S. dollars.

4.5.2.16 New Bedford, Massachusetts

New Bedford is the fourth largest city in Massachusetts. It is situated on Buzzards Bay, located in the southeastern section of the state in Bristol County. The city is 54 miles (87 km) south of Boston (State of Massachusetts 2006), and has a total area of 24 square miles (62 square km), of which about 4 square miles (10 square km) (16.2 percent) is water (USGS 2008).

History

Settled in 1652, a New Bedford fishing community was established in 1760. The port focused largely on whaling until the discovery of petroleum decreased the demand for sperm oil in the mid- to late 1800's. At that time, New Bedford began to diversify its economy, by expanding the focus of the fishing fleet, and focusing on the manufacture of textiles until the southeast cotton boom in the 1920's.

Since then, New Bedford has continued to diversify, but the city is still a major commercial fishing port (USGenNet 2006) consistently ranked among the top two ports in the U.S. for landed value. One factor complicating further development of the New Bedford harbor area is its listing by U.S. Environmental Protection Agency as a superfund site due to the presence of metals, organic compounds, and PCBs.

Commercial Fishing

The number of commercial fishing vessels homeported in New Bedford increased from 244 in 1997 to 273 in 2006 as fishermen moved to New Bedford to take advantage of commercial fishing infrastructure. Concurrent with this increase in homeported vessels, the value of fishing for homeport

vessels more than doubled from $80 million to $184 million from 1997 to 2006, and the value of New Bedford landings increased to $281 million primarily driven by increased landings of scallop (Table 4.5.2-30). However, over that same time the value of groundfish landings decreased approximately 20 percent (Table 4.5.2-31).

Table 4.5.2-30
Commercial Fishing Trends in New Bedford

Year	Number of vessels with New Bedford homeport	Number of vessels whose owner receives mail in New Bedford	Value of landings among vessels homeported in New Bedford[a]	Value of fisheries landed in New Bedford[a]
1997	244	162	$80,472,279	$103,723,261
1998	213	137	$74,686,581	$94,880,103
1999	204	140	$89,092,544	$129,880,525
2000	211	148	$101,633,975	$148,806,074
2001	226	153	$111,508,249	$151,382,187
2002	237	164	$120,426,514	$168,612,006
2003	245	181	$129,670,762	$176,200,566
2004	257	185	$159,815,443	$206,273,974
2005	271	195	$200,399,633	$282,510,202
2006	273	199	$184,415,796	$281,326,486

Note:
[a] All values are reported in nominal U.S. dollars.

Table 4.5.2-31 Dollar Value of Federally Managed Groups Landed in New Bedford		
Federal Group	**Average from 1997-2006[d]**	**2006 only[d]**
Scallop	$108,387,505	$216,937,686
Large-mesh Groundfish[a]	$30,921,996	$23,978,055
Monkfish	$10,202,039	$8,180,015
Surf Clams, Ocean Quahog	$7,990,366	$9,855,093
Lobster	$4,682,873	$5,872,100
Other[b]	$4,200,323	$2,270,579
Skate	$2,054,062	$3,554,808
Squid, Mackerel, Butterfish	$1,916,647	$5,084,463
Summer Flounder, Scup, Black Sea Bass	$1,481,161	$2,227,973
Small-mesh Groundfish[c]	$897,392	$1,302,488
Herring	$767,283	$2,037,784
Dogfish	$89,071	$13,607
Bluefish	$25,828	$10,751
Tilefish	$2,675	$1,084

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

4.5.2.17 Newburyport, Massachusetts

The city of Newburyport (42.81° N, 70.88° W) is a part of Essex County in Massachusetts. It sits on the southern shore of the Merrimack River, opposite the town of Salisbury and just south of the New Hampshire border. Newburyport has a total area of 10.6 square miles (27 square km), of which 8.4 square miles (22 square km) is land (State of Massachusetts 2007, USGS 2008).

History

Newburyport was originally settled by the Pawtucket Indians, and later by Europeans in the 1630's as the town of Newbury. The port became involved in fishing and trading, while the rest of Newbury was involved in agriculture. It was incorporated as a city in 1851. The Merrimack River was an important source of food and transportation for Native Americans and later for Europeans, and would play an important part in the Industrial Revolution. Newburyport was an important trading port, bringing in goods from all over the world and making many of its residents very wealthy. There was also an important shipbuilding industry there through the 1800's (Greater Newburyport Chamber of Commerce and Industry 2007).

Commercial Fishing

The large-mesh groundfish species grouping was the most valuable fishery in Newburyport for the 1997-2006 period, with an average landings value of over $300,000 (Table 4.5.2-32). The value of groundfish in 2006 was much less, under $100,000. Lobster is also highly valuable, and was the most valuable single species in 2006, worth $342,347. The value of lobster in 2003 was also higher than the average landed value for 1997 to 2006. The number of vessels homeported in Newburyport varied during the 1997 to 2006 period, from a low of 40 in 2006 to a high of 59 in 2002, with no discernible pattern (Table 4.5.2-33). The number of vessels with owners living in Newburyport was similarly variable. Generally, the value of both homeport fishing and landed fishing increased over this time period; both reached a peak in 2003 and then declined in 2004 through 2006. The peak value of homeport fishing was just over $1 million, while the peak value of landings was just under $1 million.

Table 4.5.2-32
Dollar Value of Federally Managed Groups Landed in Newburyport

Federal Group	Average from 1997-2006[d]	2006 only[d]
Large-mesh Groundfish[a]	$329,133	$93,777
Lobster	$221,768	$342,347
Other[b]	$42,840	$32,004
Scallop	$40,511	$32,101
Monkfish	$23,968	$9,059
Small-mesh Groundfish[c]	$4,265	$14
Dogfish	$2,332	$4,612
Skate	$1,356	$0
Squid, Mackerel, Butterfish	$304	$0
Summer Flounder, Scup, Black Sea Bass	$138	$0
Bluefish	$36	$86
Herring	$4	$0

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-33
Commercial Fishing Trends in Newburyport

Year	Number of vessels with Newburyport homeport	Number of vessels whose owner receives mail in Newburyport	Value of landings among vessels home-ported in Newburyport[a]	Value of fisheries landed in Newburyport[a]
1997	53	26	$454,041	$364,737
1998	48	25	$560,563	$521,260
1999	41	27	$263,454	$322,161
2000	45	27	$587,709	$880,425
2001	52	30	$621,682	$533,975
2002	59	28	$730,359	$927,838
2003	48	24	$1,019,782	$971,945
2004	47	25	$520,982	$753,817
2005	45	22	$503,463	$876,387
2006	40	20	$540,115	$514,000

Note:
[a] All values are reported in nominal U.S. dollars.

4.5.2.18 Newport, Rhode Island

Newport, Rhode Island (41.50°N, 71.30°W) (USGS 2008) is located at the southern end of Aquidneck Island in Newport County. The city is located 11.3 miles from Narragansett Pier, 59.7 miles (96 km) from Boston, Massachusetts, and 187 miles (301 km) from New York City.

History

In the mid 1700's, Newport was one of the five largest ports in colonial North America and, until Point Judith's docking facilities were developed, it was the center for fishing and shipping in Rhode Island. Between 1800 and 1930, the bay and inshore fleet dominated the fishing industry of Newport. Menhaden was the most important fishery in Newport and all of Rhode Island until the 1930's when the fishery collapsed, and the fishing industry shifted to groundfish trawling.

Commercial Fishing

Newport has a highly diverse fishery. Of the federally-managed landed species, scallop had the highest value in 2006, at over $13 million. The average value of scallop landings for 1997 to 2006 was just over $2.5 million; 2006 landings represent a more than five-fold increase over this average value. Lobster was the most valuable species on average, worth more than $2.7 million on average, and close to $3 million in 2006. The squid, mackerel, and butterfish grouping; large-mesh groundfish; and monkfish were all valuable fisheries in Newport (see Table 4.5.2-34). The value of landings for homeported vessels in Newport was relatively consistent from 1997 to 2006, with a high of just under $8 million in 2003 (see Table 4.5.2-35). The level of landings in Newport was steady from 1997 to 2004, and then saw enormous increases in 2005 and 2006, to almost $21 million in 2006. Homeported vessels in Newport declined

from a high of 59 in 2000 to 48 in 2006, while the number of vessels with owners living in Newport increased from 13 in 1997 to 18 in 2006; this implies that most vessels homeported in Newport have owners residing in other communities.

Table 4.5.2-34
Dollar Value of Federally Managed Groups Landed in Newport

Federal Group	Average from 1997-2006[d]	2006 only[d]
Lobster	$2,758,908	$2,971,680
Scallop	$2,528,448	$13,267,494
Squid, Mackerel, Butterfish	$1,425,947	$1,315,229
Large-mesh Groundfish[a]	$1,039,962	$445,273
Monkfish	$878,265	$1,068,547
Summer Flounder, Scup, Black Sea Bass	$739,880	$815,918
Other[b]	$334,103	$401,779
Small-mesh Groundfish[c]	$179,296	$43,165
Skate	$58,481	$224,184
Herring	$42,538	$267,164
Dogfish	$26,441	$6,037
Red Crab	$15,560	$0
Bluefish	$11,759	$9,878

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-35 Commercial Fishing Trends in Newport				
Year	Number of vessels with Provincetown homeport	Number of vessels whose owner receives mail in Provincetown	Value of landings among vessels home-ported in Newport[a]	Value of fisheries landed in Newport[a]
1997	52	13	$5,130,647	$7,598,103
1998	52	16	$6,123,619	$8,196,648
1999	52	14	$6,313,350	$8,740,253
2000	59	14	$6,351,986	$8,296,017
2001	52	15	$5,813,509	$7,485,584
2002	55	17	$6,683,412	$7,567,366
2003	52	16	$7,859,848	$9,082,560
2004	52	15	$5,951,228	$8,402,556
2005	54	17	$6,012,472	$14,281,505
2006	48	18	$6,811,060	$20,837,561

Note:

[a] All values are reported in nominal U.S. dollars.

4.5.2.19 Phippsburg (Sebasco Harbor), Maine

Sebasco (43.78º N and 69.85º W) is a small village within the town of Phippsburg which is a subdivision of Sagahadoc County. Sebasco was formerly known as "Sebasco Estates," after the Sebasco Harbor Resort. The town of Phippsburg also includes the villages of Phippsburg, Parker Head, Popham, West Point, Sebasco, Winnegance, the Center, Small Point, Meadowbrook and Ashdale.

History

At Small Point Harbor, on the south-west side of the town, is the site of a fishing settlement established in 1716. A fort was erected in the settlement to protect the settlers. A sloop named "Pejepscot" transported lumber and fish to Boston and returned with merchandise and settlers from there (Varney 1886b). The settlement was destroyed during Lovewell's War (1722-1725) (State of New Hampshire 2006). In 1734 Colonel Arthur Noble built a strong garrison on the north side of the peninsula near Fiddler's Reach and by 1737 re-settlement of the area began. Phippsburg was then an annex of Georgetown, but on January 25, 1814 Phippsburg was separated from Georgetown and incorporated under the name "Phipsburgh," which was later changed to "Phippsburg" (Varney 1886b).

From the time of the original settlement to present day, fishing has been a mainstay of Phippsburg's and is vital to the economy of the community today (Town of Phippsburg 2006). Historically ice harvesting and wooden ship building were also important industries, although their importance has greatly diminished (Sebasco Harbor Resort 2008). Because of its location on a peninsula and proximity to large cities such as Boston, tourism has played, and continues to play, a major role in Phippsburg's economy. For decades, the area has been home to a number of large hotels catering to summer vacationers from the larger northeastern cities (Town of Phippsburg 2006).

Commercial Fishing

Landings data are combined for Phippsburg and Sebasco Estates, and vessel data includes data from Phippsburg, Sebasco, and Sebasco Estates. The area where many landings occur is still referred to as "Sebasco Estates." Many of these landings and vessels are likely interchangeable among these three community names.

Lobster was the most important species landed for 1997 to 2006 in Sebasco Estates and Phippsburg (Table 4.5.2-36). There were more vessels homeported in Sebasco Estates than Phippsburg or Sebasco in all years; generally the combined number of homeported vessels declined from 1997 to 2006 (Table 4.5.2-37). The number of vessels with owners living in Phippsburg, Sebasco, or Sebasco Estates increased to 52 in 2003, and dropping to 45 in 2006. The number of vessel owners living in Sebasco, Sebasco Estates, or Phippsburg far exceeded the number of homeported vessels, meaning many vessel owners keep their vessels in another port.

Table 4.5.2-36
Dollar Value of Federally Managed Groups Landed in Sebasco Estates/Phippsburg

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Lobster	1
Other[a]	2
Large-mesh Groundfish[b]	3
Monkfish	4
Skate	5
Squid, Mackerel, Butterfish	6
Small-mesh Groundfish[c]	7
Herring	8
Dogfish	9

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-37 Commercial Fishing Trends in Sebasco Estates/Phippsburg		
Year	Number of vessels with Sebasco Estates/Phippsburg home-port	Number of vessels whose owner receives mail in Sebasco Estates/Phippsburg
1997	35	47
1998	30	48
1999	30	50
2000	26	50
2001	24	49
2002	23	50
2003	24	52
2004	26	54
2005	20	49
2006	21	45

4.5.2.20 Plymouth, Massachusetts

The town of Plymouth (41.96º N, 70.67º W) is located in Southeastern Massachusetts and is the seat of Plymouth County. Plymouth faces Cape Cod Bay, and borders Cape Cod. This town covers 97.57 square miles of area (State of Massachusetts 2007) and is both the largest and the oldest municipality in Massachusetts (Plymouth Area Chamber of Commerce 2007). Due to its large extent, there are many unofficial villages within the town boundaries: North Plymouth, Plymouth Center, West Plymouth, Chiltonville, Manomet, The Pinehills, Ellisville, Cedarville, South Plymouth, Bournedale (mainly part of neighboring Town of Bourne), and Buttermilk Bay (a neighborhood of Plymouth accessible only by road through neighboring towns of Bourne and Wareham) (MapQuest 2007).

History

Plymouth played a very important role in American history as one of the first colonies, a fact not soon forgotten by the town or any of the one million tourists who visit here annually (Plymouth Area Chamber of Commerce 2007). The pilgrims were English separatists, leaving the Church of England and their homeland in search of religious freedom, believing the Church of England had not fulfilled the Reformation. They initially traveled to Holland, but then decided to journey to America. Originally headed for Northern Virginia, the Pilgrims were blown off course and found themselves off Provincetown. They eventually settled at Plymouth, creating the first European settlement in New England, drawing up the Mayflower Compact which established a new government. Plymouth was founded on December 21, 1620, later to become Plymouth Colony and eventually a part of the Massachusetts Bay Colony (Historical Reference Center 1997). Long before the Pilgrims ever arrived, the Wampanoag living in the Plymouth area were highly dependent on fishing (Hall-Arber 2001). Today, Plymouth is a fishing and tourist center, with marine-related industries and cranberry-packing houses (Historical Reference Center 1997). Plymouth's beautiful scenery and its proximity to Boston have encouraged many people to move here and the town has seen a rapid increase in growth, with the population increasing by 145 percent in the last two decades (Plymouth Area Chamber of Commerce 2007).

Commercial Fishing

Overall, lobster make up the vast majority of the landings in Plymouth, followed by largemesh groundfish and monkfish (Table 4.5.2-38). The number of vessels home ported in Plymouth was variable from 1997-2006, with a high of 69 in 2005, declining to 62 in 2006. The number of vessels with owners living in Plymouth was consistently lower than the number of home ported vessels, indicating that many vessels found in Plymouth Harbor are likely owned by people residing in other communities (Table 4.5.2-39).

Table 4.5.2-38
Dollar Value of Federally Managed Groups Landed in Plymouth

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Lobster	1
Large-mesh Groundfish[a]	2
Monkfish	3
Dogfish	4
Other[b]	5
Herring	6
Surf Clams, Ocean Quahog	7
Scallop	8
Skate	9
Summer Flounder, Scup, Black Sea Bass	10
Squid, Mackerel, Butterfish	11
Small-mesh Groundfish[c]	12
Bluefish	13
Tilefish	14

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-39 Commercial Fishing Trends in Plymouth		
Year	Number of vessels with Plymouth home-port	Number of vessels whose owner receives mail in Plymouth
1997	58	46
1998	53	42
1999	54	40
2000	50	39
2001	56	48
2002	56	44
2003	59	45
2004	68	53
2005	69	49
2006	62	47

4.5.2.21 Point Judith/Narragansett, Rhode Island

Narragansett (41.45°N, 71.45°W) (USGS 2008) is located in Washington County, 30 miles (48 km) south of Providence. Point Judith is located in the southern end of Narragansett along Highway 108 near Galilee State Beach, at the western side of the mouth of Rhode Island Sound. Point Judith itself is not a census designated place or incorporated town, and as such has no census data associated with it. Thus, this profile provides census data from Narragansett Town (town-wide) and other data from both Point Judith itself and Narragansett.

History

The land now called Narragansett was originally inhabited by the Narragansett Indians until Roland Robinson purchased it in 1675. By the 1660's, settlers put the fertile soil to use by developing agriculture in the area. Soon the area's economy depended on the export of agricultural products to markets such as Boston, Providence, and Newport. By the 1700's, there was a thriving ship building industry and a busy port. Fishing did not come into prominence again until the 1930's (Griffith and Dyer 1996).

By the 1800's, many farmers began to supplement their income by fishing for bass and alewife, or harvesting oysters. By the early 1900's, Point Judith's Port of Galilee became one of the largest fishing ports on the east coast. By the 1930's, wharves were constructed to facilitate large ocean-going fishing vessels (Eckilson 2007). Today, Point Judith is not only an active commercial fishing port, but it supports a thriving tourism industry that includes restaurants, shops, whale watching, recreational fishing, and a ferry to Block Island.

Commercial Fishing

Over the 10-year period from 1997 to 2006, the value of landings in Point Judith varied but indicated a declining trend, from a high of just over $51 million to a low of $31 million in 2002 to 2003. However, in 2004 the landings value began to increase again, back to just under $47 million in 2006. The

landings value for the squid, mackerel, and butterfish species grouping was higher in 2006 than the average value for 1997 to 2006 (see Table 4.5.2-40). The value of lobster in 2006, second most valuable in terms of landings, was lower in 2006 than the average value. Vessel data is combined there for Point Judith and Narragansett; there are no vessel owners listed for Point Judith (because the name refers only to the port), indicating that many fishermen live in the Narragansett area and fish out of Point Judith (Table 4.5.2-41). In total, the number of vessels homeported in either Point Judith or Narragansett reached a high of 186 in 2001, and a low of 168 in 2006. The number of vessels with owners living in Narragansett was much lower in all years than the number of vessels homeported there, indicating that many of the vessels in Point Judith have owners residing in other communities.

Table 4.5.2-40
Dollar Value of Federally Managed Groups Landed in Point Judith/Narragansett

Federal Group	Average from 1997-2006[d]	2006 only[d]
Squid, Mackerel, Butterfish	$11,298,781	$13,188,211
Lobster	$11,022,301	$8,675,086
Summer Flounder, Scup, Black Sea Bass	$4,718,136	$6,495,568
Small-mesh Groundfish[a]	$2,816,677	$1,799,479
Monkfish	$2,687,563	$2,110,227
Large-mesh Groundfish[b]	$2,451,647	$3,383,452
Other[c]	$2,056,576	$2,697,425
Scallop	$1,457,702	$7,420,396
Skate	$618,033	$604,990
Herring	$470,065	$376,506
Tilefish	$230,142	$32,985
Bluefish	$112,378	$118,466
Dogfish	$48,031	$45,000
Red Crab	$9,593	$0

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-41
Commercial Fishing Trends in Point Judith/Narragansett

Year	Number of vessels with Point Judith/Narragansett homeport	Number of vessels whose owner receives mail in Point Judith/Narragansett	Value of landings among vessels home-ported in Point Judith/Narragansett[a]	Value of fisheries landed in Point Judith/Narragansett[a]
1997	181	61	$33,021,800	$47,529,746
1998	175	55	$32,870,223	$42,614,251
1999	181	60	$36,324,182	$51,144,479
2000	184	61	$33,911,658	$41,399,853
2001	186	62	$30,121,535	$33,550,542
2002	179	53	$30,014,709	$31,341,472
2003	173	52	$32,793,425	$31,171,867
2004	174	51	$37,058,022	$36,016,307
2005	171	52	$37,150,241	$38,259,922
2006	168	51	$41,021,147	$46,947,791

Note:
[a] All values are reported in nominal U.S. dollars.

4.5.2.22 Port Clyde, Maine

The village of Port Clyde, Maine (43.92°N, 69.25°W) is located in Knox County, in the town of St. George. Port Clyde is a small fishing village located at the end of St. George Peninsula, which is a point of land between the towns of Thomaston and Rockland (St. George, Maine No Date).

History

The first permanent European settlers in St. George, of which Port Clyde is a component, arrived in the 1760's and 1770's, from neighboring Cushing. In 1789, St. George and Cushing were incorporated together as the Town of Cushing, but were divided again in 1803 along the river. The original industries in the towns included timber and small-scale farming. Later granite quarries and shipyards employing hundreds of men developed. However, the "fishing industry has always been a mainstay for the people of St. George, and the industry is still going strong and provides jobs for local residents" (Watts No Date). Summer tourism began almost 100 years ago and today over half of the town is owned by non-residents. Port Clyde has several seasonal restaurants, a general store, and numerous galleries. In addition, the ferry for Monhegan Island leaves from Port Clyde.

Commercial Fishing

Lobster was by far the most significant fishery in Port Clyde for the 1997-2006 period. Large-mesh groundfish had the second highest landed value averaged for the 10-year period; however, herring landings in 2006 far exceeded those of groundfish (Table 4.5.2-42). The level of landings in Port Clyde increased considerably between 1997 and 2003, with the 2003 landing values almost three times the 1997 landing values, and then declining subsequently. At the same time, the level of homeport fishing

remained relatively static during the same period, as did the number of homeported vessels (Table 4.5.2-43). This suggests that this increase in landings is a result of vessels from other communities landing their catch in Port Clyde.

Table 4.5.2-42
Dollar Value of Federally Managed Groups Landed in Port Clyde

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Lobster	1
Large-mesh Groundfish[a]	2
Monkfish	3
Other[b]	4
Herring	5
Scallop	6
Skate	7
Summer Flounder, Scup, Black Sea Bass	8
Squid, Mackerel, Butterfish	9
Small-mesh Groundfish[c]	10
Dogfish	11

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-43
Commercial Fishing Trends in Port Clyde

Year	Number of vessels with Port Clyde home-port	Number of vessels whose owner receives mail in Port Clyde
1997	23	16
1998	25	15
1999	26	16
2000	29	16
2001	31	19
2002	27	17
2003	29	18
2004	31	20
2005	30	20
2006	25	17

4.5.2.23 Portland Harbor, Maine

The city of Portland, Maine (43.66 °N, 70.2 °W) has a terrestrial area of 54.9 square miles (142 square km), and 31.4 square miles (81 square km) of water. It is located in Cumberland County on Casco Bay, and is adjacent to South Portland, Westbrook, and Falmouth. Portsmouth and Manchester, New Hampshire are the closest large cities. Portland is the largest city in Maine and has the highest population in New England north of Boston.

History

Portland was destroyed four times by various sources including Native American attacks, the British Navy during the American Revolution, and a fire. Each time it was rebuilt and now it is well-known for its preservation of Victorian-style architecture.

The city's port industries have driven its economy since its settlement. From the mid-1800's until World War I, Portland provided the only port for Montreal, Canada. Railroads from the south to the north fed through the city, facilitating trade and travel. Although Canada developed its own ports, and other cities in southern New England states built larger ports, the city remained tied to its maritime roots by depending on the fishing industry. More recently, it has become a popular cruise ship destination and functions as the second largest oil port on the east coast of the U.S.

Commercial Fishing

Portland's landings come primarily from the large-mesh groundfish species and from lobster, with over $14 million and $12 million in value respectively over the 10-year average (Table 4.5.2-44). Monkfish and herring are also important species. There were also a variety of species landed in Portland between the years 1997 to 2006. Both the number of vessels homeported and number of vessels registered with owner's living in Portland slightly decreased between 1997 and 2006. The level of fishing homeport value increased until 2006, where there was a drop from over $18 million in the previous year to over $13 million. The level of landings experienced a similar trend, with a dip from 2005 to 2006 of over $6 million (Table 4.5.2-45).

Table 4.5.2-44
Dollar Value of Federally Managed Groups Landed in Portland Harbor

Federal Group	Average from 1997-2006[d]	2006 only[d]
Large-mesh Groundfish[a]	$14,433,950	$10,756,311
Lobster	$12,616,286	$8,737,373
Monkfish	$4,908,022	$3,094,679
Herring	$2,524,047	$4,423,437
Other[b]	$2,007,356	$684,362
Scallop	$65,950	$72,250
Small-mesh Groundfish[c]	$44,811	$168
Skate	$44,582	$933
Squid, Mackerel, Butterfish	$17,444	Confidential
Tilefish	$15,623	Confidential
Summer Flounder, Scup, Black Sea Bass	$12,334	Confidential
Dogfish	$12,023	$12,211
Bluefish	$151	$73

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-45 Commercial Fishing Trends in Portland Harbor				
Year	Number of vessels with Portland Harbor home-port	Number of vessels whose owner receives mail in Portland	Value of landings among vessels home-ported in Portland Harbor[a]	Value of fisheries landed in Portland Harbor[a]
1997	123	49	$14,260,267	$43,219,804
1998	104	43	$11,898,155	$35,203,041
1999	116	47	$14,781,969	$42,393,247
2000	115	43	$16,486,230	$45,434,740
2001	109	39	$15,488,517	$34,356,660
2002	107	40	$15,208,020	$40,396,946
2003	114	40	$15,478,904	$28,892,963
2004	111	38	$17,763,527	$34,690,050
2005	111	43	$18,051,059	$34,613,266
2006	104	44	$13,255,702	$27,825,058

Note:

[a] All values are reported in nominal U.S. dollars.

4.5.2.24 Portsmouth, New Hampshire

Portsmouth (43.03° N, 70.47°W) (USGS 2008) is located in Rockingham County, New Hampshire. Portsmouth Harbor is located by the mouth of the Piscataqua River, which allows deep water access (State of New Hampshire 2006). Portsmouth is located along the State's seaboard that only totals about 18 miles.

History

The city of Portsmouth is the second oldest city in New Hampshire. It was originally settled in 1623 as Strawberry Banke and was incorporated as Portsmouth in 1631. Fishing, farming, shipbuilding, and coastal trade were the major industries throughout New Hampshire in the 1600's. By 1725, Portsmouth was a thriving commercial port, exporting timber products and importing a wide range of goods (Wallace 2006). However, the 1800's brought change to Portsmouth as the seacoast declined as a commercial center. Many nearby towns, like Dover, Newmarket, and Somersworth, turned to textile manufacturing (Wallace 2006). The Portsmouth Naval Shipyard, established in June 1800, is the oldest naval shipyard continuously operated by the U.S. Government (PNS No Date). In recent times, high-tech industries and an increase in tourism has transformed Portsmouth and all of southern New Hampshire, making New Hampshire into the fastest growing state in the Northeast (State of New Hampshire DHR 2006).

Commercial Fishing

Large-mesh groundfish and monkfish were the most valuable landings in Portsmouth between the years 1997 and 2006 (Table 4.5.2-46). Additionally, lobster, "Other" species, and sea scallops accounted for a large portion of the value of species landed in Portsmouth. The value of landings of most of these species groupings had declined in 2006 from the 1997-2006 average; however, lobster landings had increased considerably, and were the most valuable landings for Portsmouth in 2006.

The number of homeported vessels has varied between the years 1997 and 2006, but overall showed an increasing trend. In 1997, there were 54 vessels, which increased to a high of 67 vessels in 2004. The number of vessels where the owner's city is Portsmouth varies slightly over the years with no consistent trend (Table 4.5.2-47).

Table 4.5.2-46
Dollar Value of Federally Managed Groups Landed in Portsmouth

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Large-mesh Groundfish[a]	1
Monkfish	2
Lobster	3
Other[b]	4
Scallop	5
Dogfish	6
Herring	7
Small-mesh Groundfish[c]	8
Skate	9
Bluefish	10
Squid, Mackerel, Butterfish	11
Summer Flounder, Scup, Black Sea Bass	12
Tilefish	13

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-47 Commercial Fishing Trends in Portsmouth		
Year	Number of vessels with Portsmouth homeport	Number of vessels whose owner receives mail in Portsmouth
1997	54	26
1998	44	20
1999	45	18
2000	62	21
2001	63	22
2002	59	25
2003	54	21
2004	67	29
2005	64	20
2006	66	19

4.5.2.25 Provincetown, Massachusetts

Provincetown is located on the northern tip of the Cape Code peninsula in Barnstable County in the State of Massachusetts. It is bordered by Truro on the east and surrounded by the Atlantic Ocean on all other sides (USGS 2008).

History

Provincetown Harbor is the site of the first landing of the Mayflower and the signing of the Mayflower Compact. The first permanent settlement was established in 1700 and by 1727, the town was incorporated. By the mid 1800's, Provincetown, with the largest and safest natural harbor on the New England coast, had become one of the busiest seaports in the country (Hall-Arber et al. 2001). During this time, there were many fishing and salt drying businesses in town.

When the fishing industry faltered and the Portland Gale of 1898 swept away half of the town's wharves, the resort population of the town provided jobs to take the place of those jobs lost in the fishing industry. Today, the preserved historic buildings combine with the lure of the sea to support a large tourist and summer home industry (State of Massachusetts 2007).

Commercial Fishing

The fishing industry in Provincetown is no longer the mainstay of the community's economy; however, it does provide a sense of culture and is making an effort to stay afloat during times of low catches and strict regulations. On average from 1997 to 2006, large-mesh groundfish were the most valuable species grouping landed in Provincetown, with just over $1 million in landings on average (Table 4.5.2-48). However, by 2006 the landings of groundfish had declined, while landings of both lobster and scallops had increased from the 10-year average values, each valued at over $1 million. The number of vessels homeported in Provincetown remained between 45 and 38 from 1997 to 2005. In 2006 the number of homeported vessels dropped to 27 (Table 4.5.2-49).

Table 4.5.2-48
Dollar Value of Federally Managed Groups Landed in Provincetown

Federal Group	Average from 1997-2006[d]	2006 only[d]
Large-mesh Groundfish[a]	$1,003,894	$696,612
Lobster	$894,127	$1,297,060
Scallop	$705,648	$1,115,703
Other[b]	$427,874	$424,756
Small-mesh Groundfish[c]	$415,437	$0
Skate	$97,400	$86,723
Monkfish	$88,245	$55,407
Dogfish	$47,462	$16,482
Summer Flounder, Scup, Black Sea Bass	$31,372	$49,367
Surf Clams, Ocean Quahog	$21,935	$0
Bluefish	$20,293	$7,289
Squid, Mackerel, Butterfish	$8,094	$0
Herring	$9	$0

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-49
Commercial Fishing Trends in Provincetown

Year	Number of vessels with Provincetown homeport	Number of vessels whose owner receives mail in Provincetown	Value of landings among vessels home-ported in Provincetown[a]	Value of fisheries landed in Provincetown[a]
1997	45	30	$1,836,160	$2,323,550
1998	41	25	$2,082,836	$2,806,083
1999	45	28	$2,861,104	$3,509,414
2000	38	19	$2,294,882	$3,805,809
2001	40	18	$3,745,646	$5,648,390
2002	40	19	$2,766,302	$3,894,188
2003	45	22	$2,001,747	$3,555,308
2004	45	21	$1,941,001	$3,477,377
2005	39	15	$2,863,492	$4,848,370
2006	27	11	$1,871,187	$3,749,399

Note:

[a] All values are reported in nominal U.S. dollars.

4.5.2.26 Rockland, Maine

Rockland (44.1°N, 69.1°W) is located in Mid-Coast Maine on Penobscot Bay in Knox County, 82 miles from Portland and 189 miles (304 km) to Boston. The nearest municipalities of note include Camden, Thomaston, Waldoboro, Belfast, and Searsport (MapQuest 2001).

History

Rockland's economic history includes shipbuilding, commercial fishing, lime kilns, and granite quarries, the last of which are what the city is named for. The fishing-related industry dates back to the 1750's; the areas first fish processing plant was built in the 1880's and the first wholesale lobster businesses appeared in the 1900's. From the 1970's through the 1990's, the city hosted groundfish, shrimp, herring, and sardine processing plants. The collapse of the area groundfish fishery in the 1980's significantly reduced fisheries-related activity in the area. Today, Rockland is primarily a tourist destination and fine arts center with a minor manufacturing industry.

Commercial Fishing

Rockland's commercial fishery is primarily based on the herring and lobster fisheries (Table 4.5.2-50); large-mesh groundfish landings ranking 4th in value. The number of homeported vessels decreased, from 42 in 1997 to 22 in 2006 (Table 4.5.2-51). Over that time, the number of vessels whose owner receives mail in Rockland has varied from 18 to 9.

Table 4.5.2-50
Dollar Value of Federally Managed Groups Landed in Rockland

Federal Group	Rank Value of Average Landings from 1997-2006[c]
Lobster	1
Herring	2
Other[a]	3
Large-mesh Groundfish[b]	4
Scallop	5
Monkfish	6
Red crab	7
Skate	8
Squid, Mackerel, Butterfish	9

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-51 Commercial Fishing Trends in Rockland		
Year	Number of vessels with Rockland homeport	Number of vessels whose owner receives mail in Rockland
1997	42	17
1998	32	16
1999	28	14
2000	29	14
2001	32	15
2002	30	13
2003	26	15
2004	32	18
2005	30	14
2006	22	9

4.5.2.27 Rye, New Hampshire

The town of Rye (43.01° N, 70.77° W) (USGS 2008) is located in the New Hampshire Seacoast region, on the Atlantic Ocean's coast in Rockingham County. Rye contains 12.6 square miles (33 square km) of land area and 0.5 square miles (1 square km) of inland water area (State of New Hampshire ELMIB 2007).

History

The town was established by David Thompson in 1623 at Odiorne's Point, and named for the borough of Rye, a town on the English Channel. It was part of Portsmouth and then later incorporated as a parish of New Castle in 1726. The town includes the villages of Cable Road, Fairhill Manor, Foyes Corner, Langs Corner, Rye, Rye Beach, Rye Harbor, Rye North Beach, Wallis Sands, and West Rye. It has 8 miles (13 km) if Atlantic coastline, and is the only New Hampshire town with Atlantic islands, the four Isles of Shoals (State of New Hampshire EMLIB 2007).

The increasing reliance on a tourism industry in Rye, as in the rest of the Seacoast, has decreased the economy's reliance on a fishing industry. Rye is significant as a fishing port because of its proximity to fertile fishing grounds of the region (Hall-Arber et al. 2001). Whale watching trips often access Jeffrey's Ledge and Stellwagen Bank National Marine Sanctuary (Blue Ocean 2004; State of New Hampshire ELMIB 2007). Rye Harbor is one of the state's largest saltwater fishing locations (Stedman and Hanson No Date).

Commercial Fishing

The most valuable species landed in Rye averaged for 1997 to 2006 was large-mesh groundfish, followed by lobster and "Other" species (Table 4.5.2-52). In 2006, lobster was responsible for the most landed value after groundfish. Overall, the number of boats homeported in Rye has increased, from a low of 25 in 2000 to 39 in 2006 (Table 4.5.2-53). The value of homeport fishing also showed a net increase from 1997 to 2006. The level of homeport fishing was higher in all years than the level of landings,

indicating that some fishermen from Rye land their catch elsewhere, perhaps in one of the other ports along the New Hampshire sea coast.

Table 4.5.2-52
Dollar Value of Federally Managed Groups Landed in Rye

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Large-mesh Groundfish[a]	1
Monkfish	2
Other[b]	3
Lobster	4
Dogfish	5
Scallop	6
Small-mesh Groundfish[c]	7
Bluefish	8
Herring	9
Skate	10
Squid, Mackerel, Butterfish	11
Surf Clams, Ocean Quahog	12

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-53 Commercial Fishing Trends in Rye		
Year	Number of vessels with Portsmouth homeport	Number of vessels whose owner receives mail in Portsmouth
1997	32	29
1998	31	29
1999	29	28
2000	25	25
2001	30	28
2002	32	28
2003	32	28
2004	37	32
2005	37	30
2006	39	30

4.5.2.28 Salem, Massachusetts

Salem Harbor is bordered by Salem (42.55°N, 70.86°W) to the north and Marblehead to the south. The area is approximately 16 driving miles (26 km) southwest of Boston. Because the majority of commercial fishing activity is centered in Marblehead, the remainder of this community description focuses on Marblehead

History

Marblehead was first settled in 1629 and was incorporated in 1649. The town was originally a fishing village marketing salted cod directly to the market, which made it the sixth most prosperous town in the American colonies.

For most of the 19th century, Marblehead sent fishing schooners to the Grand Banks to fish, and the town's economy revolved around fishing. Marblehead had a short industrial boom in the late 1800's as yachting and shoe-making factories became the major industries. The shoe industry was quite productive, until two fires in 1877 and 1888 destroyed much of the business district. Today little of the commercial fishing industry remains in Marblehead.

Commercial Fishing

The value of lobster landings in Marblehead exceeded any other species (Table 4.5.2-54); large-mesh and small-mesh groundfish were ranked 2nd and 8th respectively. The number of vessels with Marblehead as their homeport and the number of vessels whose owners receive mail in Marblehead remained relatively constant from 1997 through 2006 (Table 4.5.2-55).

Table 4.5.2-54 Dollar Value of Federally Managed Groups Landed in Marblehead	
Federal Group	**Rank Value of Average Landings from 1997-2006[c]**
Lobster	1
Large-mesh Groundfish[a]	2
Monkfish	3
Dogfish	4
Other[b]	5
Bluefish	6
Scallop	7
Small-mesh Groundfish[c]	8
Squid, Mackerel, Butterfish	9
Summer Flounder, Scup, Black Sea	10
Skate	11

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] Other" species includes any species not accounted for in a federally managed group

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-55 Commercial Fishing Trends in Marblehead		
Year	**Number of vessels with Marblehead homeport**	**Number of vessels whose owner receives mail in Marblehead**
1997	25	26
1998	21	21
1999	23	21
2000	23	19
2001	21	21
2002	22	20
2003	22	21
2004	21	19
2005	21	18
2006	22	19

4.5.2.29 Sandwich, Massachusetts

The town of Sandwich, Massachusetts (41.76º N, 70.49º W) is located on Cape Cod, in Barnstable County. Sandwich sits on Cape Cod Bay, and straddles the Cape Cod Canal, bordering Barnstable to the east and Bourne to the west. This town covers about 44.0 square miles (114 square km) of area, the majority of which is on the Cape side of the canal (State of Massachusetts 2007).

History

Settled in 1637 and incorporated in 1639, Sandwich is the oldest town on Cape Cod. During the 17th and 18th centuries, Sandwich was largely an agricultural community, and in the 19th century, when many neighboring communities were involved in whaling, Sandwich turned to the glass industry, lacking a deep water port. Towards the end of the 19th century, when the railroad was constructed bringing passengers from Boston, Sandwich became a tourist destination and has remained one ever since (Sandwich Cape Cod No Date).

Commercial Fishing

The most valuable species landed in Sandwich in 2006 was lobster, worth just under $3 million. The 2006 landings were slightly higher than the average landings for 1997 to 2006 (Table 4.5.2-56). Landings in the "Other" species grouping followed lobster in value ranking; the landings in this category were much lower in 2006 than the ten-year average landed values. Overall, landings in Sandwich were at their peak in 2002, with over $7 million in landings, and declined to $4.4 million in 2006. The level of fishing for homeported boats did not exactly follow the same trend, and was lower in every year than landings in Sandwich, peaking at $3 million in 2005. The number of homeported boats in Sandwich grew from 24 in 1997 to 42 by 2004, and then fell to 29 in 2006 (Table 4.5.2-57). Overall, the number of vessels with owners living in Sandwich was much lower, with a maximum of 12, indicating that most vessels homeported in Sandwich are owned by people residing in other communities.

Table 4.5.2-56
Dollar Value of Federally Managed Groups Landed in Sandwich

Federal Group	Average from 1997-2006[d]	2006 only[d]
Lobster	$2,790,921	$2,864,271
Other[a]	$1,821,055	$1,080,511
Scallop	$224,279	$345,350
Large-mesh Groundfish[b]	$116,434	$112,245
Surf Clams, Ocean Quahog	$27,085	$0
Bluefish	$7,253	$13,458
Summer Flounder, Scup, Black Sea Bass	$5,770	$20,424
Monkfish	$4,117	$2,199
Dogfish	$3,028	$4,438
Squid, Mackerel, Butterfish	$1,658	$3,246
Skate	$1,218	$0
Small-mesh Groundfish[c]	$1	$0

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-57
Commercial Fishing Trends in Sandwich

Year	Number of vessels with Sandwich home-port	Number of vessels whose owner receives mail in Sandwich	Value of landings among vessels home-ported in Sandwich[a]	Value of fisheries landed in Sandwich[a]
1997	24	8	$2,016,631	$3,722,060
1998	25	12	$1,980,134	$2,541,882
1999	28	11	$2,882,891	$3,738,483
2000	31	10	$1,896,309	$5,119,676
2001	36	10	$2,007,609	$5,863,665
2002	38	10	$2,216,414	$7,141,661
2003	36	10	$2,364,539	$6,137,502
2004	42	12	$1,750,891	$5,592,997
2005	33	8	$3,009,016	$5,724,109
2006	29	6	$2,400,632	$4,446,142

Note:

[a] All values are reported in nominal U.S. dollars.

4.5.2.30 Scituate, Massachusetts

The town of Scituate (42.20º N, 70.73º W) is located in the South Shore region of Massachusetts, in Plymouth County, 30 miles south of Boston. Scituate faces Cape Cod Bay and is bordered by Marshfield and Norwell to the south and Cohasset to the north. It encompasses 31.8 square miles (82 square km), of which 17.2 square miles (45 square km) is land, and 14.6 square miles (38 square km) is water (State of Massachusetts 2006).

History

The first permanent European settlement in Scituate was in 1627 or 1628, when a group from Plymouth headed north looking for fertile lands to cultivate. The town was incorporated in 1636 (Town of Scituate 2006). Scituate was an important fishing port by the end of the 18th century because of its protected harbor, but mud flats and shallow water made the harbor difficult to enter, so the town built Scituate Light, completing construction in 1811 (D'Entremont 2006). Shipbuilding was also an important industry to residents of Scituate. Between 1645 and 1871, there were over 1,000 ships built in the North River, which separates Scituate from Marshfield (Marshfield Chamber of Commerce 2006). At the start of the 20th century, Scituate was still a small town with around 2,000 residents and its' commercial fishing fleet continues to add to the town's appeal and historical ties.

Commercial Fishing

Lobster was the most valuable species landed there in 2006, bringing in nearly $1.8 million (Table 4.5.2-58). The second most valuable species grouping in 2006 was large-mesh groundfish, followed by monkfish. The landing values for lobster in 2006 were much higher than the average landings values between 1997 and 2006; however, the landings for groundfish in 2006 had declined from the 10-year average. The total landings in Scituate had their highest point in 2000, at about $4.8 million, then declined somewhat in subsequent years. Overall, the number of vessels homeported in Scituate varied between 1997 and 2006, reaching a high of 81 in 2002, and declining to 63 by 2006. The value of fishing to homeported vessels in Scituate increased somewhat during this time period, to $3.4 million in 2006 (Table 4.5.2-59). Also of interest is that the number of vessels owned by Scituate residents declined over the same period, indicating that perhaps the vessel owners are moving out of Scituate, or that the vessels are changing hands.

Table 4.5.2-58 Dollar Value of Federally Managed Groups Landed in Scituate		
Federal Group	**Average from 1997-2006[d]**	**2006 only[d]**
Large-mesh Groundfish[a]	$1,423,269	$1,221,144
Lobster	$1,258,349	$1,773,974
Monkfish	$402,945	$188,020
Dogfish	$74,765	$17,572
Other[b]	$29,467	$34,964
Skate	$16,538	$23,924
Squid, Mackerel, Butterfish	$12,405	$668
Scallop	$9,034	$28,418
Bluefish	$4,775	$1,290
Summer Flounder, Scup, Black Sea Bass	$3,539	$1,452
Surf Clams, Ocean Quahog	$2,459	$0
Small-mesh Groundfish[c]	$1,926	$31
Tilefish	$144	$0

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] All values are reported in nominal U.S. dollars.

Table 4.5.2-59
Commercial Fishing Trends in Scituate

Year	Number of vessels with Scituate home-port	Number of vessels whose owner receives mail in Scituate	Value of landings among vessels home-ported in Scituate[a]	Value of fisheries landed in Scituate[a]
1997	79	55	$2,573,583	$1,371,648
1998	70	50	$2,727,569	$2,855,762
1999	78	59	$2,015,519	$2,092,982
2000	75	53	$2,934,249	$4,770,224
2001	79	50	$2,093,487	$3,484,206
2002	81	50	$2,258,030	$3,837,513
2003	74	49	$2,597,671	$4,219,873
2004	77	53	$2,798,574	$3,815,547
2005	68	48	$2,845,396	$2,763,997
2006	63	44	$3,460,992	$3,291,457

Note:
[a] All values are reported in nominal U.S. dollars.

4.5.2.31 Seabrook/Hampton, New Hampshire

The city of Seabrook, New Hampshire (42.89°N, 70.87°W) is located in Rockingham County, at the border of New Hampshire and Maine (USGS 2008). Seabrook contains 9.0 square miles (23 square km) of land area and 0.6 square miles (2 square km) of inland water area (State of New Hampshire ELMIB 2007). Hampton borders Seabrook to the north, and the two share a harbor and are connected by a causeway along the shore. Fishing activity in the two communities is difficult to separate.

History

Seabrook was first settled in 1638, at the time as a part of Hampton. Incorporated as a separate town in 1768, it was named Seabrook after the Seabrook River that runs through the town (State of New Hampshire ELMIB 2007). Most of the town's early settlers were engaged in the farming and fishing industries. Many of the current residents can trace their ancestry to the first Quaker settlers in the town. Today, Seabrook is a community with miles of beaches, attracting thousands of tourists, with an active harbor surrounded by a thriving business sector (Town of Seabrook 2008).

Commercial Fishing

Landings in the large-mesh groundfish grouping were the most valuable on average in Seabrook from 1997 to 2006, followed by lobster and monkfish (Table 4.5.2-60). Landings of all three of these were higher in 2006 than the 10-year average value. The number of vessels fishing, both those with Seabrook listed as a homeport and those whose owners resided in Seabrook, showed considerable variability over the 1997-2006 period with no obvious trend (Table 4.5.2-61).

Table 4.5.2-60 Dollar Value of Federally Managed Groups Landed in Seabrook	
Federal Group	**Rank Value of Average Landings from 1997-2006[d]**
Large-mesh Groundfish[a]	1
Lobster	2
Monkfish	3
Other[b]	4
Small-mesh Groundfish[c]	5
Dogfish	6
Scallop	7
Herring	8
Bluefish	9
Skate	10
Squid, Mackerel, Butterfish	11

Notes:

[a] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[b] "Other" species includes any species not accounted for in a federally managed group

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-61 Commercial Fishing Trends in Seabrook		
Year	**Number of vessels with Seabrook home-port**	**Number of vessels whose owner receives mail in Seabrook**
1997	38	30
1998	30	23
1999	28	25
2000	31	29
2001	38	32
2002	37	31
2003	33	29
2004	31	26
2005	28	22
2006	45	31

4.5.2.32 Stonington, Maine

The town of Stonington (44.09°N, 68.38°W) is located in Hancock County on Deer Isle in Downeast Maine. Stonington is 103 miles (166 km) northeast of Augusta, Maine and has a total area of 37.8 square miles (98 square km), of which 28.0 square miles (73 square km) is water (State of Maine 2004e).

History

Between 1870 and 1925, enormous quantities of granite were produced from quarries in Stonington and on Crotch Island. Stonington, originally known as Green's Landing, earned its new name because of this granite industry. The granite industry subsequently declined and the quarries closed, and fishing became Stonington's most important industry (Maine Coast Guide 2002). Clam, mussel, and lobster fishing activities have replaced a once-popular urchin fishery from Stonington's Pier in the 1990's (Ellsworth American 2002b).

Commercial Fishing

Lobster landings were by far the most valuable landings in Stonington (Table 4.5.2-62), with 2006 landings close to double the 1997-2006 average value. Landings of "Other" species and herring were also valuable, and landings of both were higher in 2006 than the 10-year average values. The number of homeport vessels saw a large increase in the 10-year time period, from 44 in 1997 to 80 in 2005 (Table 4.5.2-63). Relatively low homeport values suggest few vessels from Stonington are landing catch in their homeport.

Table 4.5.2-62
Dollar Value of Federally Managed Groups Landed in Stonington

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Lobster	1
Other[a]	2
Herring	3
Scallop	4
Large-mesh Groundfish[b]	5
Monkfish	6
Skate	7
Small-mesh Groundfish[c]	8
Squid, Mackerel, Butterfish	9
Summer Flounder, Scup, Black Sea Bass	10
Bluefish	11

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group.

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-63 Commercial Fishing Trends in Stonington		
Year	Number of vessels with Stonington homeport	Number of vessels whose owner receives mail in Stonington
1997	44	36
1998	44	33
1999	46	33
2000	49	35
2001	52	33
2002	59	40
2003	66	45
2004	71	46
2005	80	51
2006	76	49

4.5.2.33 Swans Island, Maine

The town of Swan's Island, Maine (44.06°N, 68.28°W) is located in Hancock County. It is 27 miles from Bar Harbor, 98 miles from Rockland, and 137 miles from Augusta. The town has a total area of 82.4 mi^2, of which 68.4 mi^2 is water (State of Maine 2004f).

History

Swan's Island is divided into four distinct communities: Swan's Island Village, usually referred to simply as "The Harbor" on the western shore of Burnt Coat Harbor; Minturn on the eastern shore of Burnt Coat Harbor; and Atlantic bordering Mackerel Cove and the northeastern shore where the best farmland existed. In 1850, the farms of Swan's Island provided a perfect complement to the annual cycle of fishing. Forty percent of the wage earners on the island were farmers, though the figure dropped to 15 percent by 1880. The cod fisheries, in Penobscot Bay and on the Grand Banks, formed the backbone of the community. Small boats were used in the local fisheries, with larger vessels being used as the fishing spread northward toward the offshore fishing banks. By 1880, the Swan's Island fleet consisted of 21 vessels, a fleet comparable to that of Deer Isle and Vinalhaven. The herring industry, for bait or canning, assumed importance by 1890, along with lobster fishing. Ownership of their own boats was an important goal for every fisherman, and by 1895, almost a quarter of the taxpayers on the island were listed as owning their own craft (Ellsworth American 2002c).

Historically there have been three post offices and three zip codes on Swan's Island, one in each village, but as of 1995 a new central post office was opened at the approach to Swan's Island village and rural free delivery has been added.

Commercial Fishing

The most important species landings in Swan's Island were lobster (Table 4.5.2-64) from 1997-2006, with 2006 landings considerably higher than the 1997-2006 average. Other landings were in the "other" species grouping, which for Swan's Island includes soft clams and crabs. The landings data for

Swan's Island show steadily increasing landings, yet very little home port fishing. This is somewhat inconsistent with a large number of home ported vessels, which increased from 32 in 1998 to 47 by 2003 and 2004 (Table 4.5.2-65). In most years, the number of owner's city vessels was similar to the number of home ported vessels, meaning that most vessels home ported in Swan's Island are owned by residents here.

Table 4.5.2-64
Dollar Value of Federally Managed Groups Landed in Swan's Island

Federal Group	Rank Value of Average Landings from 1997-2006[b]
Lobster	1
Other[a]	2
Scallop	3

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group

[b] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-65
Commercial Fishing Trends in Swan's Island

Year	Number of vessels with Swan's Island homeport	Number of vessels whose owner receives mail in Swan's Island
1997	33	23
1998	32	24
1999	34	36
2000	38	40
2001	39	40
2002	40	41
2003	47	48
2004	47	48
2005	45	46
2006	44	45

4.5.2.34 Winter Harbor, Maine

The town of Winter Harbor, Maine (44.39°N, 68.08°W) is located in Hancock County approximately 285 driving miles (459 km) northeast of Boston. The town has a total area of 65.7 square miles (170 square km) of which 14.4 square miles (37 square km) are land.

History

Established in 1762, Winter Harbor has traditionally been used by mariners seeking shelter from storms. Its name derives from the fact that the harbor rarely freezes. For much of the 1800's, the cod fishery was the primary source of employment. Employment shifted in the 20th century as Winter Harbor was the site of an important Naval Station. With the closing of the Naval Station in 2001, the population decreased by more than 50 percent to around 450 persons and fishing-related industries again became the primary source of employment.

Commercial Fishing

Lobster was the most valuable species landed in Winter Harbor during the 1997-2006 period; large- and small-mesh groundfish ranked 4th and 8th respectively (Table 4.5.2-66). The number of vessels homeported in Winter Harbor increased from 19 in 1997 to 33 in 2006. The number of vessels whose owners receive mail in Winter Harbor has also increased, although less dramatically (Table 4.5.2-67). This pattern suggests that some of the vessels recently added to the Winter Harbor fleet are owned by individuals residing outside the community.

Table 4.5.2-66
Dollar Value of Federally Managed Groups Landed in Winter Harbor

Federal Group	Rank Value of Average Landings from 1997-2006[d]
Lobster	1
Other[a]	2
Scallop	3
Large-mesh Groundfish[b]	4
Surf Clams, Ocean Quahog	5
Monkfish	6
Herring	7
Small-mesh Groundfish	8
Skate	9

Notes:

[a] "Other" species includes any species not accounted for in a federally managed group

[b] Large-mesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock.

[c] Small-mesh multispecies: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting).

[d] Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.

Table 4.5.2-67 Commercial Fishing Trends in Winter Harbor		
Year	Number of vessels with Winter Harbor homeport	Number of vessels whose owner receives mail in Winter Harbor
1997	19	19
1998	18	17
1999	24	21
2000	25	21
2001	25	21
2002	29	23
2003	27	20
2004	30	24
2005	33	27
2006	33	24

5.0 IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES

Prior to the implementation of sectors in the NE multispecies FMP, input controls affected the amount of fish that could be caught on a trip. Those restrictions, along with binding limits on the total number of days each fisherman could fish, or DAS, were used to control fishing mortality for each of the groundfish stocks. Fishermen were allocated a portion of the target allowable fishing mortality for each species by receiving a specific number of DAS. These fishermen were also prohibited from using certain fishing gear in an effort to further reduce catch per day.

The advent of sectors does not change that overall process. Fishermen that are not members of a sector would still be assigned DAS based on a total allowable fishing mortality. However, sector members rather than being assigned DAS, are allocated an ACE for the majority of the groundfish stocks and allowed more flexibility as to when and how sector members fish for those stocks through an approved Operations Plan. A sector's ACE for each stock is determined by multiplying the sector's proportional share of a stock based upon catch history, by the established ACL for the stock. The catch history is based upon member vessels within a sector. The total ACEs plus expected pounds mortality from the DAS assigned to the Common Pool will sum to the ACL.

If sectors were being introduced into a fishery that focused on a single stock, the introduction would almost certainly result in a reduction in the total amount of gear fished per pound of fish harvested. This is because sector fishermen would have increased flexibility with respect to when and how fishing occurs relative to Common Pool members and sector fishermen would likely be motivated to fish in a manner that increases their expected daily catch rate. As a result, the total amount of gear deployed over a year to target a fixed quantity of a single stock would be expected to decrease somewhat relative to the levels that would have existed under the Common Pool.

However, Northeast multispecies fishermen generally do not pursue a single stock. Instead, fishermen simultaneously target and/or catch several species, each of which has its own ACE. As such, the introduction of sectors allows for the possibility that fishermen could be able to coordinate their fishing to ensure that the sector does not reach its ACE for a single stock well before it reaches its ACE

for the other allocated stocks. This coordinated effort could result in (1) increased harvest levels for stocks that typically were not fully exploited to their allowable limit under Common Pool operations, (2) changes in the amount of gear fished by sector fishermen over the course of a year, and (3) changes to the way gear is fished in order to increase gear selectivity and efficiency.

In summary, the increased flexibility granted to sectors through an approved Operations Plan should increase catch per unit of effort (CPUE), which would tend to decrease the number of days with gear in the water (gear days). However, the ability to target specific stocks could allow sectors to more fully exploit previously under-exploited stocks, which would tend to increase gear days. Because multispecies sectors are relatively recent to the Northeast groundfish fishery, there exists little Northeast specific data to quantitatively determine the net effect of multispecies sector participation on gear days. However, after reviewing theory and available information from Pacific fisheries management (Sanchirico et al. 2006), and discussing the issue with sector representatives and fishermen, it appears likely that the overall change in gear days would conservatively be a slight increase based on going from the DAS approach to the ACE approach of fisheries management.

Further evaluation of potential impacts to physical resources, allocated target species, non-allocated target species and bycatch, protected resources, and human communities is discussed further in Section 5.1. Cumulative impacts of the Proposed Action in combination with other past, present, and reasonably foreseeable actions are discussed in Section 5.2.

5.1 IMPACT ASSESSMENT

Section 5.1 reviews the alternatives that are the subject of this evaluation, establishes criteria for evaluating the impact of each alternative on the VECs identified in Section 4, and discusses impacts.

5.1.1 Alternatives Assessed

This section identifies impacts associated with the Operations Plan requirements (Alternative 1), State permit bank sectors (Alternative 2), proposed sector-specific exemptions for FY 2011 (Alternative 3), State permit bank sector-specific exemptions (Alternative 4), and a No Action Alternative for each.

5.1.1.1 Sector Operations Plans (Alternative 1)

Amendment 16 identified the requirements of any proposed sector Operations Plan including quota management, monitoring, administrative, and gear restriction measures. The various provisions of any sector Operations Plan must be reviewed and approved by NMFS prior to implementation. The primary requirements of any sector Operations Plan associated with potential environmental impacts include:

- Identification of ACE thresholds based on the permit history of sector participants; and
- ACE allocation and discard monitoring.

Details concerning the components of each sector's Operations Plan are provided in Section 3.1. Copies of all Operations Plans can be found by visiting http://www.regulations.gov. Alternative 1 for FY 2011 is the approval of the sector Operations Plans and harvest rules. If Alternative 1 is approved, additional exemptions discussed in Alternative 3 (sector Operations Plans exemptions) may be individually approved or disapproved.

5.1.1.2 State Permit Bank Sectors (Alternative 2)

stateOne state permit bank sector is analyzed within this document, the MPBS. Although other states submitted Operations Plans to form sectors, the Massachusetts, New Hampshire, and Rhode Island State permit bank sectors were unable to fulfill membership requirements. As a result, these state permit bank sectors will not be considered for approval in FY 2011, and an analysis of their Operations Plans and/or exemptions is not included in this EA. The MPBS, would operate as a lease-only sector with no active fishing vessels in FY 2011.

As described in Section 3.2, NOAA is providing a Federal grant to the State of Maine for the express purpose of establishing a bank of Northeast multispecies fishing vessel permits (permitpermit bank). These permits, with certain imposed limitations and constraints, could be leased to sector or Common Pool fishermen to meet specific management goals (in this case maintaining fleet diversity and character). The federal grant is intended to facilitate a partnership between the State of Maine and NMFS and to establish a pilot permit bank program prior to the potential expansion of permit banking programs in other states or regions.

Details concerning components of the State permit bank sectors are provided in Section 3.2. Alternative 2 for FY 2011 is the approval of the state permit bank sectors. If Alternative 2 is approved, additional exemptions discussed in Alternative 4 (State permit bank sector exemptions) may be individually approved or disapproved.

5.1.1.3 Sector Operations Plans Exemptions (Alternative 3)

Amendment 16 allows for proposed sectors to request exemptions to regulations that implement the Northeast Multispecies FMP. The intent is to increase harvest efficiency while minimizing the potential for adverse environmental impacts.

As described in Section 3.3, all exemptions desired for FY 2011 (including those approved in FY 2010) must be requested in FY 2011 Operations Plans. While exemptions will only be granted to those sectors that specifically requested them, for the purposes of this EA, impacts are evaluated as if the exemption would be granted to all sectors.

The sector-specific exemptions are identified in Section 3.3. Alternative 3 for FY 2011 is the approval of sector Operations Plan exemptions either individually or as a group. The decision regarding Alternative 3 is contingent upon the approval of Alternative 1 (sector Operations Plans).

5.1.1.4 State Permit Bank Sector Exemptions (Alternative 4)

The State permit bank sector(s) may request novel exemptions for FY 2011 that would only apply to State permit bank sectorsb (See Section 3.4). Alternative 4 for FY 2011 is the approval of the state permit bank sector exemptions either individually or as a group. The decision regarding Alternative 4 is contingent upon the approval of Alternative 2 (State permit bank sectors).

Potentially Impacted VECs

This analysis considers impacts to 5 VECs:

- Impacts to the physical resources which, for the purposes of this analysis, are defined as the EFH in the sub-regions comprised of the Gulf of Maine, Georges Bank, the southern New England/Mid-Atlantic areas, and the continental shelf/slope. EFH is defined by the SFA as

"[t]hose waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". The conditions currently existing within these physical environments are described in Section 4.1.

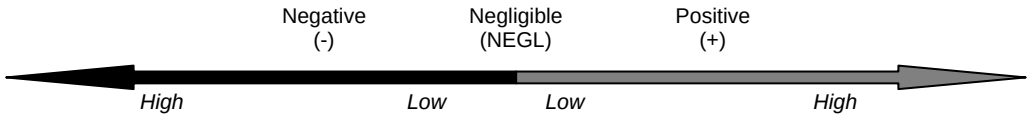
- Impacts to target species which, for the purpose of this analysis, include 14 allocated target groundfish stocks managed under the Northeast Multispecies FMP including (GOM cod, GB cod, GOM haddock, GB haddock, American plaice, witch flounder, GOM winter flounder, GB winter flounder, Cape Cod/GOM yellowtail flounder, GB yellowtail flounder, SNE/MA yellowtail flounder, redfish, pollock, and white hake). The current condition of each stock is described in Section 4.2.
- Impacts to non-allocated target species and bycatch which, for the purposes of this analysis, and following the convention established in Amendment 16 EIS, are defined to include spiny dogfish, skates, and monkfish. As indicated in Table 87 of the Final EIS for Amendment 16, these were the top three non-groundfish species landed by multispecies vessels in FY 2006 and FY 2007 under the Category B (regular) DAS program. The current condition of these stocks is described in Section 4.3
- Impacts to protected resources, which include species under NMFS' jurisdiction, are afforded protection under the ESA (i.e., for those designated as threatened or endangered) and/or the MMPA. As listed in Table 4.4.1-1, 13 marine mammal, sea turtle, and fish species are classified as endangered or threatened under the ESA; the remaining species in Table 4.4.1-1 are protected by the MMPA and are known to interact with the Northeast multispecies fishery. The current condition of these resources is described in Section 4.4.
- Impacts to human communities may include impacts to people's way of life, traditions, and/or communities. These social and economic impacts may be driven by changes in fishery flexibility, opportunity, stability, certainty, safety, and/or other factors and would be most likely experienced across communities, gear cohorts, and/or vessel size classes. The current conditions in the potentially impacted communities are characterized in Section 4.5.

5.1.2 Evaluation Criteria

Potential impacts were evaluated using the criteria outlined in Table 5.1.2-1. All impacts are judged relative to the No Action Alternative.

Table 5.1.2-1
Key to Table 5.1.6-1

Impact Definition			
	Direction		
VEC	**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
Habitat	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		



5.1.3 Impacts of Sector Operations Plans (Alternative 1)

Each sector's Operations Plan is unique. However as discussed in Section 1.0, based upon the general uniformity seen in the FY 2010 Operations Plans and the anticipated continued uniformity, this single EA incorporates all 19 sector Operations Plans for FY 2011.

The harvest rules for all sector Operations Plans tend to fall into one of four broad categories: quota management, monitoring, administrative, and gear restriction.

- *Quota Management:* Harvest rules assigned to this category are largely administrative actions taken to ensure a sector's ACE is not exceeded. While these rules may afford sector participants the flexibility to increase CPUE by timing fishing efforts, they are not expected to materially affect the mix of gear used by fishermen, the number of gear days fished, or fisheries related mortality.

- *Monitoring:* Harvest rules assigned to this category generally relate to the collection of data. These activities ensure that a sector's ACE is not exceeded and may provide data that allows fisheries management to be improved. While these harvest rules will provide a better understanding of discard rates and may ultimately reduce under-fishing of some stocks, they are not expected to materially affect the mix of gear used by fishermen, CPUE, the number of gear days fished, or fisheries related mortality.

- *Administrative:* Harvest rules assigned to this category relate to strictly administrative issues (e.g., transmitting data). While these harvest rules generally shift the burden of reporting from individual sector members to the Sector Manager, they are not expected to materially affect the mix of gear used by fishermen, CPUE, the number of gear days fished, or fisheries related mortality.

- *Gear Restriction:* These restrictions would generally not impact landings. They are intended to ensure operations do not result in new negative impacts to habitats or protected resources. They also ensure that gear used by the sectors is generally similar to the gear used by the Common Pool.

Although not subject for approval in this action, the universal exemptions, as described in Section 3.3.1, were analyzed and approved under Amendment 16. These universal exemptions were approved in Amendment 16 because they are effort controls that are no longer necessary to control fishing mortality resulting from sector operations and, thus, are not anticipated to impact allocated target or non-allocated target species since approved sector catch is managed by an ACE – a hard mortality control. Given that all sectors were expected to apply for them, the universal exemptions were analyzed in Amendment 16 to simplify the annual sector approval process. The following is a summary of the likely impacts from the universal exemptions, provided the sector Operations Plans are approved under Alternative 1. The reader is directed to the Amendment 16 FEIS, and final rule for further discussion concerning the impacts of, and the approval of these universal exemptions.

- *No Days-At-Sea Needed when Groundfishing:* The purpose of Northeast multispecies DAS accounting is to control groundfish mortality by limiting fishing effort to a set number of days per groundfish vessel. Since approved sectors would be allocated an ACE, a hard mortality control that identifies the amount of fish that may be caught, it is no longer necessary to apply DAS rules to this group of fishermen to control groundfish mortality. It is expected that operating under this universal exemption would allow vessels to successfully target select species. This would likely result in an increase in overall fishing time, as compared to the amount of time permitted under the DAS program for Common Pool vessels. Successful targeting of stocks with greater ACE (e.g., GB haddock) would allow sector vessels to spend more time fishing for more abundant stocks whose catch was artificially constrained by DAS allocations designed to reduce effort on stocks that are overfished and/or experiencing overfishing (e.g., SNE/MA winter flounder). A control on mortality (sector ACE), instead of a cap on DAS, may increase gear days for sector members, which could lead to more bottom contact time and more impacts to the physical habitat compared to the Common Pool. Mortality controls on allocated and non-allocated target species are not affected by this universal exemption. However, any potential increase in gear days, as a result of controlling mortality through a sector ACE would potentially result in an increased number of interactions between protected resources and deployed gear compared to the Common Pool, where gear days are set by the DAS regulations. The increased flexibility afforded by this universal exemption is likely to increase revenues, allow fishermen to more fully exploit previously under-exploited stocks, and reduce incentive to fish in unsafe conditions.

- *No Trip Limits:* Trip limits are designed to limit the number of fish caught per trip. Trip limits on allocated target species may result in regulatory discards of fish that exceed relevant daily trip limits. Operating under a universal exemption from this restriction may result in less discards from sector operations, and increased landings and efficiency when combined with the overall mortality controls (sector ACEs). Similar to the no DAS universal exemption above, this may result in increased gear days as compared to the Common Pool, which may lead to more impacts to the physical environment, and lead to more interactions with protected resources. When Common Pool fishermen reach a trip limit for a certain species, they are obligated to discard any additional, marketable catch of that stock from that trip in order to comply with trip limits. This is referred to as "regulatory discard." Since sector members' catch would be regulated by the sector's ACE, trip limits are not needed as an effort control on mortality. Regulatory discard of allocated target and non-target species may be eliminated resulting in a higher proportion of the catch being retained compared to the Common Pool. This universal exemption allows sector participants the flexibility to extend fishing efforts to realize a higher return on those efforts during high harvest periods. This increased flexibility is likely to increase revenues, allow fishermen to more fully exploit previously under-exploited stocks, and reduce incentive to fish in unsafe conditions.

- *Seasonal Closed Area on Georges Bank in May:* This restriction was intended to reduce fishing mortality on GB stocks, particularly GB cod; the closure has also served to reduce fishing activity on cod spawning aggregations. This universal exemption allows fishing on Georges Bank during a month that may have a higher abundance of fish. It is expected that sector operations under this exemption would not increase overall bottom contact time since gear days on Georges Bank will not likely increase, as overall mortality is constrained by sector ACEs. Previously, many vessels chose to begin their required 20-day block out of the fishery at this time. Under this universal exemption, the time out of the fishery could be taken during another time period, but would still need to be taken (unless specifically exempted). As stated, approved sectors ACEs would limit mortality of allocated target stocks; therefore, the intended goal of this seasonal closed area to limit mortality of GB stocks would be achieved regardless of the exemption. Vessels not actively targeting allocated target stocks are still allowed on Georges Bank in May to fish for other fisheries, including non-allocated target species, so disturbance to cod spawning aggregations is not completely avoided when compared to the Common Pool. This universal exemption should increase efficiency resulting in increased vessel profits.

- *Gulf of Maine Rolling Closures:* This universal exemption would allow fishing within areas that are otherwise closed to groundfishermen during specific time periods. Sector vessels are exempted from all rolling closures except for: Blocks 124 and 125 in April; Blocks 132 and 133 in April-May; Block 138 in May; Blocks 139 and 140 in May-June; and Blocks 145, 146,147, and 152 in June. GOM rolling closures were adopted primarily to reduce catches of allocated target species, particularly GOM cod; however, these closures have also served to reduce fishing activity on cod spawning aggregations. Sector fishing activities in these areas, which are otherwise closed to the Common Pool, could result in increased catch of or disturbance to spawning fish, and could result in targeting of allocated target species in areas where fishing effort has been more likely to focus on other fisheries in the past. Vessels not actively targeting groundfish, but fishing for other species, are currently allowed in the GOM closure areas in May, so the GOM rolling closures do not completely avoid disturbance to cod spawning aggregations. It is not expected that this exemption would increase overall bottom contact time since overall fishing effort is confined by sector ACLs, and effort would likely shift to other areas without this exemption. In addition, these areas do not include any HAPC. Increased access to the GOM fishing grounds during spring and fall should increase CPUE and may allow vessels to more fully exploit previously under-exploited stocks. It also

provides sector vessels access during a time when few grounds are open leading to increased opportunities. This would in turn lead to increased vessel profits likely resulting in a positive effect on both sector participants and ports. However, if the threshold of harbor porpoise take is exceeded, closures may be triggered for all sink gillnet vessels (i.e., groundfish and non-groundfish alike).

- *Six-inch Cod-end Exemption on Georges Bank if using Haddock Separator or Ruhle Trawl:* This exemption allows the use of a six-inch mesh cod-end when sector vessels fish with selective trawl gear (haddock separator or Ruhle trawl), which would facilitate selective fishing for haddock by sector vessels because both the separator and Ruhle trawls increase the proportion of haddock caught compared to cod. Sector operations under this exemption would not be expected to substantially change mortality since the catch would be controlled by sector ACE. It is possible using this exemption may increase harvest of sub-legal size fish; however, this is less likely to affect species that swim closest to the bottom (e.g., cod) because of the nets design; although, it is possible that increased retention of sub-legal catch may cause shifts in stock composition. Since these modified trawls have less contact with the seafloor, it is expected that sector operations under this exemption would not affect habitat, as gear contact time with the seafloor would not increase as a result of these trawls. The use of a smaller mesh size on haddock separators or Ruhle trawls are not likely to affect protected resources as the minor reduction in mesh size would not alter the expected rate of entanglement. The use of this exemption by sector vessels would increase profit margins and allow fishermen to more fully exploit previously under-exploited stocks.

Sector Operations Plans (Alternative 1) would generally have a negligible impact on the physical environment and protected resources as they are not expected to affect the number of gear days fished and/or are intended to ensure that operations do not result in new negative impacts to the physical environment and/or protected resources. Although gear days may increase from targeting under-exploited stocks, increased efficiency could also act to reduce days fished. As the majority of the harvest rules are not expected to affect the landings of non-allocated target species and bycatch, impacts to this VEC would be negligible. Since sector vessels would likely convert vessel catch into more landing and less discard while not exceeding ACEs, impacts to allocated target species as a result of Alternative 1 would be expected to be negligible.

The harvest rules would allow participants the flexibility to time fishing efforts to correspond with optimal market and or environmental conditions while not exceeding ACE. This increased flexibility is likely to increase revenues, allow fishermen to more fully exploit previously under-exploited stocks, and reduce incentive to fish in unsafe conditions. As such, impacts to sector ports and sector participants would be positive.

Alternative 2 proposes to approve the Maine Permit Banking Sector (MPBS), which would allow the MPBS to acquire ACE for the purposes of leasing it to eligible sectors, per the requirements of the Maine State permit bank MOA and the MPBS FY 2011 Operations Plan. In addition, Amendment 17 to the Northeast Multispecies FMP is in development, and would allow for NOAA-sponsored, state-operated permit banks to lease ACE, without first becoming or joining sectors (see Section 5.2). As discussed in Section 3.2, several State permit banks, including the Maine State Permit Bank, have existing MOAs with NMFS, and have the following generally positive impacts on sector participants and ports:

- secure continued access to fishery resources for fishermen regardless of their groundfish fishing history;
- create and protect sustainable local fisheries; and

- mitigate the effects of fishing effort consolidation on small-scale fishermen.

As described in the analysis conducted for the authorization of state-operated permit bank sectors under FW Adjustment 45, there exists the potential that state permit banks may affect the market price associated with the vessels/permits for purchase, and DAS and sector ACE available to lease. Because at least part of the funding for state permit banks to purchase permits is in the form of Federal grants, they are not driven by the need to assure a particular return on investment, particularly compared to a private fishing business whose capital to purchase permits is derived from commercial loans. Thus, these banks may be able to afford to offer higher prices for available permits than private commercial entities. In a similar manner, state permit banks and state-operated permit bank sectors could offer DAS and sector ACE on the leasing market for comparably cheaper prices than a private commercial entity, as specified in the original intent of creating such permit banks and in the MOAs between the States' and NMFS. If private commercial entities cannot compete with state-operated permit banks in the permit market, this could result in reduced access to further fishing opportunities by such entities if the permit bank can influence market prices. The distribution of such impacts would vary based on the communities and sectors eligible to receive DAS or sector ACE from the permit banks based upon the conditions specified in the MOAs. Further, the scale of the impact of such an effect on the market price for permits may be mitigated by the availability of permits with larger landings histories or DAS allocations. If permits with larger landings histories or DAS allocations are not available, as suggested in the analysis of FW Adjustment 45, purchasing additional permits or leasing additional DAS or sector ACE could only marginally increase future fishing opportunities.

Although the State-operated permit banks have the potential to affect market prices for permits, DAS, and sector ACE, and, therefore, the costs of permit acquisition or leasing DAS and sector ACE, the positive social benefits that would result from the ability of these banks to acquire and lease ACE to other sectors would likely outweigh these potential market impacts. The ability of these banks to lease ACE would achieve several social objectives identified in the FMP, including minimizing the adverse impacts on fishing communities and shoreside infrastructure and maintaining a diverse groundfish fishery. Additionally, the banks would increase DAS and sector ACE available to smaller sector vessels operating out of smaller communities. Thus, the operation of the state-operated permit banks would help minimize adverse impacts on such communities and allow for their sustained participation in the groundfish fishery, and overall the ability of sectors to acquire ACE from permit banks would result in positive impacts to sector participants and ports.

If the No Action Alternative is selected for Alternative 1, sectors would not have approved Operations Plans and vessels participating in the Northeast multispecies fishery would return, or remain in, the Common Pool where they would fish under DAS regulation. Therefore, the No Action Alternative would subject these vessels to the input control measures, implemented by Amendment 13, subsequent framework adjustments, and Amendment 16. Relative to the approval of Alternative 1, the change in impacts to physical environment/habitat/EFH, non-allocated target species and bycatch, and protected resources would be negligible. Because groundfish fishermen would not benefit from the increase operational flexibility expected under sector management selecting the No Action Alternative for Alternative 1 would represent a negligible impact on allocated target species and negative impacts on sector ports and participants. If no sector Operations Plans are approved under Alternative 1, there would be minimal impact from the ability of a NOAA-sponsored, state-operated permit bank to acquire or lease ACE, as they would have no ability to fish this ACE per the MOA or to lease ACE to sectors.

5.1.4 Impacts of State Permit Bank Sectors (Alternative 2)

The Maine Permit Banking Sector (MPBS) is being considered for approval in FY 2011. The MPBS would operate as a lease-only sector with no active fishing vessels in FY 2011. As outlined in the

MOA between NMFS and the State of Maine, and incorporated into the MPBS Operations Plan, the ACE and/or DAS associated with MPBS permits would be distributed to eligible sectors and/or vessels who will be required to land their catch in Maine. To be an eligible sector, sixty-five percent of the enrolled fishing vessels must be registered as less than 45 feet in overall length and the vessel must reside/operate within a community with a population of no more than 30,000 residents. Additionally, the lessee sector vessel that fishes the ACE from the MPBS must be no more than 45 feet in overall length. In order for the MPBS to meet the definition of a sector (having at least three distinct members), two other entities that hold eligible Northeast multispecies permits have enrolled in the MPBS, in addition to permits the permit bank has purchased or intends to purchase. The MPBS Operations Plan details how these permits shall be used by the sector, including that all ACE/DAS contributed to the sector from these two additional permits will be leased to the Port Clyde Community Groundfish Sector.

Because the MPBS is lease-only, the impacts of the fishing activity associated with harvesting the ACE allocated to the MPBS (Alternative 2) on the physical environment, allocated stocks, non-allocated target species and bycatch, and/or protected resources are captured in analysis of fishing operations of the other sectors analyzed within this document, which would lease and fish the allocation from MPBS. In addition, all impacts to sector ports and communities as a result of the operation of state permit bank sectorsare assessed in Section 5.1.3, as these impacts are only realized if a state-operated permit bank is able to acquire and lease ACE to existing sectors by becoming a sector under existing regulations, or, under amended regulations should Amendment 17 be approved.

If the No Action is selected for Alternative 2, the MPBS would not be approved to operate as a sector in FY 2011. As a result, the Maine State Permit Bank would not be able to use the sector to lease sector allocation or DAS to eligible sectors and vessels. Under the No Action the permits enrolled in the MPBS would remain in the Common Pool for FY 2011. Relative to the approval of Alternative 2, the change in impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, protected resources, and ports and sector participants would be negligible.

5.1.5 Impacts of Sector Operations Plans Exemptions (excluding State Permit Bank Sectors) (Alternative 3)

Section 5.1.6 describes the impacts of approving exemptions requested by FY 2011 sectors. The impacts of exemptions are evaluated individually and NMFS may approve or disapprove them individually or as a group. Additional detail on the regulatory history leading up to each exemption request is in Section 3.3. At its November 18, 2010, meeting, the Council voted to remove DSM requirements from the list of prohibited sector exemptions. The DSM exemptions, requested in Operationssubmitted on September 1, 2010 were first considered following this Council vote. Therefore, this did not provide sufficient time for these exemptions to be analyzed in the draft EA. Analysis for these exemptions has since been completed and provided here in the final EA. While the impacts associated with the implementation of each of the exemptions in this EA are analyzed as if each exemption would be implemented for all sectors, each exemption will only be implemented for those sectors which request them. Please refer to Table 3.3.2-1 for a detailed list of which sectors have requested which exemptions for approval under the Proposed Action.

1. *120 Day Block Out of the Fishery Requirement for Day Gillnet Vessels*

Gillnet vessels must take a total of 120 days out of the gillnet fishery during the fishing year. Each period of time taken must be a minimum of 7 consecutive days. At least 21 days must be taken between June 1st and September 30th of each fishing year. A required 20-day spawning season time out period is also credited toward the 120 days time out of the gillnet fishery. The block out requirements were implemented as a means of controlling mortality and to reduce the possibility that gillnet vessels could compensate for other effort reduction measures by extending soak time between trips. The

requirement to take time out during the summer months was intended to apply the time out requirement when seasonal gillnet activity is highest.

Because sector members would operate under an ACE, an exemption would increase the operational flexibility of sector vessels while maintaining the mortality control rationale for the measure. The increased flexibility could result in effort being distributed more evenly throughout the year and may increase the CPUE and thereby decrease fishing time and bottom contact for the fishing gear. Since sector gillnet vessels would operate under an ACE, a minor increase in CPUE would generally result in fewer gear days. However, the ability to target specific stocks may result in an increase in gear days. Therefore, for the purposes of this assessment, it was conservatively assumed that this exemption would result in a minor increase in gear days as sector gillnet vessels would have the ability to fish during an additional 120 days if ACE were not attained.

Impacts to the physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch are likely to be negligible or would be negligible. It is likely that the impacts to the physical environment/habitat/EFH would be negligible despite a possible increase in gear days because gillnets have a low impact on habitat. Negligible impacts to allocated target species would occur because harvest is controlled by ACE and potential impacts to spawning aggregations are limited by other existing regulations. Likewise, assuming a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks, there would be negligible impacts as ACE would limit the potential for impacts to non-allocated target species and bycatch. Additionally, non-allocated species such as monkfish, dogfish, and skates have management measures in place to limit the catch of these species and control mortality regardless of the time of year. These management measures are:

- The use of up to 150 nets total in each RMA is consistent with the monkfish FMP. Monkfish mortality is also limited by DAS and trip limits;
- Fishing effort on skates is further restricted by trip limits; and
- Landing dogfish does not require the use of a DAS, but sector vessels would still be restricted by the 3,000 pounds-per-trip landings limit and quotas.

An increase in gillnet days could increase interactions with protected resources. While participants would be required to adhere to all applicable gillnet gear restrictions, the exemption would have a low negative impact on protected resources due to the potential for increased gear days. In contrast, increasing operational flexibility, while maintaining the mortality control rationale for the measure would, increase the expected profit margins of sector fishermen. This would represent a low positive impact on sector participants and ports.

Under the No Action Alternative for this exemption, Day gillnet vessels belonging to sectors would still have to declare 120 days out of the fishery. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch would likely be negligible or negligible. Impacts to protected resources would be low positive and impacts to sector participants and ports would be low negative.

2. *20-Day Spawning Block*

All Northeast groundfish vessels are required to take 20 days out of the fishery between March 1 and May 31 of each year. The 20-day block out rule was imposed as a mortality-control measure and with associated benefits to provide protection for spawning aggregations.

Sectors have requested that they be exempted from the 20-day spawning block. This would allow effort to shift to the spring when CPUE may be increased. Since sector members would operate under an ACE, a minor increase in CPUE could result in fewer gear days. However, the ability to target specific stocks may also result in an increase in gear days; because the exemption is limited to 20 days, it is likely that any potential increase in gear days would be minor.

In addition, exempting vessels from the 20-day spawning block may increase disturbance to or harvest of actively spawning groundfish and/or disrupt spawning behavior. This would have a proportionally greater effect on stock production than harvest of non-spawning fish. However, the lower quality and lower price of spawning fish creates disincentive for vessels to target them. An exemption from this restriction would not necessarily directly result in increased effort in the Gulf of Maine on spawning stocks, as vessels could fish on Georges Bank or southern New England instead. Furthermore, exempt vessels would still be subject to the GOM Rolling Closure Areas, which are specifically designed to protect spawning aggregations.

Impacts to the physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch are likely to be negligible or negligible. It is likely that the physical environment/habitat/EFH would likely be negligible because any potential increase in gear days would be minor. While the result of this exemption may be to increase fishing effort at a time and in areas where fish are aggregating to spawn, the potential impact of this exemption is controlled predominantly by the ACEs for each allocated target stock. Once an ACE is achieved for any allocated target stock, sector members must stop fishing in that stock area with any gear capable of catching groundfish unless additional ACE is obtained. In addition, exempt vessels would still be subject to the GOM Rolling Closure Areas, which are specifically designed to protect spawning aggregations as well as market pressures which may reduce incentives to target spawning stocks. Based on the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks, ACEs would also function as a dominant control to limit impacts to non-allocated target species and bycatch.

While any potential change in gear days would be minor, protected resources may be more prevalent in areas of high fish abundance and even minor increases in gear days could result in increased interactions which would result in a low negative impact on protected resources. In contrast, by increasing operational flexibility while generally maintaining the mortality control rationale, for the measure the exemption would increase the expected profit margins of sector fishermen. This would represent a low positive impact on sector participants and ports.

Under the No Action Alternative for this exemption, vessels belonging to sectors would still have to declare 20 days out of the fishery between March 1 and May 31. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch would likely be negligible or negligible. Impacts to protected resources would be low positive and impacts to sector participants and ports would be low negative.

3. *Limitation on the Number of Gillnets for Day Gillnet Vessels*

Current regulations restrict Day gillnet vessels from fishing more than: 100 gillnets (of which no more than 50 can be roundfish gillnets) in the GOM RMA; 50 gillnets in the GB RMA; and 75 gillnets in the SNE/MA RMAs. The existing gillnet limit was implemented to reduce fishing effort and fishing mortality. It also had the effect of reducing the potential that gear would be left unattended to "hold" fishing ground.

Sectors have requested an exemption to increase the limit on the number of gillnets imposed on the Day gillnet category to 150 nets per permit in all RMAs. While sector members would operate under an ACE, the proposed exemption could result in longer soak times because it may take more time to

retrieve and process the nets. In turn, this could decrease CPUE as longer soaks could result in undocumented groundfish mortality due to losses such as predation and net drop-out. Because fish that drop out or are entirely consumed by predators would not be counted against ACE, the decrease in CPUE could result in an increase in gear days and increased fishery mortality. This potential is mitigated because untended gillnets can lead to loss of nets, providing an incentive for fishermen to haul nets more frequently.

Impacts to the physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch are likely to be negligible. The likely negligible impact to the physical environment/habitat/EFH would be expected despite a possible increase in gear days because gillnets have a low impact on habitat. Likely negligible impacts to allocated target species would be expected because harvest would be controlled by ACE. Net drop-out and predation could result in some fish not being counted against ACE, however, this potential is mitigated by sector rules and economic incentives. Likewise, assuming a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks, ACEs would likely limit the potential for impacts to non-allocated target species and bycatch. Additionally, non-allocated species such as monkfish, dogfish, and skates have management measures in place to limit the catch of these species and control mortality regardless of the time of year. These management measures are:

- The use of up to 150 nets total in each RMA is consistent with the monkfish FMP. Monkfish mortality is also limited by DAS and trip limits;
- Fishing effort on skates is further restricted by trip limits; and
- Landing dogfish does not require the use of a DAS, but sector vessels would still be restricted by the 3,000 pounds-per-trip landings limit and quotas.

The increase in the number of gillnets allowed in the water at one time and the potential for an overall increase in gear days could increase interactions with protected resources. While participants would be required to adhere to pinger and gear requirements as outlined in the HPTRP, and would have to comply with the weak link, sinking/neutrally buoyant ground line requirements of the ALWTRP, the exemption would have a low negative impact on protected resources.

The increased operational flexibility would increase the expected profit margins of sector fishermen, thereby resulting in low positive impacts to sector participants. However, exempting sector vessels from the gillnet measures could result in gear being left to hold fishing ground which could increase inter-vessel conflicts. As such, implementation of this exemption would represent a low negative impact to ports.

Under the No Action Alternative for this exemption, Day gillnet vessels belonging to sectors would be limited to: 100 gillnets (of which no more than 50 can be groundfish gillnets) in the GOM RMA; 50 gillnets in the GB RMA; and 75 gillnets in the SNE/MA RMAs. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch would likely be negligible. Impacts to protected resources and ports would be low positive and impacts to sector participants would be low negative.

4. *Prohibition on a Vessel Hauling Another Vessel's Gillnet Gear*

Current regulations require vessels to deploy and haul their own gillnets. The regulations were established to facilitate the enforcement of existing regulations and also act as a mortality control measure by reducing gear days. This exemption would allow one sector vessel to deploy stand-up and tie-down gillnet gear and to have a second vessel from the same sector tend the gear while the first returns to port.

The increased flexibility afforded by this exemption may increase CPUE. An increase in CPUE coupled with ACE would tend to decrease gear days. There is also some potential that net sharing may lead to a reduction in the number of nets deployed at one time relative to vessels deploying and retrieving nets individually. However, the proposed exemption could result in longer soak times if community gear is attended to less faithfully than individual gear. This could decrease CPUE as longer soaks could result in undocumented groundfish mortality due to losses such as predation and net drop-out. Because fish that drop out or are entirely consumed by predators would not be counted against ACE, the decrease in CPUE could result in an increase in gear days and increased fishery mortality. This potential is mitigated because fishermen would still need to comply with federal law and because untended gillnets can lead to loss of nets, providing an incentive for fishermen to haul nets more frequently.

As such, for the purpose of this assessment it is assumed the exemption is likely to result in a negligible impact on CPUE, soak times, ghost fishing [lost or abandoned gear that continues to fish (FAO 2010)], and gear days. Resulting impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources are likely to be negligible.

The increased operational flexibility would increase the expected profit margins of sector fishermen, thereby resulting in low positive impacts to sector participants. However, the use of community fixed gear could result in gear being deployed to "hold ground" which could increase inter-vessel conflicts. As such, implementation of this exemption would represent a low negative impact to ports.

Under the No Action Alternative for this exemption, sector vessels would have to deploy and haul their own gear. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources would likely be negligible. Impacts to sector participants would be low negative and impacts to ports would be low positive because the potential to hold ground by deploying gear would be reduced.

5. *Limitation on the Number of Gillnets That May Be Hauled on Georges Bank When Fishing Under a Groundfish/Monkfish DAS*

Vessels fishing under a groundfish/monkfish DAS may haul only 50 nets per day when fishing on Georges Bank. The limit was implemented as a groundfish mortality control.

The requested exemption would not permit the use of additional nets; it would allow nets deployed under existing net limits (a maximum of 150 nets), according to the Monkfish FMP, to be hauled more efficiently by vessels dually permitted under both FMPs. The exemption would only apply when specifically targeting monkfish under the Monkfish FMP on Georges Bank.

The net hauling restriction serves to distribute a fixed fishing effort among more fishermen. Because sector members would still be bound by ACE and existing net limits, the exemption would allow them to increase efficiency relative to fishing under DAS. Since the number of nets would not be increasing, there would not be an increase in gear days. As such, impacts to the physical environment/habitat/EFH and protected resources would be negligible.

The impacts of this exemption on allocated target stocks would be limited by sector use of the exemption only when specifically targeting monkfish under the Monkfish FMP. Additional net use while targeting monkfish could increase the by-catch of allocated target stocks during a monkfish DAS for exempt sector participants compared to non-exempt fisherman. However, the allocated target stocks caught while targeting monkfish would count against the sector's ACE for those stocks. Therefore, the implementation of this exemption for all sector gillnet vessels would result in a negligible impact to allocated target stocks.

Additional net use while targeting monkfish could increase the catch of monkfish as well as the bycatch of skates and dogfish. However, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality; monkfish and skate harvest are limited by DAS and trip limits and dogfish impacts are regulated by the 3,000 pounds-per-trip landings limit and quotas. Overall, low negative impacts to non-allocated target species and bycatch resulting from this exemption would occur when applied to all sectors.

Because sector members operate under an ACE, this exemption would increase their operational flexibility when fishing under DAS while maintaining the mortality control rationale for the measure. Implementing this exemption for all sectors would increase flexibility and profit margins resulting in a low positive impact on sector participants and ports.

Under the No Action Alternative for this exemption, sector vessels fishing under a groundfish/monkfish DAS would be allowed to haul only 50 nets per day when fishing on Georges Bank. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, and protected resources would be negligible. Impacts to non-allocated target species and bycatch would be low positive and impacts to sector participants and ports would be low negative.

6. *Limitation on the Number of Hooks That May be Fished*

The existing hook limit restriction functions to reduce fishing effort, reduce fishing mortality, and reduce the potential that gear could be used to "hold" fishing ground. This exemption seeks to remove hook limits on sector vessels.

The increased operational flexibility may increase CPUE; an increase in CPUE coupled with ACE would tend to decrease gear days. However, exempting sector vessels from the hook limit measure could result in longer soak times or gear left unattended to hold fishing ground which could result in groundfish mortality that is neither reported nor applied to sector ACE. This would tend to result in an increase in gear days. For the purpose of this assessment it is conservatively assumed the exemption would result in a minor increase in hook days.

The impact of any potential change in hook days is mitigated by the relatively small percentage (15 percent) of sector vessels that operate a mix of gear which includes bottom longlines, hooks, traps, and pots. In addition, hook fishing is noted by NMFS to strongly limit catch of "flatfishes," which are the category of stocks of greatest conservation concern. Exemptions that could shift effort toward hook fishing have the potential to protect weaker stocks of flatfish and thus provide some conservation benefits to these species relative to targeting the multispecies complex with some other gear types.

Impacts to physical environment/habitat/EFH, allocated target stocks, and protected resources would be negligible and impacts to non-allocated target stocks and bycatch would likely be negligible. Impacts to physical environment/habitat/EFH and protected resources would be negligible due to the minimal expected change in gear days and the low level of impact associated with hook gear. Potential impacts to allocated species are limited by ACE, offsetting incentives to increase soak time, and the low proportion of the fleet that utilizes hook gear. Likewise, ACE is likely to limit potential impacts to non-allocated target species and bycatch under the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks. In addition, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply.

The increased operational flexibility would increase the expected profit margins of sector fishermen, thereby resulting in low positive impacts to sector participants. However, increasing the number of hooks fished by each vessel could result in gear being deployed to "hold ground" which could

increase inter-vessel conflicts. As such, implementation of this exemption would represent a low negative impact to ports.

Under the No Action Alternative for this exemption, sector hook vessels would be limited in the number of hooks they fish. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch and protected resources would be negligible or likely negligible. Impacts to sector participants would be low negative and impacts to ports would be low positive because the potential to hold ground by deploying gear would be reduced.

7. *Length and Horsepower Restrictions on DAS Leasing*

Currently multispecies vessels are allowed to lease DAS from other vessels provided they meet the restrictions of the DAS Leasing Program concerning vessel length and horsepower. The intent of the restriction is to maintain the character of the fleet. Sectors have requested an exemption to allow DAS leasing to vessels in other approved sectors with this exemption irrespective of length and horsepower.

This exemption is related to retention of monkfish and skates harvested while vessels participate in the multispecies fishery. Sector vessels are exempt from the requirement to use a Northeast multispecies DAS to harvest groundfish, but sector vessels are still allocated NE multispecies DAS to use in complying with provisions of the Monkfish and Skate FMPs. While groundfish sector fishermen would be exempt from the use of DAS to catch allocated target species, they would still need to expend groundfish DAS to land and retain an increased quantity of monkfish or skates under some circumstances.

This exemption would not be expected to increase fishing effort as the total number of DAS allocated to the fishery would not increase. Impacts to physical environment/habitat/EFH and protected resources would be negligible as gear days are not expected to change. Similarly, ACE and DAS regulation would ensure negligible impacts to allocated target species, and non-allocated target species and bycatch by capping overall mortality. In addition, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply.

The exemption from DAS leasing restrictions would result in low positive impacts to sector participants and ports as it would expand the pool of vessels that sectors could lease DAS. While the character of the fleet could change somewhat if sectors are exempted from DAS leasing restrictions, these changes may occur without this exemption because ACE can be fished by vessels of any size. This potentially negative factor is more than offset by the potential for increased vessel profitability and the positive affect that revenue would have on ports resulting in a low positive impact on ports.

Under the No Action Alternative for this exemption, sector vessels would be subject to length and gear restrictions when leasing DAS within and between sectors. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch and protected resources would be negligible, and impacts to sector participants and ports would be low negative.

The impacts associated with the implementation of this exemption have been analyzed for all sectors and all sectors have requested this exemption for approval under the Proposed Action.

8. *The GOM Sink Gillnet Mesh Exemption*

Sink gillnet vessels accounted for 15 percent of commercial landings for GOM haddock from calendar year (CY) 1997 – CY 2002, but only 11 percent from CY 2003 through CY 2007. This change

is partly attributed to a court ordered increase in mesh size that was adopted in 2002, and then incorporated into Amendment 13 (implemented May 1, 2004) because the increased mesh size is ineffective for targeting haddock (see Amendment 16, Figure 132 and Marciano et al. 2005).

Sectors have requested an exemption to allow smaller (6-inch) mesh sink gillnets to be used within the GOM RMA from January through April. By reducing the mesh size, sink gillnet fishermen may be able to target GOM haddock. As such, the exemption would likely increase the number of gillnet days in the GOM RMA and may reduce the possibility that GOM haddock would be under-harvested. Because haddock harvest is limited by a sector's ACE, and because mobile, bottom tending fishing gear tends to be less selective, the increased use of sink gillnets could, theoretically, reduce the number of gear days associated with mobile, bottom-tending fishing gear like trawls if vessels switch to using sink gillnets to take advantage of this exemption.

This exemption, consistent with the final rule that implemented addenda to add exemptions to the 17 approved FY 2010 sector Operations Plans (75 FR 80720), would institute a net limit for Day gillnet vessels in sectors that opted for this exemption, and set a limit of between 50 and 150 nets. To maximize the flexibility for sector vessels fishing under this exemption, NMFS is allowing Day gillnet vessels participating in a sector granted both the GOM sink gillnet mesh exemption and the general net limit exemption to fish up to 150 stand-up nets in the GOM RMA during this period (up to 150 nets total in all RMAs). Day gillnet vessels participating in a sector that has not also been approved for the general net limit exemption will be restricted to the limit of 50 stand-up sink gillnets during this period, consistent with existing net limits in the GOM RMA specified at § 648.80(a)(3)(iv)(B)(2). The exemption could also theoretically result in longer soak times because of the time required to retrieve and process more nets than would be allowed per non-exempt sector vessel. Longer soaks could result in undocumented mortality of allocated target species and non-allocated target species and bycatch due to losses such as predation and net drop-out. Longer soaks could also result in allocated target species and non-allocated species and bycatch mortality that is not documented in untended gillnets. However, untended gillnets can lead to loss of nets, providing an incentive for fishermen to haul nets more frequently. There may also be increased discards due to predation damage which would be undocumented if the entire fish is consumed. Only those damaged fish that are brought aboard and subsequently discarded would be documented. To the extent that undocumented losses occur, there is a potential for an increased mortality rate on allocated target and non-allocated target species and bycatch.

While gillnet days in the GOM RMA may increase relative to mobile, bottom-tending fishing gear like trawls, bottom gillnets have negligible to minor impacts to benthic habitats (NEFSC 2002). These impacts would not be different from impacts that are occurring due to current fishing practices (gillnetting during January-April currently uses 6.5-inch rather than the requested 6-inch mesh nets); therefore it would be expected that this exemption would likely result in a negligible impact to physical environment/habitat/EFH.

Impacts to allocated target species and non-allocated target species and bycatch would be negligible or would likely be negligible. This is largely because ACE controls the harvest of allocated target species and, under the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks, ACE also is likely to limit potential impacts to non-allocated target and bycatch species. In addition, participating vessels would not be allowed to use tie-down nets as part of this exemption and non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply. This would minimize the incidence of skate and monkfish catch as flatfish nets are generally used to target these species. However, it is worth noting that, while the exemption is limited to the GOM RMA, the GOM RMA also overlaps stock areas for GB and SNE/MA stocks. SNE/MA winter flounder, in particular, is

overfished and required a 100 percent reduction in fishing mortality under Amendment 16. Reducing the minimum mesh size during this period could potentially increase catch of SNE/MA winter flounder.

The potential for an increased number of gillnets could increase interactions with protected resources by allowing more opportunities for animals to be caught. The restricted seasonality associated with the exemption would limit potential impacts to protected resources to a period from January 1 to April 30. While participants would also be required to adhere to pinger and gear requirements as outlined in the HPTRP, and would have to comply with the weak link, sinking/neutrally buoyant ground line requirements of the ALWTRP the exemption would have a low negative impact on protected resources due to the potential for increased gear days. In contrast, the GOM sink gillnet exemption would allow a greater catch of haddock to be retained increasing revenue in the fishery. This would represent a positive impact to ports and sector participants.

Under the No Action Alternative for this exemption, the minimum mesh size for sector vessels fishing sink gillnets in the GOM RMA from January through April would be 6.5 inches. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch would be likely negligible to negligible. Impacts to protected resources would be low positive and impacts to sector participants and ports would be low negative.

9. *Prohibition on Discarding*

Current regulations prohibit sector vessels from discarding any legal-sized fish of allocated stocks. The requirement was intended to ensure accurate monitoring of sector ACE.

As a result of these regulations, sector vessels have to store catch that may be damaged or contaminated in separate totes on deck in order to keep unmarketable catch separate from the food grade product. These additional storage totes can compromise fisherman safety and/or potentially destabilize the boat.

Once in port, the disposal of unmarketable fish can pose an economic challenge. Data for FY 2010 (through November 2, 2010) indicate that 7.3 percent of observed trips reported allocated target species catch which was kept because regulations prohibited discard at sea (disposition code 172). The amount of unmarketable fish that a vessel brings in on a single trip varies by gear type. Gillnet trips accounted for the majority of the kept legal-sized unmarketable fish. Of the 151 observed gillnet trips with kept legal-sized unmarketable fish, gillnet vessels averaged approximately 96 pounds of legal-sized unmarketable fish. Observed gillnet trips ranged from zero to approximately 400 pounds of kept legal-sized unmarketable fish. The 7 observed longline trips with kept legal-sized unmarketable fish averaged approximately 65 pounds per trip and the 3 observed trawl trips with kept legal-sized unmarketable fish averaged approximately 23 pounds per trip. Observed longline trips ranged from zero pounds to approximately 150 pounds of kept legal-sized unmarketable fish while observed trawl trips ranged from zero to approximately 14 pounds of kept legal-sized unmarketable fish.

The requested exemption would allow sector vessels on a sector trip to discard unmarketable fish at sea. The exemption would only apply to sector vessels, all of which are subject to an ACE and discarded fish would be recorded by At-Sea Monitors on observed trips and incorporated into the sector's specific discard rates by stock and gear strata for unobserved trips. Since sectors are capped by an ACE, and discards count against ACE, the ability to discard fish at sea would not result in a change in gear mix, CPUE, fishing effort/gear days, or landings.

Impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources would be negligible or are likely to be negligible. Impacts to physical environment/habitat/EFH and protected resources would be negligible because gear days are

not expected to change. Potential impacts to allocated target species are limited by the fact that discards are already deceased and would count against ACE. ACE is also likely to limit potential impacts to non-allocated target species and bycatch under the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks. In addition, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply.

The increased operational flexibility is expected to increase safety and may increase the profitability of vessels and/or dealers. This would represent a low positive impact on ports and sector participants.

Under the No Action Alternative for this exemption, sector vessels would be required to bring any legal-sized fish of allocated stocks to port. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protect resources would be negligible or likely negligible. Impacts to sector participants and ports would be low negative.

10. *Access to GOM Rolling Closure Areas in May*

Current regulations prohibit Northeast groundfish fishermen from accessing blocks 138 and 139 in May for the purpose of harvesting groundfish. The intent of the regulations was to limit fishing mortality and to reduce disturbance to, or harvest of, spawning aggregations of groundfish, particularly GOM cod. However, other fisheries have been allowed into blocks 138 and 139 during May so disturbance has not been all together eliminated.

Sectors have requested an exemption to allow their vessels access to blocks 138 and 139 in May; (exempt vessels would still be subject to additional GOM Rolling Closure Areas, which are specifically designed to reduce fishing effort on GOM groundfish stocks and to reduce marine mammal bycatch). The effect of the exemption would be to shift groundfish effort into the blocks in May when CPUE could be increased. Since sector members would operate under an ACE, a minor increase in CPUE could result in fewer gear days. However, the ability to target specific stocks may also result in an increase in gear days; because the exemption is limited to one month, it is likely that any potential increase in gear days would be minor.

In addition, allowing access to blocks 138 and 139 in May could increase disturbance to, or harvest of, actively spawning groundfish and/or disrupt spawning behavior. This would have a proportionally greater effect on stock production than harvest of non-spawning fish. However, the lower quality and lower price of spawning fish creates disincentive for vessels to target them.

Impacts to the physical environment/habitat/EFH would be negligible because any potential increase in gear days would be minor and blocks 138 and 139 are not known to contain any habitat area of particular concern (HAPC).

In contrast, impacts to allocated target species would be low negative. While the impact of this exemption would in part, be controlled by the ACEs for each allocated target stock, this exemption may increase fishing effort at a time and in areas where allocated target species, specifically cod, are aggregating to spawn. Please see Amendment 16 for information regarding the spawning distribution and behavior of groundfish species in the Gulf of Maine. Disturbance to and harvest of spawning aggregations would have a proportionally greater effect on stock production than the targeting of non-spawning fish. Thus, providing access to blocks 138 and 139 in May, closures specifically designed to minimize impacts to spawning aggregations, would have a low negative impact on allocated target species.

Impacts to non-allocated target species and bycatch would be negligible because, under the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks, ACEs would also function as a dominant control to limit impacts to non-allocated target species and bycatch. In addition, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply.

Access to Blocks 138 and 139 in May - Impacts to protected resources are likely to be low negative. Large and small cetaceans and sea turtles are more prevalent within the operations area during the spring and summer; harbor seals may be more likely to occur in the operations area between fall and spring, and hooded and harp seals are more likely to occur during the winter and spring. Atlantic sturgeon are more likely to occur in the operation area during spring and fall, although this area is not a concentration area for Atlantic sturgeon at any time of the year. Minor increases in gear days, particularly sink gillnet gear days, could result in increased interactions with one or more protected species depending on where and when the use of additional sink gillnet gear occurred. Participants would be required to adhere to pinger and gear requirements as outlined in the HPTRP (63 FR 66464), and would have to comply with weak link, sinking/neutrally buoyant ground line requirements of the ALWTRP. These measures help to reduce the likelihood and/or severity of harbor porpoise and large whale interactions, respectively, with sink gillnet gear.

By increasing operational flexibility while generally maintaining the mortality control rationale for the measure, the exemption would increase the expected profit margins of sector fishermen. The exemption may have a secondary impact on sector participants in that it would increase fishing ground access particularly for day boats in Maine-based sectors who tend to be most impacted by GOM rolling closures. Allowing these vessels to fish closer to home may increase their profit margins. Taken together these effects represent a low positive impact on sector participants and ports unless disturbance to spawning aggregations slowed stock rebuilding efforts. Under this slowed stock rebuilding scenario, impacts to sector participants and ports would be low negative. Furthermore, if increased fishing activity in blocks 138 and 139 increased bycatch of harbor porpoises in the HPTRP Midcoast Management Area, it could trigger the Coastal GOM Consequence Closure Area, which would close a portion of the inshore Gulf of Maine to all gillnet gear in October-November each year. Once triggered, this closure would remain in effect until bycatch is reduced or until new conservation measures are implemented. This closure would affect sector as well as non-sector gillnet fishermen, and would result in reduced fishing opportunity and revenues. A full analysis of the impacts to human communities resulting from this closure area was analyzed in Section 4.2 of the HPTRP EA (NMFS, 2009d). Sector vessels have a strong incentive to comply with pinger requirements to ensure that a closure is not triggered and access to these fishing grounds are not lost, suggesting that this adverse effect is not likely. However, if a closure were triggered, impacts to sector participants and ports would be low negative. Overall, impacts of this exemption on sector participants and ports would likely be low positive but possibly low negative.

Under the No Action Alternative for this exemption, vessels belonging to sectors would not be able to access blocks 138 and 139 in May for the purpose of harvesting groundfish. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH and non-allocated target species and bycatch would be negligible. Impacts to protected resources and allocated target species would likely be low positive and impacts to sector participants and ports would likely be low negative but possibly low positive.

11. *Access to GOM Rolling Closure Areas in June*

Current regulations prohibit Northeast groundfish fishermen from accessing blocks 139, 145, and 146 in June for the purpose of harvesting groundfish. The intent of the regulations was to limit fishing

mortality and to reduce disturbance to, or harvest of, spawning aggregations of groundfish, particularly GOM cod.

Sectors have requested an exemption to allow their vessels access to blocks 139, 145, and 146 in June for the purpose of harvesting groundfish (exempt vessels would still be subject to additional GOM Rolling Closure Areas, which are specifically designed to reduce fishing effort on GOM groundfish stocks and to reduce marine mammal bycatch). The effect of the exemption would be to shift groundfish effort into the blocks in June when CPUE could be increased. Since sector members would operate under an ACE, a minor increase in CPUE could result in fewer gear days. However, the ability to target specific stocks may also result in an increase in gear days; because the exemption is limited to one month, it is likely that any potential increase in gear days would be minor.

In addition, allowing access to blocks 139, 145, and 146 in June could increase disturbance to, or harvest of, actively spawning groundfish and/or disrupt spawning behavior. Please see Amendment 16 for information regarding the spawning distribution and behavior of groundfish species in the Gulf of Maine. This would have a proportionally greater effect on stock production than harvest of non-spawning fish. However, the lower quality and lower price of spawning fish creates disincentive for vessels to target them. Furthermore, exempt vessels would still be subject to the GOM Rolling Closure Areas, which are specifically designed to protect spawning aggregations.

Impacts to the physical environment/habitat/EFH would be negligible because any potential increase in gear days would be minor and blocks 139, 145, and 146 are not known to contain any HAPC.

In contrast, impacts to allocated target species would be low negative. While the impact of this exemption would in part, be controlled by the ACEs for each allocated target stock, this exemption may increase fishing effort at a time and in areas where allocated target species, specifically cod, are aggregating to spawn. Disturbance to and harvest of spawning aggregations would have a proportionally greater effect on stock production than the targeting of non-spawning fish. Thus, providing access to blocks 139, 145, and 146 in June, closures specifically designed to minimize impacts to spawning aggregations, would have a low negative impact on allocated target species.

Impacts to non-allocated target species and bycatch would likewise be negligible because, under the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks, ACEs would also function as a dominant control to limit impacts to non-allocated target species and bycatch. In addition, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply.

Access to Blocks 139, 145, and 146 in June - Impacts to protected resources are likely to be low negative. As described for the measure regarding access to Blocks 138 and 139 in May, a number of protected species may be present in the area in June; most notably some cetacean species and sea turtles. Minor increases in gear days, particularly sink gillnet gear days, could result in increased interactions with one or more protected species depending on where and when the use of additional sink gillnet gear occurred. Participants would have to comply with weak link, sinking/neutrally buoyant ground line requirements of the ALWTRP. These measures help to reduce the likelihood and/or severity of large whale interactions with sink gillnet gear.

By increasing operational flexibility while generally maintaining the mortality control rationale for the measure, the exemption would increase the expected profit margins of sector fishermen. The exemption may have a secondary impact on sector participants in that it would increase fishing ground access particularly for day boats in Maine-based sectors who tend to be most impacted by GOM rolling closures. Allowing these vessels to fish closer to home may also increase their profit margins. Taken

together these effects represent a low positive impact on sector participants and ports unless disturbance to spawning aggregations slowed stock rebuilding efforts. Under that circumstance, impacts to sector participants and ports would be low negative. Overall, impacts of this exemption on sector participants and ports would likely be low positive but possibly low negative.

Under the No Action Alternative for this exemption, vessels belonging to sectors would not be able to access blocks 139, 145, and 146 in June for the purpose of harvesting groundfish. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH and non-allocated target species and bycatch would be negligible. Impacts to protected resources and allocated target species would likely be low positive and impacts to sector participants and ports would likely be low negative but possibly low positive.

12. *Prohibition on the Possession or use of Squid or Mackerel in the Closed Area 1 Hook Gear Haddock Special Access Program*

Vessels issued a valid limited access Northeast multispecies DAS permit are eligible to participate in the Closed Area I Hook Gear Haddock SAP May 1 through January 31 of each fishing year, to allow the targeting of GB haddock. However these vessels are not allowed to use squid or mackerel as bait. The bait restrictions were enacted after data from an experimental fishery suggested that the use of squid as bait increased catch rates of cod (a stock in need of additional protection).

Sectors have requested an exemption which would allow hook vessels to use squid and/or mackerel as bait while they participate in the Closed Area I Hook Gear Haddock SAP.

The exemption would have two primary effects on fishing behavior: hook vessels that participate in the Closed Area I Hook Gear Haddock SAP would shift toward squid and/or mackerel as bait in an effort to increase CPUE, and vessels that otherwise would not have participated in the Closed Area I Hook Gear Haddock SAP may shift effort into the SAP to increase CPUE. Since sector members would operate under an ACE, a minor increase in CPUE could result in fewer gear days. However, the ability to target specific stocks may also result in an increase in gear days. For the purpose of this assessment we conservatively assume the exemption would result in a minor increase in hook days.

In addition, this closed area provides protection for spawning groundfish and, thus, the exemption may increase harvest of actively spawning groundfish (particularly cod whose spawning season extends into May). This would have a proportionally greater effect on stock production than harvest of non-spawning fish. However, the lower quality and lower price of spawning fish creates disincentive for vessels to target them. The potential impact is mitigated by the relatively small percentage (15 percent) of sector vessels that operate a mix of gear which includes bottom longlines, hooks, traps, and pots. In addition, hook fishing is noted by NMFS to strongly limit catch of "flatfishes," which are the category of stocks of greatest conservation concern. Exemptions that could shift effort toward hook fishing have the potential to protect weaker stocks of flatfish and thus provide some conservation benefits to these species relative to targeting the multispecies complex with some other gear types.

Impacts to physical environment/habitat/EFH, allocated target stocks, non-allocated target species and bycatch, and protected resources would be negligible or are likely to be negligible. Impacts to physical environment/habitat/EFH and protected resources would be negligible due to the minimal expected change in gear days and the low level of impact associated with hook gear. Potential negligible impacts to allocated species are limited by the sector's ACE, offsetting incentives to increase soak time, and the low proportion of the fleet that utilizes hook gear. Likewise, ACE is likely to limit the likely negligible impacts to non-allocated target species and bycatch under the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks. In addition, non-

allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply.

By increasing operational flexibility while generally maintaining the mortality control rationale for the bait restriction, the exemption would increase the expected profit margins of sector fishermen. This would represent a low positive impact on sector participants and ports.

Under the No Action Alternative for this exemption, sector hook vessels participating in the Closed Area I Hook Gear Haddock SAP would not be able to use or possess squid or mackerel. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources would be negligible. Impacts to sector participants and ports would be low negative because they would forego the expected increase in CPUE associated with the use of squid and/or mackerel as bait.

13. *Daily Catch Reporting by Sector Managers for Vessels Participating in the Closed Area 1 Hook Gear Haddock SAP*

Sector vessels are required to submit daily reports to the Sector Manager while fishing in the Closed Area I Hook Gear Haddock SAP. The Sector Manager compiles these into a report and submits it daily to NMFS. The requested exemption would relax the requirement that vessels submit a daily catch report to the Sector Manager. Instead Sector Managers would require each vessel to submit their own report to NMFS via VMS.

As this is an administrative matter, an exemption from this regulation would have a negligible effect on physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources.

This exemption would reduce the administrative burden on Sector Managers but not necessarily sector vessels which would have to submit reports through VMS to NMFS at a cost of approximately $0.84 per transmission. However, the fact that the exemption request has been submitted suggests that participants in the requesting sector would find daily vessel reporting advantageous. Therefore, it is expected that this exemption would represent a low positive impact on sector participants and ports.

Under the No Action Alternative for this exemption, sector vessels would be required to submit daily reports to the Sector Manager while fishing in the Closed Area I Hook Gear Haddock SAP and Sector Managers would compile these into a report and submits it to NMFS. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, protected resources would be negligible. Impacts to sector participants and ports would be low negative.

14. *Extension of the GOM Sink Gillnet Mesh Exemption through May*

Sink gillnet vessels accounted for 15 percent of commercial landings for GOM haddock from CY 1997 – CY 2002, but only 11 percent from CY 2003 through CY 2007. This change is partly attributed to a court ordered increase in mesh size that was adopted in 2002, and then incorporated into Amendment 13 (implemented May 1, 2004) because the increased mesh size is ineffective for targeting haddock (see Amendment 16, Figure 132 and Marciano et al. 2005).

Sectors have requested an exemption to allow smaller (6-inch) mesh sink gillnets to be used within the GOM RMA from January through April (exemption #8). In the event that the GOM Sink Gillnet exemption request is approved, this exemption requests that the GOM Sink Gillnet exemption be extended through May (one additional month).

By reducing the mesh size, sink gillnet fishermen may be able to target GOM haddock. As such, the exemption would likely increase the number of gillnet days in the GOM RMA and may reduce the possibility that GOM haddock would be under-harvested. Because haddock harvest is limited by a sector's ACE, and because mobile, bottom tending fishing gear tends to be less selective, the increased use of sink gillnets could, at some point, reduce the number of gear days associated with mobile, bottom-tending fishing gear like trawls, if sector vessels switched to sink gillnets to take advantage of this exemption.

This exemption, consistent with the final rule that implemented addenda to add exemptions to the 17 approved FY 2010 Sector Operations Plans (75 FR 80720), would institute a net limit for Day gillnet vessels in sectors that opted for this exemption, and set a limit of between 50 and 150 nets. To maximize the flexibility for sector vessels fishing under this exemption, NMFS is allowing Day gillnet vessels participating in a sector granted both the GOM sink gillnet mesh exemption and the general net limit exemption to fish up to 150 stand-up nets in the GOM RMA during this period (up to 150 nets total in all RMAs). Day gillnet vessels participating in a sector that has not also been approved for the general net limit exemption will be restricted to the limit of 50 stand-up sink gillnets during this period, consistent with existing net limits in the GOM RMA specified at § 648.80(a)(3)(iv)(B)(2). The proposed exemption could also result in theoretically longer soak times because of the time required to retrieve and process more nets than would be allowed per non-exempt sector vessel. Longer soaks could result in undocumented mortality of allocated target species and non-allocated target species and bycatch due to losses such as predation and net drop-out. Longer soaks could also result in allocated target species and non-allocated species and bycatch mortality that is not documented in untended gillnets. However, untended gillnets can lead to loss of nets, providing an incentive for fishermen to haul nets more frequently. There may also be increased discards due to predation damage which would be undocumented if the entire fish is consumed. Only those damaged fish that are brought aboard and subsequently discarded would be documented. To the extent that undocumented losses occur, there is a potential for an increased mortality rate on allocated target species and non-allocated target species and bycatch.

While gillnet days in the GOM RMA may increase; relative to mobile, bottom-tending fishing gear like trawls; bottom gillnets have negligible to minor impacts to benthic habitats (NEFSC 2002). These impacts would not be different from impacts that are occurring due to current fishing practices (gillnetting during January-April currently uses 6.5-inch rather than the requested 6-inch mesh nets); therefore it would be expected that this exemption would likely result in a negligible impact to physical environment/habitat/EFH.

Impacts to allocated target species and non-allocated target species and bycatch would be negligible or are likely to be negligible, respectively. This is largely because ACE controls the harvest of allocated target species and, under the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks, ACE also limits potential impacts to non-allocated target and bycatch species. In addition, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply. However, it is worth noting that, while the exemption is limited to the GOM RMA, the GOM RMA also overlaps stock areas for GB and SNE/MA stocks. SNE/MA winter flounder, in particular, is overfished and required a 100 percent reduction in fishing mortality under Amendment 16. Reducing the minimum mesh size during this period could potentially increase catch of SNE/MA winter flounder. However, sector vessels utilizing this exemption would be prohibited from using flatfish nets.

GOM Haddock Sink Gillnet Program in May - Although bycatch of harbor porpoises, sea turtles, coastal bottlenose dolphins, and Atlantic sturgeon is more likely to occur in gillnets with larger mesh (Orphanides 2009, Rossman and Paulka 2004, Murray 2009, Damon-Randall et al. 2010). It is unlikely

that the slight reduction (0.5-inch) in mesh size of gillnets would significantly alter the extent of protected species interactions. An increased number of gillnets as a result of this exemption could increase interactions with protected resources depending on where and when the use of additional sink gillnet gear occurred. However, participants would be required to adhere to pinger and gear requirements as outlined in the HPTRP and the weak link, sinking/neutrally buoyant groundline requirements of the ALWTRP. These measures help to reduce the likelihood and/or severity of harbor porpoise and large whale interactions with sink gillnet gear. Although Atlantic sturgeon are known to occur in GOM waters in the spring, they occur in waters less than 50 m in depth and tend to aggregate at the mouths of large rivers such as the Kennebec River (Dunton et al. 2010). t Therefore, the exemption would have a low negative impact on protected resources due to the potential for increased gear days. In contrast, the GOM sink gillnet exemption would allow a greater catch of haddock to be retained increasing revenue in the fishery. This would represent a low positive impact to ports and Sector participants.

Under the No Action Alternative for this exemption, the minimum mesh size for sector vessels fishing sink gillnets in the GOM RMA in the month of May would be 6.5 inches. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch would be negligible. Impacts to protected resources would be low positive and impacts to sector participants and ports would be low negative.

15. *Prohibition on Pair Trawling*

Regulations prohibit the use of two vessels when towing a single trawl (pair trawling). The prohibition was enacted as a mortality control to address the highly efficient (pair trawling is reported to increase catch rates by up to a factor of 5.85) but minimally selective, nature of pair trawling. At the time the prohibition was implemented the Ruhle trawl, a more selective trawling method (See exemption 18), had not yet been approved for use.

Sectors have requested that their vessels be exempted from the pair trawl prohibition when using the more selective Ruhle Trawl (Eliminator Trawl™). The intent of the exemption is to increase haddock catch rates while avoiding harvest of cod.

According to Beutel et al. (2006), the Ruhle trawl results in reduced bottom habitat impacts as compared to a traditional otter trawl due to the larger spacing between discs along the rockhopper sweep which makes for a lighter sweep with less bottom contact.

Experimental data from a single vessel pulling a Ruhle trawl indicates that the design of the net and the behavior of different fish species minimize the catch of certain species, such as cod and flounder, while maintaining the catch of currently healthier stocks, such as haddock; therefore, the ability to use a paired Ruhle trawl could enable vessels to efficiently target stocks with higher ACEs (such as haddock), while minimizing the catch of target stocks with lower ACEs (such as cod). Similarly, the more selective nature of the nets could reduce the number of non-allocated target species and bycatch.

While there is little data describing catch rates by the Ruhle trawl when towed by two vessels, the exemption is expected to result in increased use of the Ruhle Trawl, increased landings, and increased CPUE among sector members because pair trawling is generally a highly efficient fishing method (59 FR 28). An increase in CPUE coupled with ACE would tend to decrease gear days. However, the ability to target haddock would tend to result in an increase in gear days. For the purpose of this assessment it is conservatively assumed the exemption would result in a minor increase in trawl days in addition to the shift from two vessels towing traditional otter trawls towards two vessels towing a single Ruhle trawl.

Impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch are likely to be negligible or likely negligible. Impacts to physical

environment/habitat/EFH are expected to be negligible due to the reduced bottom habitat impacts from the Ruhle trawl. Impacts to allocated target species would likely be negligible because harvest is controlled by ACE and, assuming a relatively constant ratio between the catch of allocated target species and the catch of non-allocated target species and bycatch, ACE would also result in negligible impacts to non-allocated target species and bycatch. Additionally, non-allocated species and bycatch such as monkfish, dogfish, and skates have management measures in place to limit the catch of these species and control mortality. Impacts to protected resources are likely to be low negative due to the increase in trawl days. An increase in trawl days is expected to increase the likelihood of incidental mortality/injury to protected resources.

In contrast, the exemption would increase CPUE and allow the targeting of a traditionally underutilized stock. The increase in profit and revenue would represent a low positive impact on sector participants and ports.

Under the No Action Alternative for this exemption, sector vessels would not be allowed to pair trawl. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources would be likely negligible to negligible. In contrast, impacts to sector participants and ports would be low negative because they would not be able to target haddock using what may be a highly efficient approach.

16. *Minimum Hook Size Requirements for Demersal Longline Gear*

Regulations require a minimum circle hook size of 12/0 for demersal longlines when fishing under a Northeast multispecies DAS or when fishing under the small-vessel permit in the GOM, GB, or SNE RMAs. The minimum circle hook size was intended to both reduce the catch of small fish and to improve their survivability in the hook fishery.

The exemption from this hook size restriction would allow sector vessels to use any sized hook for demersal longlines. The exemption is intended to increase CPUE by targeting flatfish and smaller fish. Since sector members would operate under an ACE, a minor increase in CPUE could result in fewer gear days. However, the ability to target specific stocks may also result in an increase in gear days. For the purpose of this assessment a minor increase in hook days is assumed. Impacts to physical environment/habitat/EFHand protected resources would be negligible. Impacts to allocated target stocks, non-allocated target species and bycatch would be low negative. Impacts to physical environment/habitat/EFH and protected resources would be negligible due to the minimal expected change in gear days and the low level of impact associated with hook gear. The impact of any potential change in hook days is further mitigated by the relatively small percentage (15 percent) of sector vessels that operate a mix of gear which includes bottom longlines, hooks, traps, and pots. Potential impacts to allocated species are limited by ACE and the low proportion of the fleet that utilizes hook gear. Likewise, ACE limits potential impacts to non-allocated target species and bycatch under the assumption of a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks. In addition, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply. However, the exemption could also result in greater retention of sub-legal groundfish, non-allocated species and bycatch (such as SNE/MA winter flounder).

The increased operational flexibility would increase the expected profit margins of sector fishermen, thereby resulting in low positive impacts to sector participants and ports.

Under the No Action Alternative for this exemption, sector hook vessels would be required to use a minimum circle hook size of 12/0 for demersal longlines when fishing under a Northeast multispecies DAS or when fishing under the small-vessel permit in the GOM, GB, or SNE RMAs. Relative to the

approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources would be negligible. Impacts to sector participants and ports would be low negative.

17. *Minimum Mesh Size Requirements on Targeted Redfish Trips*

Minimum mesh size restrictions (§ 648.80(a)(3)(i), (a)(4)(i), (b)(2)(i), (c)(2)(i)) were implemented under Amendment 13 (69 FR 22906, April 27, 2004) in conjunction with other management measures, including FW 42, to reduce overall mortality on groundfish stocks, change the selection pattern of the fishery to target larger fish, improve survival of sublegal fish, and allow sublegal fish more opportunity to spawn before entering the fishery. FW 42 set requirements for trawl codends in the SNE RMA to be made of either square or diamond mesh no smaller than 6.5 inches. The minimum mesh requirements implemented by FW 42 are intended to reduce discards of yellowtail flounder thereby increasing the rate of yellowtail flounder rebuilding (NEFMC 2006).

Sectors have requested an exemption that would allow their vessels to use 5-inch mesh codends to target redfish. The sectors requesting this exemption proposed that sector vessels participating in the directed redfish fishery be required to declare their intentions to the Sector Manager and NMFS at least 48 hours prior to departure, have 100 percent observer coverage, and submit daily catch reports.

The exemption is intended to increase CPUE by retaining a greater proportion of the fish in the trawls codend. Since sector members would operate under an ACE, a minor increase in CPUE could result in fewer gear days. However, the ability to target specific stocks may also result in an increase in gear days. For the purpose of this assessment an increase in trawl days is assumed. The exemption could also result in greater retention of sub-legal groundfish, non-allocated species and bycatch (such as SNE/MA winter flounder).

Impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch are expected to be low negative. The low negative impact to habitat is due to the increase in trawl days and the greater impact associated with trawl gear relative to other gear. While sector vessels fish under an ACE and all landings of allocated stocks are counted against that ACE, minimum mesh sizes have been set by NMFS to reduce discard mortality and allow greater escapement of sub-legal groundfish, with the purpose of expanding the stock age structure and increasing yield-per-recruit and spawning stock biomass. The use of 5-inch mesh would be inconsistent with the intent of improving stock age structures. However, non-allocated target species and bycatch have management measures in place to limit their catch and control mortality, with which sector vessels would still be required to comply.

Impacts to protected resources would likely be negligible because the change in mesh size is not expected to change the nature of impacts to protected resources and the potential increase in gear days is minor.

By increasing operational flexibility this exemption would likely increase the expected short run profits of sector fishermen. However, if disturbance to spawning aggregations slowed stock rebuilding efforts, long run profits may decrease. The resulting impacts to sector participants and ports are likely to be low positive but could possibly be low negative.

Under the No Action Alternative for this exemption, sector vessels would be required to adhere to the existing minimum trawl codend mesh sizes specified for GOM, GB, SNE, and MA RMAs, regardless of the stock being targeted. Relative to the approval of the exemption, impact to physical environment/habitat/EFH would be low positive due to the exemptions likelihood of increasing trawl days which have greater impacts relative to other gear. Impacts to protected resources would be negligible.

Impacts to allocated target species and non-allocated target species and bycatch would be low positive because the rationale of improving stock age structure would be maintained. Impacts to sector participants and ports would likely be low negative but possibly low positive.

18. *Ruhle and Haddock Separator Requirements to Utilize the 98.4 in x 15.7 in (250 cm x 40 cm) Eliminator Trawl™*

Through a series of tests, the Eliminator Trawl™ (Ruhle Trawl) has been identified as an approved technology to capture haddock while reducing the catch of cod and other groundfish stocks of concern. The research to support the approval of the Ruhle Trawl (Beutel et al. 2006) investigated the specific size and configuration of trawl gear, and the conclusions of that research pertained only to trawl nets of similar configuration. Research is currently underway testing a smaller, experimental version of the Eliminator Trawl™ (73 FR 40186, 7/14/08), but at this time, there is no definitive data to suggest that the modified Eliminator Trawl™ would result in similar outcomes.

Sectors have requested an exemption to allow the use of an Eliminator Trawl™ with a fishing circle as small as 250 x 40 cm (the smaller experimental version of the previously tested Eliminator Trawl™) for use in all areas and for all purposes for which the Eliminator Trawl™ has previously been approved (including but not limited to the Eastern US/Canada Area SAP).

This exemption would facilitate the use of the Eliminator Trawl™ technology by smaller vessels allowing these vessels to target haddock (a stock that has recently been underutilized) while avoiding cod harvest (a stock for which many sectors have limited ACE). The result would be an increase in gear days and, potentially, a switch from traditional trawl gear to the Eliminator Trawl™ among small vessels.

Impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch would be negligible or would likely be negligible. Impacts to habitats would be negligible despite the increase in gear days because smaller vessels would switch from standard otter trawls to the Eliminator Trawl™ (Ruhle trawl). Since use of this trawl results in reduced bottom habitat impacts as compared to a standard otter trawl. This is due to the larger spacing between discs along the rockhopper sweep which makes for a lighter sweep with less bottom contact (Beutel et al. 2006). Impacts to allocated target species would likely be negligible because harvest is controlled by ACE and, assuming a relatively constant ratio between the catch of allocated target species and the catch of non-allocated target species and bycatch, ACE would also limit the potential for impacts to non-allocated target species and bycatch. Additionally, non-allocated species such as monkfish, dogfish, and skates have management measures in place to limit the catch of these species and control mortality. Impacts to protected resources would likely be low negative due to the increase in trawl days. An increase in trawl days is expected to increase the likelihood of incidental mortality/injury to protected resources.

Impacts to sector participants and ports would be low positive because the exemption would allow smaller vessels to target the generally underutilized haddock stock. This would increase equity among larger and smaller vessels and increase revenue to sector participants.

Under the No Action Alternative for this exemption, sector vessels would not be able to use an Eliminator Trawl™ with a fishing circle of 250 x 40 cm. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources would be negligible. Impacts to sector participants and ports would be low negative because they would not be able to target haddock with smaller vessels.

19. *Gear Requirements in the U.S./Canada Management Area*

In the U.S./Canada Management Area both the U.S. and Canada coordinate the management of transboundary fisheries stocks including GB cod, GB haddock, and GB yellowtail flounder. U.S. vessels in the U.S./Canada area are required to use gear that is designed to minimize the catch of cod (the stock which tends to reach its TAC first) and constrain catches of other stocks. These gear types currently include the haddock separator trawl and the Ruhle trawl. The gear requirements are intended to ensure that the U.S. does not exceed its share of U.S./Canada Area TAC particularly the GB cod TAC.

Sectors have requested an exemption to allow their vessels to use any type of trawling gear while fishing in the U.S./Canada area. The exemption is intended to increase CPUE by allowing all trawl gear types in the area. Since sector members would operate under an ACE, a minor increase in CPUE could result in fewer gear days. However, the ability to target specific stocks may also result in an increase in gear days. For the purpose of this assessment an increase in U.S./Canada Area trawl days is assumed.

Impacts to physical environment/habitat/EFH would be low negative. The low negative impact to habitat is the result of an increase in trawl days and the relatively adverse habitat impacts that are associated with trawling.

Impacts to allocated target species would be negligible because harvest is controlled by ACE, including separate ACEs for Eastern U.S./Canada Area cod and haddock. Likewise, assuming a relatively constant ratio of non-allocated target species and bycatch to allocated target stocks, ACE would limit the potential for impacts to non-allocated target species and bycatch. Additionally, non-allocated species such as monkfish, dogfish, and skates have management measures in place to limit the catch of these species and control mortality. Therefore, impacts to non-allocated target species and bycatch would be negligible.

Impacts to protected resources would likely be negligible to low negative. The likely negligible to low negative impact to protect resources is the result of an increase in trawl days and the observations that trawl gear results in occasional incidental mortality/injury to pinnipeds and cetaceans, although they are more detrimental to sea turtles.

Because sector members would operate under an ACE, an exemption from this restriction would increase their operational flexibility while maintaining the mortality control rationale for the measure. In addition, this exemption could result in increased profit margins if sectors are able to more efficiently harvest underutilized ACEs, such as haddock. Therefore this exemption should result in a low positive impact on sector participants and ports.

Under the No Action Alternative for this exemption, sector vessels would not be able to use all trawl gear types when fishing the U.S./Canada Area. Relative to the approval of the exemption, impacts to allocated target species and non-allocated target species and bycatch would be negligible. Because trawl gear days would not increase, impacts to physical environment/habitat/EFH would be low positive. Impacts to protected resources would likely be negligible or possibly low positive. In contrast, impacts to sector participants and ports would be low negative.

20. *Requirement to Power a VMS While at the Dock*

Groundfish vessels are required to have an approved and operational VMS on board in order to fish on a Northeast multispecies DAS, on a sector trip, or when a vessel has declared their intent to fish in more than one broad stock area on the same trip. Once a vessel enters the Northeast groundfishery the VMS must remain powered-up except under limited circumstances. The requirement facilitates the monitoring of vessels engaged in the Northeast groundfishery.

Sectors have requested an exemption from keeping the VMS units powered while tied to the dock or on a mooring. As this is an administrative matter, exemption to this regulation would have a negligible effect on physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources. The requested exemption would reduce the administrative and financial burden of powering the VMS which would represent a low positive impact on sector participants and ports.

Under the No Action Alternative for this exemption, sector vessels would be required to have an approved and operational VMS on board in order to fish on a Northeast multispecies DAS, on a sector trip, or when a vessel has declared their intent to fish in more than one broad stock area on the same trip. Once a vessel entered the fishery, the VMS would need to be powered up except under specific circumstances. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protect resources would be negligible. Impacts to sector participants and ports would be low negative.

21. *All DSM and Roving Monitoring Requirements*

If approved, this exemption would exempt sectors from the requirement of dockside monitoring for commercial groundfish trips. As a result, landings would not be independently verified, though dealer reports and vessel reports will still be required. Therefore, it is possible that landings information would be less accurate than under the No Action Alternative. The extent to which this would occur is unknown since there is no experience with which to characterize the effectiveness of dockside monitoring in this fishery. This also assumes that the absence of a monitor may lead to inaccurate reporting, and there is no empirical evidence to determine if this will actually occur. Nevertheless, a potential lack of dockside monitoring creates an opportunity for additional inaccurate landings reports to be submitted. This could lead to less certainty in controlling catches to the specified sector ACL and potentially result in a failure to achieve mortality targets. If this exemption is approved, such a result is more likely than under the No Action Alternative even though the difference cannot be quantified. Therefore, this alternative would likely have low-negative impacts to allocated target, and non-allocated target species. The proposed exemption from dockside monitoring requirements is expected to have negligible impacts to physical environment/habitat/EFH/ and protected resources, as compared to No Action, because it is not expected to influence the magnitude or location of catch, or gear days.

The cost of dockside monitoring for FY 2010 has been subsidized by NMFS. Measures contained in FW 45 would allow up to 100 percent coverage (depending on NMFS funding levels), with reimbursement of the costs by NMFS. Based on preliminary data, the overall average cost associated with dockside monitoring in FY 2010, averaged about $0.02 per landed pound. This estimate is based on an agreed formula between the NMFS and sector managers to calculate reimbursement for dockside monitoring services which includes a per pound rate of $0.015, $33 per trip monitored, and $27 per trip requiring a roving monitor. Note that the estimated cost per pound landed for monitored trips was based on invoices received by sectors from May through August, 2010. However, not all sectors had sent in invoices as of the date the average cost reported herein were estimated so the actual costs may differ by sector and may be substantially different once the fishing year has been completed. The estimated cost for dockside monitoring for FY 2010 would be $616,000 or 0.8 percent of estimated FY 2010 revenues. Depending on actions contained in FWFW 45, dockside monitoring levels could be as high as 100 percent in FY 2011, contingent on NMFS funding. Note that the actual overall average dockside monitoring cost per pound landed will be zero for any lease-only sectors and may be higher for sectors with below average landings per trip since the trip cost gets spread out over fewer pounds. Similarly, the average cost per pound may be lower for sectors with higher than average landings per trip. These costs would be eliminated if this exemption were to be approved. If sectors were not required to pay upfront for dockside monitoring, they could run more profitable trips and have more occupational opportunities. Further,

reporting burden would decrease. However, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. Therefore, the exemption would result in a likely negligible impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100-percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the coefficient of variation (CV) standard of the Standardized Bycatch Reporting Methodology (SBRM) and the level of required coverage will be specified by NMFS. However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the ability of the management program to achieve mortality targets. Accurate landings and discard information are needed in order to conduct stock assessments. By requiring an at-sea monitoring program, information is collected in order to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness. Under the No Action option, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, under the No Action alternative, the DSM will also continue. As a result, the ability to constrain sector catches to the desired quotas should continue. This should contribute to achieving mortality targets, and therefore, relative to the approval of the exemption, the No Action alternative would likely have low-positive impacts on allocated target, and non-allocated target species.

There would be negligible impacts to the physical environment/habitat/EFH and protected resources as a result of the No Action alternative, as the exemption is not expected to influence the magnitude or location of catch, or gear days, and the No Action would leave the requirements for dockside monitoring unchanged. The at-sea and dockside monitoring costs are currently being paid upfront by sectors, with a later reimbursement by NMFS. The costs associated with this option, as described above, would likely be short term low negative impacts to ports and sector participants, although the relatively high level of monitoring itself is expected to have positive impacts on other VECs. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue. However, the use of the higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and developing more accurate data which will inform management and ensure fairness in regulations. Therefore, the No Action Alternative would likely have long term negligible, unknown impacts on sector participants and ports.

22. *DSM Requirements for Directed Monkfish, Skate, and Dogfish Trips*

In most cases a directed monkfish, skate, or dogfish trip requires a declaration into the groundfish fishery and so is treated as a groundfish sector trip under the NE multispecies regulations. Therefore, there is no set of regulations that defines a "dedicated monkfish, skate, or dogfish," trip and NMFS has no way to identify these trips. Sector vessels that opt to fish under a self-declared monkfish, skate, or dogfish trip, may fish in any groundfish open area, would not be restricted from targeting or landing

groundfish, and would still have to comply with the full retention requirements for allocated stocks. Further, the NMFS VMS system does not differentiate these trips from dedicated groundfish trips, so NMFS does not have a reliable method for knowing when a vessel is fishing on a self-designated monkfish, skate, or dogfish trip. Therefore, if sector vessels were exempt from DSM requirements while fishing for monkfish, skate, or dogfish, and legally landed a large percentage of groundfish, it may lead to misreporting of catch. Because such trips cannot be consistently identified, NMFS does not have reliable information as to how many of these trips would occur in FY 2011. For these reasons, impacts to the VECs are the same for this proposed exemption as those described under exemption #21.

23. *DSM Requirements for Jig Vessels*

This alternative would allow jig vessels to be exempt from the requirement for dockside monitoring. Similar to the prior DSM exemptions, there is a possibility that if this exemption is approved the catch information from these vessels may be less accurate than if the requirement remains in place. However, this assumes that the absence of a monitor may lead to inaccurate reporting, and there is no empirical evidence to determine if this will actually occur. Although NMFS does not have an accurate method to determine the number of groundfish trips that are "jig" trips, as stated in the EA for FW 45, handgear vessels land less than one-half of one percent of the groundfish landed by permitted vessels; therefore, it is unlikely that this will make a noticeable difference in the ability to assess stocks as a whole. In addition, this is not an exemption from any mortality control for allocated or non-allocated stocks. As a result, it is likely that there would be negligible impacts to allocated target and non-allocated target species as a result of this alternative, when compared to the No Action Alternative. This exemption is not expected to influence the magnitude or location of catch, or gear days, and thus is expected to result in negligible impacts to physical environment/EFH and protected resources as compared to No Action. NMFS intends on covering the cost of DSM for sector vessels in FY2011. However, as stated earlier, vessels must pay upfront for monitoring, and then be reimbursed for the cost by NMFS. There is also an increased reporting burden for vessels to fulfill the DSM requirements. For small jig vessels, their share of the DSM burden is disproportionately higher than larger vessels, because they land less groundfish per trip on average, and as such, it is difficult for these vessels to cover the upfront cost of this monitoring. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. This exemption would likely have positive social impacts for the portion of the fleet to which it is directed. If these small vessel operators are not required to pay for dockside monitoring, they can run more profitable trips and have more occupational opportunities. For the fleet as a whole, however, this option may appear to be inequitable. The removal of dockside monitoring requirements for only these types of vessels may seem unfair to other operators that land similar or slightly higher amounts of groundfish with different permit types. In general, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. However, since Jig vessels land a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Therefore, this exemption would likely result in a negligible to low-positive impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100-percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS. However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the

ability of the management program to achieve mortality targets, as accurate landings and discard information are needed in order to conduct stock assessments. The at-sea monitoring program collects information primarily to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness.

Under the No Action option, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, under the No Action Alternative, the DSM will also continue. As a result, the ability to constrain sector catches to the desired quotas should continue. However, because these vessels land less than one-half of one percent of the groundfish landed by permitted vessels, it is unlikely that this will make a noticeable difference in the ability to assess stocks as a whole. For cod, pollock, and haddock – the three species most often landed by these permits, the percentages of landings are higher but still a small part of total landings and marginal improvements in catch data are not likely to be detectable. Therefore, the No Action alternative would likely have a negligible impact on allocated target, and non-allocated target species. Neither alternative, including the No Action is expected to influence the magnitude or location of catch, or gear days, and thus the No Action is expected to result in negligible impacts to physical environment/EFH and protected resources. There is increased reporting burden for vessels to fulfill the DSM requirements. The at-sea and dockside monitoring costs are currently being paid upfront by sectors, with a later reimbursement by NMFS. For small jig vessels, their share of the DSM burden is disproportionately higher than larger vessels, and as such, it is difficult for these vessels to cover the upfront cost of this monitoring; however, it is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. The costs associated with this option would likely be short term negative impacts to these jig vessels. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue. In general, higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and developing more accurate data which will inform management and ensure fairness in regulations. However, since jig vessels land a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Therefore, the No Action Alternative would likely have long term negligible to low-negative on sector participants and ports.

24. *DSM Requirements for Hook Vessels When the Sector Has Caught Less Than 10,000 lbs (4,535.9 kg) of Groundfish per Year*

Providing an exemption to DSM requirements for hook vessels that land up to 10,000 lbs may result in misreporting, as sectors may have an incentive to underreport groundfish in order to lessen the impacts of DSM. However, this assumes that the absence of a monitor may lead to inaccurate reporting, and there is no empirical evidence to determine if this will actually occur. Alternately, a sector may also choose to fish up to 10,000 lb, and then lease out the remainder of its ACL, thereby avoiding DSM for the year completely. However, it is not expected that the impact of misreporting would be high, in light of a 10,000 lb threshold – a very minor percentage of the overall groundfish ACL. In addition, hook vessels typically land less groundfish per trip than other gear types. Through February 2011 of FY 2010, hook vessels have landed approximately 2.4 percent of the overall groundfish ACL. In addition, this is not an exemption from any mortality control for allocated or non-allocated stocks. Therefore, due to the small amount of groundfish landed by this group of vessels, and a 10,000 lb threshold, this exemption would likely have negligible impacts on allocated target, and non-allocated target species. This exemption is not expected to influence the magnitude or location of catch, or gear days, and thus is expected to result in

negligible impacts to physical environment/EFH and protected resources as compared to No Action. NMFS intends on covering the cost of DSM for sector vessels in FYFY 2011; however, as stated earlier, vessels must pay upfront for monitoring, and then be reimbursed for the cost by NMFS. There is also increased reporting burden for vessels to fulfill the DSM requirements. For hook vessels, their share of the DSM burden is disproportionately higher than for vessels that fish with other gear types, because they land less groundfish per trip on average, and as such, it is difficult for these vessels to cover the upfront cost of this monitoring. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. This exemption would likely have positive social impacts for the portion of the fleet to which it is directed. If these hook vessel operators are not required to pay for dockside monitoring, they can run more profitable trips and have more occupational opportunities. For the fleet as a whole, however, this option may appear to be inequitable. The removal of dockside monitoring requirements up to a specified limit, only for these types of vessels may seem unfair to other operators in other sectors that land similar or slightly higher amounts of groundfish with different permit types. In general, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. However, since 10,000 lbs is a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Overall, this exemption would likely result in a negligible to low-positive impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100 percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS. However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the ability of the management program to achieve mortality targets. Accurate landings and discard information are needed in order to conduct stock assessments. By requiring an at-sea monitoring program, information is collected in order to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness. Under the No Action Alternative, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, under the No Action Alternative, the DSM will also continue. As a result, the ability to constrain sector catches to the desired quotas should continue. However, because this program was first adopted in FY 2010 (for limited access vessels participating in sectors) there is no data with which to evaluate the effectiveness of this requirement for hook gear vessels. In addition, since 10,000 lbs of groundfish is a very minor percentage of the overall groundfish ACL, it is unlikely that the No Action Alternative would have a noticeable difference in the ability to assess stocks as a whole. Therefore, the No Action Alternative would likely have a negligible impact on allocated target, and non-allocated target species. Neither alternative, including the No Action is expected to influence the magnitude or location of catch, or gear days, and thus is the No Action is expected to result in negligible impacts to physical environment/EFH and protected resources. There is an increased reporting burden for vessels to fulfill the DSM requirements. The at-sea and dockside monitoring costs are currently being paid upfront by sectors, with a later reimbursement by NMFS. For hook vessels, their share of the DSM burden is disproportionately higher than larger vessels, and as such, it is difficult for these vessels to cover the upfront cost of this monitoring;

however, it is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. The costs associated with this option would likely be short term negative impacts on these vessels. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue. Although, in general, a higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and developing more accurate data which will inform management and ensure fairness in regulations, since 10,000 lbs is a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Therefore, the No Action Alternative would likely have negligible to low-negative impacts on sector participants and ports.

25. *DSM Requirements in May and June when Fishing in Certain Mid-Atlantic (MA) Areas*

NMFS data suggest that few groundfish are caught by vessels that fish in statistical areas 615, 616, 621, 622, 623, 625, 626, 627, 631, 632, 633, 635, 637, and 638 during the months of May and June. Data from 2009 and 2010 show that a negligible amount of groundfish was reported. Although the exemption is requested for non-directed groundfish trips, NMFS does not use this distinction as these trips are coded in as sector groundfish trips to the VMS system. In addition, this would not be an exemption from any mortality control for allocated or non-allocated stocks. Due to these factors, there would likely be negligible impacts to allocated target, and non-allocated target species as a result of this exemption. This exemption would not be expected to influence the magnitude or location of catch, or gear days, and thus would be expected to result in negligible impacts to physical environment/EFH and protected resources as compared to No Action. NMFS intends on covering the cost of DSM for sector vessels in FY2011. However, as stated earlier, vessels must pay upfront for monitoring, and then be reimbursed for the cost by NMFS. There is also increased reporting burden for vessels to fulfill the DSM requirements. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. This exemption would likely have positive social impacts for the portion of the fleet to which it is directed. If these vessel operators are not required to pay for dockside monitoring, they can run more profitable trips and have more occupational opportunities. These trips are likely targeting monkfish, skates, and dogfish, and as such, this exemption may allow these vessels to more freely fish for these stocks, without the increased cost burden of DSM. In general, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. However, since data indicates that groundfish catch in the statistical areas indicated above, during May and June, is a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data to inform management and ensure fairness in regulations. Therefore, this exemption would likely result in a negligible to low positive impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100-percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS. However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the ability of the management program to achieve mortality targets. Accurate landings and discard information are needed in order to conduct stock assessments. By requiring an at-sea monitoring

program, information is collected in order to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness.

Under the No Action Alternative, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, under the No Action Alternative, the DSM will also continue. As a result, the ability to constrain sector catches to the desired quotas should continue. However, because this program was first adopted in FY 2010 (for limited access vessels participating in sectors) there is no data with which to evaluate the effectiveness of this requirement for groundfish vessels. Because data suggests that vessels land minimal groundfish in these statistical areas, in May and June, it is unlikely that this will make a noticeable difference in the ability to assess stocks as a whole. Therefore, the No Action Alternative would likely have a negligible impact on allocated target, and non-allocated target species. Neither alternative, including the No Action is expected to influence the magnitude or location of catch or gear days, and thus the No Action is expected to result in negligible impacts to physical environment/EFH and protected resources. There is an increased reporting burden for vessels to fulfill the DSM requirements. The at-sea and dockside monitoring costs are currently being paid upfront by sectors, with a later reimbursement by NMFS. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. The costs associated with this option would likely be short term negative impacts on these vessels. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue. Although, in general, a higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discard and developing more accurate data which will inform management and ensure fairness in regulations, since these vessels land a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Therefore, the No Action Alternative would likely have negligible to low negative impacts on sector participants and ports.

26. *DSM Requirements for Vessels Fishing West of 72°30' W. long.*

NMFS data suggest that few groundfish are caught by vessels that fish west of 72°30' W. long. Data from 2009 and 2010 show that a negligible amount of groundfish were reported. In addition, this would not be an exemption from any mortality control for allocated or non-allocated stocks. There would likely be negligible impacts to allocated target, and non-allocated target species as a result of this exemption. This exemption would not be expected to influence the magnitude or location of catch, or gear days, and thus would be expected to result in negligible impacts to physical environment/EFH and protected resources as compared to No Action. NMFS intends on covering the cost of DSM for sector vessels in FY2011. However, as stated earlier, vessels must pay upfront for monitoring, and then be reimbursed for the cost by NMFS. There is also increased reporting burden for vessels to fulfill the DSM requirements. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. This exemption would likely have positive social impacts for the portion of the fleet to which it is directed. If these vessel operators are not required to pay for dockside monitoring, they can run more profitable trips and have more occupational opportunities. These trips are likely targeting monkfish, skates, and dogfish, and as such, this exemption may allow these vessels to more freely fish for these stocks, without the increase cost burden of DSM. In general, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. However, since these vessels land a minor

percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data to inform management and ensure fairness in regulations. Overall, this exemption would likely result in a negligible to low positive impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100 percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS. However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the ability of the management program to achieve mortality targets. Accurate landings and discard information are needed in order to conduct stock assessments. By requiring an at-sea monitoring program, information is collected in order to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness.

Under the No Action option, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, under the No Action Alternative, the DSM will also continue. As a result, the ability to constrain sector catches to the desired quotas should continue. However, because this program was first adopted in FY 2010 (for limited access vessels participating in sectors) there is no data with which to evaluate the effectiveness of this requirement for groundfish vessels. However, because data suggests that vessels do not land appreciable catches of groundfish west of 72°30' W. long., it is unlikely that this will make a noticeable difference in the ability to assess stocks as a whole. Therefore, the No Action Alternative would likely have a negligible impact on allocated target, and non-allocated target species. Neither alternative, including the No Action is expected to influence the magnitude or location of catch, or gear days, and thus is the No Action is expected to result in negligible impacts to physical environment/EFH and protected resources. There is an increased reporting burden for vessels to fulfill the DSM requirements. The at-sea and dockside monitoring costs are currently being paid upfront by sectors, with a later reimbursement by NMFS. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. The costs associated with this option would likely be short term negative impacts on these vessels. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue. Although, in general, a higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and developing more accurate data which will inform management and ensure fairness in regulations, since these vessels land a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Therefore, the No Action Alternative would likely have long term negligible to low negative impacts on sector participants and ports.

27. *DSM, Roving Monitoring and Hail Requirements for Hook-only or Handgear Vessels*

This alternative would allow hook-only and handgear vessels to be exempt from the requirement for dockside monitoring. Similar to the prior exemptions, there is a possibility that if this exemption is approved the catch information from these vessels may be less accurate than if the requirement remains in place. However, this assumes that the absence of a monitor may lead to inaccurate reporting, and there is no empirical evidence to determine if this will actually occur. This also assumes that the absence of a monitor may lead to inaccurate reporting, and there is no empirical evidence to determine if this will actually occur. As of early February 2011, hook and handgear vessels landed approximately 2.4 percent of the ACL landed by permitted vessels in FYFY 2010; therefore, it is unlikely that this will make a noticeable difference in the ability to assess stocks as a whole. In addition, this is not an exemption from any mortality control for allocated or non-allocated stocks. As a result, it is likely that there would be negligible impacts to allocated target, and non-allocated target species as a result of this alternative, when compared to No Action. This exemption would not be expected to influence the magnitude or location of catch, or gear days, and thus would be expected to result in negligible impacts to physical environment/EFH and protected resources as compared to No Action. NMFS intends on covering the cost of DSM for sector vessels in FY2011. However, as stated earlier, vessels must pay upfront for monitoring, and then be reimbursed for the cost by NMFS. There is also increased reporting burden for vessels to fulfill the DSM requirements. For small hook and handgear vessels, their share of the DSM burden is disproportionately higher than larger vessels, and as such, it is more difficult for these vessels to cover the upfront cost of this monitoring. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. This exemption would likely have positive social impacts for the portion of the fleet to which it is directed. If these small vessel operators are not required to pay upfront for dockside monitoring, they can run more profitable trips and have more occupational opportunities. For the fleet as a whole, however, this option may appear to be inequitable. The removal of dockside monitoring requirements for only these types of vessels may seem unfair to other operators that land similar or slightly higher amounts of groundfish with different permit types. In general, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. However, since these vessels land a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Overall, this exemption would likely result in a negligible to low-positive impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100 percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS. However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the ability of the management program to achieve mortality targets. Accurate landings and discard information are needed in order to conduct stock assessments. By requiring an at-sea monitoring program, information is collected in order to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness.

Under the No Action option, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, under the No Action Alternative, the DSMwill

also continue. As a result, the ability to constrain sector catches to the desired quotas should continue. However, because this program was first adopted in FY 2010 (for limited access vessels participating in sectors) there is no data with which to evaluate the effectiveness of this requirement for groundfish vessels. Because these vessels land a small percentage of the groundfish landed by permitted vessels, it is unlikely that this will make a noticeable difference in the ability to assess stocks as a whole. For cod, pollock, and haddock – the three species most often landed by these permits, the percentages of landings are higher but still a small part of total landings and marginal improvements in catch data are not likely to be detectable. Therefore, the No Action Alternative would likely have a negligible impact on allocated target, and non-allocated target species. Neither alternative, including the No Action is expected to influence the magnitude or location of catches, and thus is the no Action is expected to result in negligible impacts to physical environment/EFH and protected resources. There is increased reporting burden for vessels to fulfill the DSM requirements. The at-sea and dockside monitoring costs are currently being paid upfront by sectors, with a later reimbursement by NMFS. For small Hook and Handgear vessels, their share of the DSM burden is disproportionately higher than larger vessels, and as such, it is difficult for these vessels to cover the upfront cost of this monitoring; however, it is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. The costs associated with this option would likely be short term negative impacts to these Hook and Handgear vessels. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue. Although, in general, a higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and developing more accurate data which will inform management and ensure fairness in regulations, since these vessels land a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Therefore, the No Action Alternative would likely have negligible to low-negative impacts on sector participants and ports.

28. *DSM, Roving Monitoring, and Hail Requirements for Vessels using Demersal Longline Gear, Jig Gear, and Handgear while Targeting Spiny Dogfish in Massachusetts State Waters*

NMFS data suggest that few groundfish are caught by vessels that fish in the state waters portion of statistical area 521. Data from sector vessels since 2009 show that a very small amount of groundfish was reported, on the order of a few thousand pounds. In addition, this would not be an exemption from any mortality control for allocated or non-allocated stocks. There would likely be negligible impacts to allocated target and non-allocated target species as a result of this exemption. This exemption would not be expected to influence the magnitude or location of catch, or gear days, and thus would be expected to result in negligible impacts to physical environment/EFH and protected resources as compared to No Action. NMFS intends on covering the cost of DSM for sector vessels in FY2011. However, as stated earlier, vessels must pay upfront for monitoring, and then be reimbursed for the cost by NMFS. There is also increased reporting burden for vessels to fulfill the DSM requirements. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. This exemption would likely have positive social impacts for the portion of the fleet to which it is directed. If these vessel operators are not required to pay for dockside monitoring, they can run more profitable trips and have more occupational opportunities. These trips are likely targeting dogfish, and as such, this exemption may allow these vessels to more freely fish for this stock, without the increase cost burden of DSM. In general, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. However, since these vessels land a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Overall, this exemption would likely result in a negligible to low-positive impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100 percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS. However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the ability of the management program to achieve mortality targets. Accurate landings and discard information are needed in order to conduct stock assessments. By requiring an at-sea monitoring program, information is collected in order to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness.

Under the No Action option, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, under the No Action Alternative, the DSM would also continue. As a result, the ability to constrain sector catches to the desired quotas should continue. However, because this program was first adopted in FY 2010 (for limited access vessels participating in sectors) there is no data with which to evaluate the effectiveness of this requirement for groundfish vessels. Because data suggests that vessels do not land appreciable catches of groundfish in statistical area 521, it is unlikely that this would make a noticeable difference in the ability to assess stocks as a whole. Therefore, the No Action Alternative would likely have a negligible impact on allocated target, and non-allocated target species. Neither alternative, including the No Action is expected to influence the magnitude or location of catches, and thus is the No Action is expected to result in negligible impacts to physical environment/EFH and protected resources. There is an increased reporting burden for vessels to fulfill the DSM requirements. The at-sea and dockside monitoring costs are currently being paid upfront by sectors, with a later reimbursement by NMFS. It is unclear what the cost would be to NMFS in FY 2011 since it has not yet been determined what the coverage levels will be. The costs associated with this option would likely be short term negative impacts on these vessels. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue. Although, in general, a higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and developing more accurate data which will inform management and ensure fairness in regulations, since these vessels land a minor percentage of the overall groundfish ACL, NMFS does not expect this alternative to cause a noticeable difference in regulatory discard, and in the development of more accurate data. Therefore, the No Action Alternative would likely have negligible to low negative impacts on sector participants and ports.

29. *DSM Requirements when a Trip has been Monitored by Either an At-Sea Monitor or Fishery Observer*

If approved, this exemption would exempt sectors from the requirement of dockside monitoring for commercial groundfish trips that have an At-Sea Monitor. As discussed earlier, FW 45 would allow for dockside monitoring up to 100 percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS.

However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. While dockside monitors are intended to verify the landings of a vessel and certify that landings weights on the dealer report are accurate, At-Sea Monitors are responsible for verifying area fished, catch, and discards by species and gear type. As a result, an exemption from DSM on some trips would remove independent verification of groundfish landings, although dealer reports and vessel reports will still be required. Therefore, it is possible that landings information would be less accurate than under the No Action Alternative. The extent to which this would occur is unknown since there is no experience with which to characterize the effectiveness of dockside monitoring in this fishery. Nevertheless, a potential lack of dockside monitoring creates an opportunity for additional inaccurate landings reports to be submitted. This could lead to less certainty in controlling catches to the specified sector ACL, leading to a failure to achieve mortality targets. If this exemption is approved, such a result is more likely than under the No Action Alternative even though the difference cannot be quantified. Therefore, this alternative would likely have low-negative impacts to allocated target, and non-allocated target species. The proposed exemption from dockside monitoring requirements is expected to have negligible impacts to physical environment/habitat/EFH/protected resources, as compared to No Action, because it is not expected to influence the magnitude or location of catch or gear days.

The cost of dockside monitoring for FY 2010 has been subsidized by NMFS. Measures contained in FW 45 would allow up to 100 percent coverage (depending on NMFS funding levels), with reimbursement by NMFS. Based on preliminary data, the overall average cost associated with dockside monitoring in FY 2010, averaged about $0.02 per landed pound. This estimate is based on an agreed formula between the NMFS and sector managers to calculate reimbursement for dockside monitoring services which includes a per pound rate of $0.015, $33 per trip monitored, and $27 per trip requiring a roving monitor. Note that the estimated cost per pound landed for monitored trips was based on invoices received by sectors from May-August. However, not all sectors had sent in invoices as of the date the average cost reported herein were estimated so the actual costs may differ by sector and may be substantially different once the fishing year has been completed. The estimated cost for dockside monitoring for FY 2010 would be $616,000 or 0.8 percent of estimated FY 2010 revenues. Depending on actions contained in FW 45, dockside monitoring levels could be as high as 100 percent in FY 2011, depending on NMFS funding. Note that the actual overall average dockside monitoring cost per pound landed will be zero for any lease-only sectors and may be higher for sectors with below average landings per trip since the trip cost gets spread out over fewer pounds. Similarly, the average cost per pound may be lower for sectors with higher than average landings per trip. These costs would be eliminated if this exemption were to be approved. If sectors were not required to pay upfront for dockside monitoring, they could run more profitable trips and have more occupational opportunities. Further, reporting burden would decrease. However, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. Therefore, the exemption would result in a likely negligible impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100-percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS. However, as stated above, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the ability of the management program to achieve mortality targets. Accurate landings and discard information are needed in order to conduct stock assessments. By requiring an at-sea monitoring

program, information is collected in order to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness. Under the No Action option, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, under the No Action Alternative, the DSM will also continue. As a result, the ability to constrain sector catches to the desired quotas should continue. This should contribute to achieving mortality targets, and therefore, relative to the approval of the exemption, the No Action Alternative would likely have low-positive impacts on allocated target, and non-allocated target species.

There would be negligible impacts to the physical environment/habitat/EFH as a result of the No Action Alternative, as the exemption is not expected to influence the magnitude or location of catch, or gear days. There would be negligible impacts to protectedprotected resources as a result of the No Action Alternative, as although monitoring requirements stand to positively impact protected species by providing more information about them, this option would not change coverage levels and so would have no impact. Taking No Action would leave the requirements for dockside monitoring unchanged. The at-sea and dockside monitoring costs are currently being paid upfront by sectors, with a later reimbursement by NMFS. The costs associated with this option would likely be short term negative impacts to ports and sector participants, although the relatively high level of monitoring itself is expected to have positive impacts on other VECs. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue. However, the use of the higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and developing more accurate data which will inform management and ensure fairness in regulations. Therefore, the No Action Alternative would likely have long term negligible, unknown impacts on sector participants and ports.

30. *The Requirement to Delay Offloading Due to the Late Arrival of the Assigned Monitor*

This exemption would allow vessels to begin offloading prior to the arrival of a dockside monitor, if the monitor did not arrive at any agreed upon time. If this were to occur frequently, the impacts to allocated target, and non-allocated target species would be similar to those described in the analysis for the exemption requested from all DSM requirements (exemption #21). If this rarely occurred, we would expect generally negligible impacts to these VECs as a result of this exemption. However, NMFS cannot easily quantify the number of times that a DSM would be late to arrive. It is possible, although not quantifiable, that this exemption could encourage misreporting of ports and/or time of arrival to increase the chances of a late monitor, and therefore, a non-monitored trip. In general, any exemption of DSM requirements would result in landings that would not be independently verified, though dealer reports and vessel reports will still be required. Therefore, it is possible that landings information would be less accurate than under the No Action Alternative. The extent to which this would occur is unknown since there is no experience with which to characterize the effectiveness of dockside monitoring in this fishery. Nevertheless, a potential lack of dockside monitoring creates an opportunity for additional inaccurate landings reports to be submitted. This could lead to less certainty in controlling catches to the specified sector ACL, leading to a failure to achieve mortality targets. If this exemption is approved, such a result is more likely than under the No Action Alternative even though the difference cannot be quantified. Therefore, assuming some level of late DSM arrival and misreporting, this alternative may have low-negative impacts to allocated target, and non-allocated target species. The proposed exemption from dockside monitoring requirements would be expected to have negligible impacts to physical environment/habitat/EFH/protected resources, as compared to No Action, because it would not be

expected to influence the magnitude or location of catch, or gear days. The cost burden to a vessel that is subject to a late DSM provider is unknown, but may be substantial, depending on the level of late DSM arrivals. NMFS does not have data to suggest that there would be a significant amount of misreporting as a result of this exemption, and there would be some economic benefit to vessels and dealers. However, a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. Therefore, the exemption would result in a likely negligible impact on sector participants and ports.

Under the No Action Alternative, there would be no provision to allow offloading without a dockside monitor, if the monitor were to be late. Therefore, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100-percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. At-sea monitoring must, at a minimum, meet the CV standard of the SBRM and the level of required coverage will be specified by NMFS. However, at-sea monitoring gathers different data than DSM, and often the At-Sea Monitor does not have the time required to gather data as detailed as that gathered by the DSM. Monitoring requirements do not have direct biological impacts but can indirectly influence the ability of the management program to achieve mortality targets. Accurate landings and discard information are needed in order to conduct stock assessments. By requiring an at-sea monitoring program, information is collected in order to estimate discards with sufficient accuracy to support quota-monitoring needs. Similarly, random dockside monitoring of groundfish trips reduces the likelihood that some catches will be unreported. While this should improve the accuracy of catch statistics, since the requirement was first adopted at the start of FY 2010 there is no data available yet to evaluate the program's effectiveness. Under the No Action Alternative, the Amendment 16 requirement that sectors develop and fund an at-sea monitoring program is not changed. As a result, there is a high expectation that an adequate program will be in place to accurately estimate discards. Similarly, the DSM would also continue. As a result, the ability to constrain sector catches to the desired quotas would likely continue. This should contribute to achieving mortality targets. Assuming some level of late dockside monitor arrivals, relative to the approval of the exemption, the No Action Alternative would likely have low-positive impacts on allocated target, and non-allocated target species.

There would be negligible impacts to the physical environment/habitat/EFH as a result of the No Action Alternative, as the exemption is not expected to influence the magnitude or location of catch, or gear days. There would be negligible impacts to protected resources as a result of the No Action Alternative, as although monitoring requirements stand to positively impact protected species by providing more information about them, this option would not change coverage levels and so would have a negligible impact. Taking No Action would leave the requirements for dockside monitoring unchanged and vessels and dealers would have to bear the economic burden that is caused by a late dockside monitor. The costs associated with the No Action Alternative are not known empirically, but it is reasonable to assume that they would be higher than the action alternative. The No Action Alternative would likely have short term negative impacts to ports and sector participants, although the relatively high level of monitoring itself is expected to have positive impacts on other VECs. As with any measure that increases the operating costs of the fishery without guaranteeing a matching increase in revenue, this option may cause disruptions in daily living or changes in occupational opportunities if fishing practices need to be altered to make up for lost revenue, specifically in the case where a late monitor causes a delay in offloading with economic losses to vessels, and dealers. However, the use of the higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and developing more accurate data which will inform management and ensure fairness in regulations. Therefore, the No Action Alternative would likely have long term negligible, unknown impacts on sector participants and ports.

31. *Prohibition on Offloading of Non-Allocated Species Prior to the Arrival of the Monitor*

If approved, this exemption would exempt sectors from the prohibition on offloading non-allocated species prior to the arrival of a dockside monitor and, thereby, dockside monitoring of non-allocated species on sector trips. As a result, these landings would not be independently verified, though dealer reports and vessel reports will still be required. Therefore, it is possible that landings information would be less accurate than under the No Action Alternative. The extent to which this would occur is unknown since there is no experience with which to characterize the effectiveness of dockside monitoring in this fishery. Nevertheless, a potential lack of dockside monitoring creates an opportunity for additional inaccurate landings reports to be submitted. Sector discard ratios are based on total catch, not only catch of allocated stocks. Therefore, accuracy in landings data of non-allocated stocks is as important to sector management as accuracy in landings data of allocated stocks. This could lead to less certainty in controlling catches to the specified sector ACL, leading to a failure to achieve mortality targets. If this exemption is approved, such a result is more likely than under the No Action Alternative even though the difference cannot be quantified. Therefore, this alternative would likely have low-negative impacts to allocated target, and non-allocated target species. The proposed exemption from dockside monitoring requirements is expected to have negligible impacts to physical environment/habitat/EFH/protected resources, as compared to No Action, because it is not expected to influence the magnitude or location of catch, or gear days. This exemption may allow sector vessels more flexibility on the occasion when dealers request vessels to offload non-allocated stocks, such as lobster, prior to the offload of groundfish. This additional flexibility to sector members and dealers in the processing of catch may result in low-positive impacts. However, there may be concerns from lobster fishermen who believe that unloading of non-allocated stocks (lobster) could result in misreporting, and a lower level of monitoring may lead to the negative social impacts of regulatory discard, and less accurate data to use in management to ensure fairness in regulations. Therefore, the exemption would result in a likely negligible impact on sector participants and ports.

Under the No Action Alternative, the monitoring requirements adopted by Amendment 16 for commercial groundfish fishing vessels would continue, unless changed through FW 45. Amendment 16 includes both at-sea monitoring at a level sufficient to meet requirements and dockside monitoring of 20 percent of trips. FW 45 would allow for dockside monitoring up to 100-percent, pending available funding by NMFS, and would prioritize monitoring for trips that did not have at-sea monitoring coverage. Sector discard ratios are based on total catch, not only catch of allocated stocks. Therefore, accuracy in landings data of non-allocated stocks is as important to sector management as accuracy in landings data of allocated stocks. As a result, the ability to constrain sector catches to the desired quotas should continue. This should contribute to achieving mortality targets, and therefore, relative to the approval of the exemption, the No Action Alternative would likely have low-positive impacts on allocated target, and non-allocated target species.

There would be negligible impacts to the physical environment/habitat/EFH as a result of the No Action Alternative, as the exemption is not expected to influence the magnitude or location of catch, or gear days. There would be negligible impacts to protected resources as a result of the No Action Alternative, as although monitoring requirements stand to positively impact protected species by providing more information about them, this option would not change coverage levels and so would have no impact. Taking No Action would leave the requirements for dockside monitoring unchanged. Sector vessels would have less flexibility on the occasion when dealers request vessels to offload non-allocated stocks, such as lobster, prior to the offload of groundfish. This lessened flexibility to sector members and dealers for the processing of catch may result in negative impacts. However, the use of the higher level of monitoring is expected to lead to the positive social impacts of reducing regulatory discarding and because, as stated earlier, discard ratios are based on total catch, the No Action would provide more accurate data which will inform management and ensure fairness in regulations. Therefore, the No

Action Alternative would likely have long term negligible, unknown impacts on sector participants and ports.

5.1.6 Impacts of State Permit Bank Sector Exemptions (Alternative 4)

The MPSB has requested an exemption from the length and horsepower restrictions of the DAS Leasing Program for FY 2011.

Currently multispecies vessels are allowed to lease DAS from other vessels provided they meet the restrictions on vessel length and horsepower. The intent of the restriction is to maintain the character of the fleet. The MPSB has requested an exemption to allow DAS leasing to vessels in other approved sectors with this exemption irrespective of length and horsepower.

This exemption is related to retention of monkfish and skates harvested while vessels participate in the multispecies fishery. Sector vessels are exempt from the requirement to use a Northeast multispecies DAS to harvest groundfish, but sector vessels are still allocated NE multispecies DAS to use in complying with provisions of the Monkfish and Skate FMPs. While groundfish sector fishermen would be exempt from the use of DAS to catch allocated target species, they would still need to expend groundfish DAS to land and retain an increased quantity of monkfish or skates under some circumstances. The exemption from DAS leasing restrictions would result in low positive impacts to sector participants and ports as it would slightly expand the pool of vessels that the MPBS vessels could lease DAS. With the approval of this exemption, the Maine State Permit Bank would be able to lease DAS to eligible vessels (according to the criteria of the MOA, which requires the lessee vessel to be 45 feet or less) that may be just outside the size restrictions, but still would qualify for a DAS lease under the MOA. This exemption would aid the Maine State Permit Bank in better accomplishing its social objectives, as the recipients of the DAS would be provided more flexibility to target multiple stocks. However, note that the vessel size restrictions in the MOA between the State of Maine and NOAA would supersede this exemption request for transactions involving those permits owned by the permit bank. DAS leases involving the permits owned by two other entities in the sector are also restricted in that the MPBS Operations Plan stipulated that the allocations associated with these permits will be leased to the Port Clyde Community Groundfish Sector. This exemption would not be expected to increase fishing effort as the total number of DAS allocated to the fishery would not increase. Impacts to physical environment/habitat/EFH and protected resources would be negligible as gear days are not expected to change. Similarly, ACE and DAS regulation would ensure negligible impacts to allocated target species, and non-allocated target species and bycatch by capping overall mortality.

Under the No Action Alternative for this exemption, the permits enrolled in the MPBS would be subject to length and horsepower restrictions when leasing DAS to vessels in other sectors. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch and protected resources would be negligible, and impacts to sector participants and ports would be low negative.

5.1.7 Impact Summary

Table 5.1.6-1 provides a summary of conclusions regarding direct and indirect impacts that would occur as a result of the various alternatives under consideration. Approval of sector Operations Plans (Alternative 1) and State permit bank sector Operations Plans (Alternative 2) would generally have negligible impacts to the physical environment/habitat/EFH, allocated target species, non-allocated target species/bycatch, and protected resources. Alternative 1 would have positive impacts on sector participants and ports, whereas impacts to sector participant and ports under Alternative 2 would be negligible.

Table 5.1.6-1
Summary of Direct and Indirect Effects of the Alternatives

	Valued Ecosystem Components (VECs)					
	Physical Environment	Biological Environment			Human Communities	
ALTERNATIVE	Physical Env./Habitat (incl. EFH)	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Alt 1 - Sector Operations Plans	Negl	Negl	Negl	Negl	+	+
Alt 2 - State Permit Bank Sector Operations Plans (MPBS)	Negl	Negl	Negl	Negl	Negl	Negl
Alt 3 – FY 2011 Exemptions (Non-Permit Bank Sector)						
120 day gillnet block	Likely Negl	Negl	Negl	L-	L+	L+
20-day spawning block	Likely Negl	Negl	Negl	L-	L+	L+
Gillnet limit	Likely Negl	Likely Negl	Likely Negl	L-	L-	L+
Community fixed gear	Likely Negl	Likely Negl	Likely Negl	Likely Negl	L-	L+
50-net limit with DAS	Negl	Negl	L-	Negl	L+	L+
Limit on # of hooks	Negl	Negl	Likely Negl	Negl	L-	L+
DAS leasing size and HP restrictions	Negl	Negl	Negl	Negl	L+	L+
GOM Haddock Sink Gillnet Program	Likely Negl	Negl	Likely Negl	L-	L+	L+
Discarding	Negl	Negl	Likely Negl	Negl	L+	L+
Access to Blocks 138 and 139 in May	Negl	L-	Negl	Likely L-	Likely L+, possible L-	Likely L+, possible L-
Access to Blocks 139, 145, and 146 in June	Negl	L-	Negl	Likely L-	Likely L+, possible L-	Likely L+, possible L-
Use of Squid or Mackerel as Bait	Negl	Negl	Likely Negl	Negl	L+	L+
Daily Catch Reporting	Negl	Negl	Negl	Negl	L+	L+
GOM Haddock Sink Gillnet Program in May	Likely Negl	Negl	Likely Negl	L-	L+	L+

Table 5.1.6-1 (continued)
Summary of Direct and Indirect Effects of the Alternatives

	Valued Ecosystem Components (VECs)					
	Physical Environment	Biological Environment			Human Communities	
ALTERNATIVE	Physical Env./Habitat (incl. EFH)	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Pair Trawling	Negl	Likely Negl	Negl	Likely Negl	L+	L+
Minimum hook size	Negl	Negl	Negl	Negl	L+	L+
5-inch mesh when targeting redfish	L-	L-	L-	Likely Negl	Likely L+, possible L-	Likely L+, possible L-
250 x 40 cm Eliminator Trawl™	Negl	Likely Negl	Negl	Likely Negl	L+	L+
Gear Requirements in the US/CA Area	L-	Negl	Negl	Likely Negl to L-	L+	L+
Maintain VMS at dock	Negl	Negl	Negl	Negl	L+	L+
All DSM and Roving Monitoring Requirements	Negl	L-	L-	Negl	Likely Negl	Likely Negl
DSM Requirements for Directed Monkfish, Skate, and Dogfish Trips	Negl	L-	L-	Negl	Likely Negl	Likely Negl
DSM Requirements for Jig Vessels	Negl	Negl	Negl	Negl	Negl to L+	Negl to L+
DSM Requirements for Hook Vessels When Sector Has Caught < 10,000 lb of Groundfish per year	Negl	Negl	Negl	Negl	Negl to L+	Negl to L+
DSM Requirements in May when Fishing in Certain Mid-Atlantic Areas	Negl	Negl	Negl	Negl	Negl to L+	Negl to L+

Table 5.1.6-1 (continued)
Summary of Direct and Indirect Effects of the Alternatives

	Valued Ecosystem Components (VECs)					
	Physical Environment	Biological Environment			Human Communities	
ALTERNATIVE	Physical Env./Habitat (incl. EFH)	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
DSM Requirements for Vessels Fishing West of 72 deg., 30 min., west longitude	Negl	Negl	Negl	Negl	Negl to L+	Negl to L+
DSM, Roving Monitoring and Hail Requirements for Hook-Only or Handgear Vessels	Negl	Negl	Negl	Negl	Negl to L+	Negl to L+
DSM, Roving Monitoring and Hail Requirements for Vessels using Demersal Longline Gear, Jig Gear, and Handgear while targeting Spiny Dogfish in MA State Waters	Negl	Negl	Negl	Negl	Negl to L+	Negl to L+
DSM Requirements When a Trip has been Monitored by either and At-Sea Monitor or Fishery Observer	Negl	L-	L-	Negl	Likely Negl	Likely Negl
Requirement to Delay Offloading Due to a Late Arrival of an Assigned Monitor	Negl	L-	L-	Negl	Likely Negl	Likely Negl
Prohibition on Offloading of Non-Allocated Species Prior to the Arrival of the Monitor	Negl	L-	L-	Negl	Likely Negl	Likely Negl

Table 5.1.6-1 (continued)
Summary of Direct and Indirect Effects of the Alternatives

	Valued Ecosystem Components (VECs)					
	Physical Environment	Biological Environment			Human Communities	
ALTERNATIVE	Physical Env./Habitat (incl. EFH)	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Alt 4 – State Permit Bank (MPBS) Exemption						
DAS leasing size and HP restrictions	Negl	Negl	Negl	Negl	L+	L+
Summary of Impacts for Alternatives 1, 2, 3, and 4	**Negl**	**Negl**	**Negl**	**Likely L-**	**L+**	**L+**

If the No Action Alternative is selected for Alternative 1 and 2, sectors and/or MPBS would not exist in FY 2011. Relative to the approval of the alternatives, the change in impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources would be negligible. Under the No Action for Alternative 1 impacts to, sector participants and ports would be negative, whereas the No Action for Alternative 2 would have negligible impacts on sector participants and ports.

Under Alternative 3, sectors have requested 31 exemptions from the Northeast multispecies regulations for FY 2011 (Table 3.3.2-1). Of the 31 exemptions, six are gillnet-specific exemptions, three are bottom longline-specific exemptions, four are trawl-specific exemptions, two are administrative exemptions, five exemptions are not gear specific-exemptions (such as the discarding and DAS leasing size and HP exemptions) and the remaining 11 exemptions relate to monitoring requirements.

The impacts of these exemptions on the physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources range from low negative to negligible. The impact on sector participants and ports is generally positive except where exemptions may slow stock rebuilding efforts or where the use of gear to hold ground could increase inter-vessel conflicts. If the No Action Alternative is selected for individual sector requested exemptions, all impacts associated with approval of the exemption would be foregone. For individual impacts of the No Action Alternative for each exemption please refer to Section 5.1.5.

Under Alternative 4, there is one exemption for MPBS analyzed in this document. This exemption from length and horsepower restrictions on DAS leasing would not be expected to increase fishing effort as the total number of DAS allocated to the fishery would not increase. Impacts to physical environment/habitat/EFH and protected resources would be negligible as gear days are not expected to change. Similarly, ACE and DAS regulation would ensure negligible impacts to allocated target species, and non-allocated target species and bycatch by capping overall mortality. The exemption under

Alternative 4 would result in a low positive impact on sector participants and ports due to the potential for increased vessel profitability and the positive affect that revenue would have on ports. Under the No Action Alternative for this exemption, sector vessels fishing under MPBS ACE would be subject to length and gear restrictions when leasing DAS within and between sectors. Relative to the approval of the exemption, impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources would be negligible, and impacts to sector participants and ports would be low negative. As described in the last row of Table 5.1.6-1, if all four alternatives were approved, the anticipated impacts to environment/habitat/EFH, allocated target species, non-allocated target species and bycatch would be negligible. The impact on protected resources is likely to be low negative and the impact on sector participants and port would be positive.

5.2 CUMULATIVE EFFECTS ANALYSIS

The need for a cumulative effects analysis (CEA) is referenced in the CEQ regulations implementing NEPA (40 CFR Part 1508.25). CEQ regulations define cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other action." The purpose of a CEA is to consider the effects of the Proposed Action and the combined effects of many other actions on the human environment 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. The CEA baseline in this case consists of the combined effects of all FY 2011 sectors, and the past, present, and reasonably foreseeable future fishing and non-fishing actions which are described below.

This CEA assesses the combined impact of the direct and indirect effects of sector Operations Plans and FY 2011 proposed exemptions analyzed for all 19 sectors with the impact from the past, present, and reasonably foreseeable future fishing actions, as well as factors external to the multispecies fishery that affect the physical, biological, and socioeconomic resource components of the groundfish environment. This analysis is focused on the VECs (see below) and compares the impacts of FY 2011 Operations Plans and associated exemptions for all sectors (Proposed Action) with the impacts of fishing under the Common Pool (No Action Alternative) as currently regulated by the Northeast Multispecies FMP and subsequent actions. The impacts of Common Pool fishing were previously assessed in the EIS and EAs associated with these actions. The final rule for Amendment 16 to the Northeast Multispecies FMP was effective on May 1, 2010. The impacts of Common Pool fishing have been addressed in the Final EIS accompanying Amendment 16.

Valued Ecosystem Components (VECs): The CEA focuses on VECs specifically including:

- Physical environment/habitat (including EFH);
- Regulated stocks (allocated target groundfish stocks);
- Non-allocated target species and bycatch;
- Protected resources/endangered species; and
- Human communities (ports of sector operation and sector members).

Temporal and Geographic Scope of the Analysis: The temporal range that will be considered for habitat, allocated target species, non-allocated target species and bycatch, and human communities, extends from 2004, the year that Amendment 13 was implemented, through April 30, 2012, the end of FY 2011. While the effects of actions prior to Amendment 13 are considered (see Amendment 16 for a full

cumulative effects analysis), the CEA for this action is focused primarily on Amendment 13 and subsequent actions. This is because Amendment 13 implemented the sector process and included major changes to management of the groundfish fishery, including substantial effort reductions. Much emphasis is placed on the implementation of measures from Amendment 16, since this action approved 17 new sectors and 2 revised sectors, revised sector management regulations, and added stricter management measures that apply to the Common Pool.

The temporal range considered for endangered and other protected species begins in the 1990's when NMFS began generating stock assessments for marine mammals and developed recovery plans for sea turtles that inhabit waters of the U.S. EEZ. In terms of future actions, the analysis examines the period of approval for this action through April 30, 2012, which is the end of FY 2011. All sectors have requested approval for one year, and the cumulative effects will need to be reassessed as part of the NEPA action taken for FY 2012. The geographic scope considered for cumulative effects to physical environment/habitat/EFH, allocated target species, and non-allocated target species and bycatch consists of the range of species, primary ports, and geographic areas (habitat) discussed in Section 4.0 (Affected Environment). The range of each endangered and protected species as presented in Section 4.4 will be the geographic scope for that VEC. The geographic scope for the human communities will consist of those primary port communities from which sector vessels originate and/or land their catch.

5.2.1 Summary of Direct and Indirect Impacts of Proposed Action

The direct and indirect effects on the VECs from the FY 2011 Operations Plans, State permit bank sector Operations Plans, sector requested exemptions, and the State permit bank sector exemption (Alternatives 1 through 4- Proposed Action) compared to what the impacts would be if vessels remained or returned to the Common Pool are summarized in Table 5.1.6-1.

The effects of sector Operations Plans (Alternative 1) and State permit bank sector Operations Plans (Alternative 2) would be negligible for physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch, and protected resources. Impacts to sector ports and participants would be positive for Alternative 1 and negligible for Alternative 2.

The impacts of requested exemptions (Alternatives 3 and 4) on physical environment/habitat/EFH were assessed and found to be primarily negligible with the exception of exemptions expected to increase trawl days. These exemptions, which include the use of 5-inch mesh when targeting redfish, and the relaxation of gear requirements in the U.S./Canada Area, would result in low negative impacts to the physical environment.

The impacts of requested exemptions (Alternatives 3 and 4) on allocated target resources were also found to be generally negligible with these exceptions. Negative impacts would be associated with both exemptions to access GOM Blocks because, although ACEs provide the overall control on allocated target stock mortality, there is the potential for low negative impacts from fishing on spawning aggregations and the disruption of spawning behavior. Additionally the use of 5-inch mesh to target redfish could result in a low negative impact to allocated target species if the smaller mesh size results in greater catch of sub-legal groundfish. The minimium hook size exemption may have a low negative impact on allocated target species as it could result in a greater retention of sub-legal groundfish. A potential lack of dockside monitoring creates an opportunity for additional inaccurate landings reports to be submitted. This could lead to less certainty in limiting catches to the specified sector ACE and potentially result in exceeding mortality limits. Therefore, exemptions from all DSM and roving monitoring requirements, DSM requirements for directed monkfish, skate, and dogfish trips, DSM requirements when a trip has been monitored by either an At-Sea Monitor or a Fishery Observer, the requirement to delay offloading due to the late arrival of an assigned monitor, and the prohibition on

offloading due to a late arrival of an assigned monitor would likely have low negative impacts to target species.

With respect to non-allocated target species and bycatch, negative impacts may be associated with the exemption to the gillnet limit exemption because vessels fishing under current regulations are limited in the number of gillnets they may deploy: 100 gillnets (of which no more than 50 can be roundfish gillnets) in the GOM RMA; 50 gillnets in the GB RMA; and 75 gillnets in the SNE/MA RMAs. Under a requested exemption that limit would be increased to 150 gillnets per permit in all RMAs. The minimium hook size exemption may have a low negative impact on non-allocated target species as it could result in a greater retention of flatfish and sub-legal fish. Impacts to allocated target species would likely be negligible from the pair trawling exemption, because harvest is controlled by ACE and, assuming a relatively constant ratio between the catch of allocated target species and the catch of non-allocated target species and bycatch, ACE would also result in negligible impacts to non-allocated target species and bycatch. Use of 5-inch mesh to target redfish could result in a low negative impact to non-allocated target species and bycatch if the smaller mesh size results in greater retention of sub-legal groundfish and other smaller non-allocated target species. A potential lack of dockside monitoring creates an opportunity for additional inaccurate landings reports to be submitted. The reporting of non-allocated stocks is used in the formulation of sector discard estimates for the management of sector ACE; therefore, there is an incentive to misreport them. This could lead to less certainty in controlling catches to the specified sector ACE and potentially result in a failure to achieve mortality targets. Therefore, exemptions from all DSM and roving monitoring requirements, DSM requirements for directed monkfish, skate, and dogfish trips, DSM requirements when a trip has been monitored by either an At-Sea Monitor or a Fishery Observer, the requirement to delay offloading due to the late arrival of an assigned monitor, and the prohibition on offloading due to a late arrival of an assigned monitor would likely have low-negative impacts to non-target species. The remaining sector requested exemptions would generally have negligible impacts on non-allocated target species and bycatch.

For protected species, an exemption from the 120-day gillnet block could allow vessels a greater number of days on the water potentially during the summer months when more protected species are present. A similar concern exists for an exemption from the 20-day spawning block. Although the change in gear days would be negligible, vessels would be permitted to fish in areas of increased abundance of fish where protected species may be present in larger numbers. The exemption to allow up to 150 gillnets in the water per permit, access to the GOM Blocks, the GOM sink gillnet program would also increase the likelihood of gear interactions with protected species due to the potential for increased gear days. The gear requirements in the U.S./Canada Area could result in a low negative impact to protected resources because trawl gear can be detrimental to protected resources. Impacts to protected resources from the pair trawl and Eliminator Trawl™ exemptions are likely to be low negative due to the increase in trawl days as an increase in trawl days would be expected to increase the likelihood of incidental mortality/injury to protected resources.

Other notable impacts would occur in ports and to sector participants. Exemptions from the120-day gillnet block, 20-day spawning block, 50 net limit, and DAS leasing size and horsepower restrictions, GOM sink gillnet, discarding, use of squid/mackerel as bait, daily catch reporting, pair trawling, minimum hook size, 5-inch mesh when targeting redfish, Eliminator Trawl™, gear requirements in US/CA area, and maintain VMS at dock would have low positive impacts to both of these VECs due to increased flexibility, increased profits and/or decreased costs. Somewhat differently, exemptions to the gillnet limit, community fixed gear, and hook limits would have two effects: increased flexibility would increase revenues to sector participants (a positive impact), gear could be used to hold ground resulting in conflicts between fishermen (a negative impact). These two divergent effects are represented as a positive impact to sector participants but negative impacts to the ports where some of the conflicts may play out. Both exemptions for GOM Block access and the exemption to use 5-inch mesh to target redfish

could have likely low positive impact on sector participants and ports in the short run but may have negative long run impacts if exemption related impacts to spawning aggregations of fish slow stock rebuilding efforts. Proposed exemptions from various monitoring requirements would have negligible to low positive impacts on ports and sector participants as industry would not have to bear the upfront costs associated with DSM or the costs associated with a late dockside monitor.

Overall, the proposed action for Alternatives 1, 2, 3, and 4 would result in negligible impacts on physical environment/habitat/EFH, allocated target species, and non-allocated target species, likely low negative impacts to protected resources, and low positive impacts to sector ports and participants.

5.2.2 Past, Present, and Reasonably Foreseeable Future Actions

Detailed information on the past, present, and reasonably foreseeable future actions that may impact this action can be found below.

5.2.2.1 Aggregate Sector Impacts

FY 2010, which started on May 1, 2010, was the first year that a majority of the sectors were in operation. While these sectors have operated for approximately 10 months, data characterizing sector fishing (for example bycatch rates, consolidation) is generally not yet available. As such, the impacts of FY 2010 sector operation have generally not yet been measured.

The FY 2011 sector-specific harvest rules, State Permit Bank Sectors, sector-specific exemptions, and the State Permit Bank Sector-specific exemption have been discussed in Section 5.1 and are incorporated into the sector-specific impacts represented in Table 5.1.6-1. In aggregate, if all alternatives were adopted, they would have negligible impacts on physical environment/habitat/EFH, allocated target species, and non-allocated target species and bycatch. While the aggregate impact of adopting all alternatives would be low negative for protected resources, aggregate impacts to sector participants and ports would be low positive.

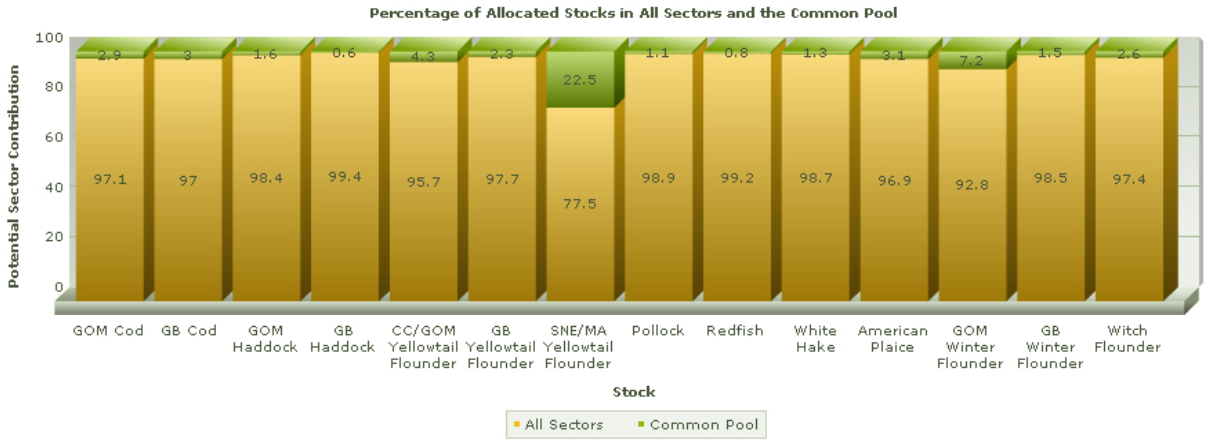
Impacts related to general sector operations are considered below and summarized in Table 5.2.2-1.

Proportion of ACL

The total amount of groundfish that is permitted to be caught by the commercial multispecies fleet is called the annual catch limit (ACL). FY 2011 is the second year in which ACLs have been set for most stocks, in order to be in compliance with revisions to the Magnuson-Stevens Act. Management measures in Amendment 16 to the Northeast Multispecies FMP have been set to reduce exploitation rates of managed stocks by roughly 40 to 60 percent (Table 4 of Amendment 16) from FY 2008 in order to achieve the ACLs for the multispecies stocks. AMs have been put into place to ensure that fishing by the Common Pool and sectors do not exceed the ACL. Further, management rules since Amendment 16 include an emergency rule that was finalized on July 20, 2010 to revise the Pollock ACL. FW 45, as proposed, also contains several measures which will further expand or alter sector management. Based on the sector rosters which were submitted September 10, 2010, roughly half the permits in the Northeast multispecies fishery would be enrolled in sectors, while the other half would remain in the Common Pool. The permits enrolled in sectors as of September 10, 2010 account for more than 98 percent of the historical fishing effort. The proportion of ACL that is linked to the permits enrolled in sectors (i.e., potential sector contribution) would be more than 90 percent for all Northeast groundfish stocks, with the exception of SNE/MA yellowtail flounder (more than 70 percent in sectors). The ACE for each sector is determined by multiplying the summed PSC of all members by the overall ACL for each stock. The

proportion of ACLs in sectors and the Common Pool is illustrated in Figure 5.2.2-1. The potential impacts of the proportion of ACL in sectors is negligible or likely to be negligible to physical environment/habitat/EFH, allocated target stocks, non-allocated target species and bycatch, and protected resources, since there would likely be little potential for change in the potential amount of catch, which would be controlled by ACEs for each sector. However, the catch may increase for abundant stocks such as haddock because of the increased flexibility to selectively target these stocks with gear specifically designed for this purpose. Sector participants would likely benefit from the ability to fish their ACE, which represents the majority of the ACL for the fleet, without effort control restrictions. This added flexibility, which would result in increased revenues, would result in low positive impacts to the sectors' ports.

Figure 5.2.2-1 Percentage of Allocated Target Stocks in All Sectors and the Common Pool



Inter-Sector Transfer of ACE

Inter-sector transfer of ACE as authorized by the regulations that implemented Amendment 16 to the Northeast Multispecies FMP (50 CFR 648.82), allows sectors to adjust allocations "to account for unusual circumstances or to take advantage of other opportunities." These ACE transfers may occur during the fishing year and up to two weeks after the end of the fishing year in order to "provide[s] a limited opportunity for a sector to quota balance in the instances that ACE was inadvertently exceeded. This provision is not intended to allow sectors to exceed their ACE." These provisions do not provide for the permanent transfer of sector shares, but allow sectors to avoid inadvertent overages and avoid potential enforcement action or penalties if ACE is exceeded. Further, inter-sector transfer of ACE allows for sectors to take advantage of other opportunities and to transfer ACE for certain stocks to maximize profits and to facilitate targeted fishing. The ability to transfer ACE within an allotment period results in a net increase of zero, having no impact on achieving target mortality rates. In addition, this provision provides a disincentive to discard catches that may exceed the ACE, and the ability to carry-over ACE into the following fishing year discourages fishing right up to the maximum amount allowed (Sanchirico et al. 2006). This provision would have a low positive impact on human communities because it would allow some flexibility in covering inadvertent overages of a sector's ACE and provides an option to avoid enforcement actions and/or penalties, and greater utilization of allocations, resulting in more landings. Further, the ability to trade ACE would allow sectors to acquire additional fishing opportunities that would result in a positive impact on human communities. This would potentially result in a greater proportion of allocated ACE being caught because sectors unable to fully utilize their ACE

could trade ACE to sectors with the harvesting capacity that would otherwise go unused. The impacts to the physical and biological environments are likely negligible, since this provision would allow for minor deviations from a sector's given ACE.

Consolidation of Permits

Most sectors have indicated that some of their sector members would not actively fish. Of the 821 individual permits currently enrolled in sectors, 395 of those permits are linked to "active" vessels that would fish. While it initially appears that fewer vessels would be fishing as a result of sectors, many of these permits/vessels were previously inactive because of the DAS Leasing Program and mortality controls established to rebuild groundfish stocks. In FY 2004, Amendment 13 brought the opportunity for fleet consolidation through the implementation of the DAS Leasing Program and, to a lesser extent, from the DAS Transfer Program. Accordingly, additional fleet-wide consolidation would take place only to the extent that additional consolidation occurs beyond that which resulted from the leasing and transfer programs in past years or would happen under those programs in FY 2011.

The severity of social implications that result from sector operations are difficult to predict. Because sector rosters may change and members currently enrolled in sectors are still able to withdraw to the Common Pool through April 30, 2011, the exact consolidation cannot be predicted. Depending on the fleet composition of the sectors and the distribution of ACE amongst sectors, it is possible that specific gear types or geographic regions could be disproportionately impacted. However, most sectors predict that there would be little to no additional consolidation of permits when compared to the previous fishing year as a result of sector operations. Five sectors reported that they anticipated a smaller percentage of permits attached to fishing vessels in FY 2011 as compared to FY 2010. In addition, State Permit Banks are specifically designed to mitigate factors that could tend to result in consolidation. Based on the sector's minor consolidation predictions in conjunction with State Permit Banks, it is anticipated that there would be negligible impacts to all VECs associated with permit consolidation.

Redistribution of Effort

On a related note, expansion of sectors may result in some fishing effort being redistributed from the Northeast multispecies fishery into other fisheries due to improved fishing efficiency, selectivity, or consolidation among vessels that historically fished for Northeast multispecies. Under this scenario, it is possible that fishing effort could be redistributed amongst different gear types and/or different fishing areas, or that the fleet composition could change. It is likely that effort would shift towards fisheries that are managed under effort controls, or are less regulated and/or less competitive, or into fisheries that are not overfished or undergoing overfishing. Two examples to illustrate these scenarios are provided:

- If gillnetters are able to successfully target haddock, an increase in gillnet effort may result because of the abundance of haddock and the replacement of broad effort controls with stock-specific mortality controls.
- Vessels within sectors that also have lobster permits could decide to lease their multispecies quota to larger vessels and instead target American lobster stocks with gear not capable of catching Northeast multispecies.

It is difficult to predict how the social, economic, and biological impacts of effort shifts caused by sectors would compare to, or interact with, the social, economic, and biological impacts of effort shifts from the increased effort controls on the Common Pool under Amendment 16 and subsequent frameworks. The opportunity for this type of effort redistribution has existed since implementation of the DAS Leasing and DAS Transfer Programs, which were implemented in Amendment 13 (69 FR 22906,

4/27/2004). Accordingly, additional redistribution of effort is likely only to the extent that additional consolidation occurs beyond that which resulted from the DAS Leasing and Transfer Programs. In other words, it is likely that higher rates of consolidation would lead to a greater redistribution of effort. How much effort is redistributed by individuals enrolled in a sector compared to what is anticipated within the Common Pool is difficult to predict. Most sectors predict that there would be no additional consolidation of permits as a result of sector operations, and consequently there would be no redistribution of effort. Based on this prediction, it is anticipated that there would be negligible impacts to all VECs associated with redistribution of effort.

Monitoring

Because the primary control to regulate fishing by sectors would be the ACE for each stock, sectors must monitor landings to ensure that the sector allocation is not exceeded. Sectors must comply with the at-sea and dockside catch monitoring, which provide information on both landings and discards. Since the majority of the allowed catch for the fishery would belong to sectors, a greater proportion of the groundfish stocks would be monitored. More monitoring data would be generated, covering a larger percentage of the groundfish stocks, which would be a positive contribution for stock assessments and future regulation that rely on these assessments. Allocated target stocks, non-allocated target species and bycatch, and protected resources would experience a low positive cumulative impact since additional monitoring would provide information for more effective management of the fishery and a better understanding of interactions between fisheries and protected species. There would be a negligible effect on habitat, and a low negative impact on human communities due to the increased monitoring and enforcement costs.

Summary of Impacts from Sector Operations

Overall, the cumulative impacts associated with all sector operations are as follows: negligible impacts to physical environment/habitat/EFH, allocated target species, non-allocated target species and bycatch; low negative for protected resources; and low positive impacts to the human communities.

TABLE 5.2.2-1
Summary of Aggregated Sector Impacts

	Physical Environment	Biological Environment			Human Communities	
Sector	**Physical Habitat (incl. EFH)**	**Allocated Target Species**	**Non-allocated Target Species and Bycatch**	**Protected Resources**	**Ports**	**Sector Participants**
AGGREGATE SECTOR IMPACTS						
Proportion of ACL	Likely Negl	Negl	Negl	Negl	L+	L+
Inter-Sector transfer of ACE	Negl	Negl	Negl	Negl	L+	L+
Consolidation of Permits	Negl	Negl	Negl	Negl	Negl	Negl
Redistribution of Effort	Negl	Negl	Negl	Negl	Negl	Negl
Monitoring	Negl	L+	L+	L+	L-	L-

Summary of Impacts	Negl	Negl	Negl	L-	L+	L+

5.2.3 Other Fishing Effects: Past, Present, and Reasonably Foreseeable Future Groundfish and Related Management Actions

Table 5.2.3-1 is a summary of the past, present, and reasonably foreseeable future fishing actions and effects. The impact assessment terms (i.e., positive, negative, negligible) are for the impacts associated with the action on the VECs discussed in Section 4. Specifically, the VECs include: the physical environment/habitat/EFH; allocated target species; non-allocated target species and bycatch; protected resources such as marine mammals and sea turtles; and the human communities of ports as well as the sector participants.

Table 5.2.3-1
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**Habitat/EFH**	**Allocated Target Species**	**Non-allocated Target Species and Bycatch**	**Protected Resources**	**Ports**	**Sector Participants**
Past and Present Fishing Actions						
Amendment 13 (2004) – Implemented requirements for stock rebuilding plans and dramatically cut fishing effort on groundfish stocks. Implemented the process for creating sectors and established the GB Cod Hook Gear Sector	L+ Reductions in fishing effort expected to reduce contact time and aerial extent of fishing gear on EFH.	H+ Fishery Management Plan action further addresses overfished and overfishing status of allocated target species by reducing mortality through additional effort reductions.	+ Reduction in fishing effort results in reduction of bycatch for many species. Reduced fishing effort also reduces mortality on other non-allocated target species.	L+ Further reductions in fishing effort via DAS cuts when combined with previously established Closed Areas reduce the potential for gear interactions.	H- short-term, L+ long-term. Regulations negatively impacted fishing communities in the short-term Reductions expected to lead to more robust stocks in the long-term.	H+ Created sectors and increased efficiency of sector members, decreased overhead costs. Community initiative resulted in conservation effort.
FW 40A (2004) – allowed additional fishing on GB haddock for sector and non-sector hook gear vessels, created the GB haddock Special Access Pilot Program, and created flexibility by allowing vessels to fish inside and outside the U.S./Canada Area on the same trip	Negl Due to limited impact of hook gear.	L- Increased mortality, for GB haddock Designed not to compromise Amendment 13 mortality objectives.	L- Increased effort results in slight incidental mortality Incidental catch minimized by time/area/bait type limitations.	Negl Gear interactions not expected to increase in any significant way.	+ Provided increased revenue to homeports of hook vessels Enhanced importance of industry involvement.	+ Increased revenue to Hook Sector members NEGL For non-hook vessels or non-sector members Participation in collaborative research that brought about sustainable fishing opportunities.

Table 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**Habitat/EFH**	**Allocated Target Species**	**Non-allocated Target Species and Bycatch**	**Protected Resources**	**Ports**	**Sector Participants**
Past and Present Fishing Actions						
FW40B (2005) – Allowed Hook Sector members to use GB cod landings caught while using a different gear during the landings history qualification period to count toward the share of GB cod that will be allocated to the sector, revised DAS leasing and transfer programs, modified provisions for the Closed Area II yellowtail flounder SAP, established a DAS credit for vessels standing by an entangled whale, implemented new notification requirements for Category I herring vessels, and removed the net limit for trip gillnet vessels.	Negl to L+ Potential for decreased impacts because a larger portion of the GB cod stock will be taken with hook gear which has been shown to have negligible impacts to habitat.	L- Short-term increase in effort; minor increase in mortality on GB haddock; not expected to threaten Amendment 13 mortality objectives.	L- Increased effort results in slight incidental mortality. Incidental catch minimized by time/area/bait type limitations.	Negl	L+ Minor benefits gained through relaxed leasing and transfer rules and improvements to the management of the yellowtail flounder SAP that were intended to reduce derby fishing conditions.	L+ Minor benefits gained through increased revenues resulting from a greater allocation of the GB cod TAC based on historical catch landings with gear other than hook gear. Increased revenue due to the removal of gillnet limits on trip vessels.

Table 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**Habitat/EFH**	**Allocated Target Species**	**Non-allocated Target Species and Bycatch**	**Protected Resources**	**Ports**	**Sector Participants**
Past and Present Fishing Actions						
FW41 (2005) – Allowed for participation in the Hook Gear Haddock SAP by non-sector vessels	Negl	Negl Extended access to Haddock SAP for non-sector vessels which encourages effort on Georges Bank haddock, a healthy stock, and thus away from stocks of greater concern.	Negl to L - Allows for a small overall effort increase which could allow for higher bycatch/discard rates.	Negl	L+ Provided non-Hook sector community members the opportunity to participate in the Haddock SAP, but capped SAP effort.	L - Economic benefits to sectors would be less than non-sector participants because the incidental cod catch limit for sectors is smaller than it is for non-sector vessels.
FW42 (2006) – Implemented further reductions in fishing effort based upon stock assessment data and stock rebuilding needs, implemented GB Cod Fixed Gear Sector	L+ Effort reductions may have positive impacts due to less bottom time.	+ Implemented further reductions in fishing mortality for groundfish species, put further catch limits on GB cod.	+ Reduced mortality on target species through effort reductions results in a reduced rate of bycatch/ discards.	L+ Further effort reductions likely resulted in lower risks of gear interaction.	- short-term, L+ long-term Disproportionate effects on these groundfish-dependent ports. Long-term benefits from reduced mortality.	+ Allowed additional gear type to gain the efficiencies and other benefits of sector membership.

Table 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**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.	L+ With recent increases in dogfish quotas and trip limits, the dogfish fishery may reduce fishing effort on groundfish stocks.	+ 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 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**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 Amendment 5 could include a range of alternatives that would implement ACLs and AMs; set the specifications of DAS and trip limits; and make other adjustments to measures in the Monkfish FMP. Further, Amendment 5 would improve the Research Set Aside Program, institute measures to minimize bycatch resulting from trip limit overages, and would allow for the landing of monkfish heads.	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 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	+	+	+	+	-	-

Table 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**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 Would set ACLs, establish TACs for transboundary U.S./CA stocks, and possibly make adjustments to trip limits/DAS measures	+	+	+	+	- short-term, L+ long-term	- short-term, L+ long-term

Table 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**Habitat/EFH**	**Allocated Target Species**	**Non-allocated Target Species and Bycatch**	**Protected Resources**	**Ports**	**Sector Participants**
Past and Present Fishing Actions						
FW 45 to the Northeast Multispecies FMP Would result in possible adjustments to the yellowtail flounder sub-ACL; modifications to the GB yellowtail flounder rebuilding strategy; and adjustments to the ABCs for pollock and GOM winter flounder. May adjust TACs for stocks harvested in the US/ CA area for FY 2011; change the at sea and dockside monitoring provisions; and eliminate the Great South Channel yellowtail flounder spawning closures for the general category scallop vessels. May establish protection for spawning cod in an area off the New Hampshire coast; and may authorize additional sectors.	Likely Negl	Likely Negl	Likely Negl	Likely Negl	Likely Negl	Likely Negl

Table 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**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 -
Reasonably Foreseeable Future Fishing Actions						
Scallop Amendment 15 Would implement ACLs and AMs to prevent overfishing of scallops and yellowtail flounder; address excess capacity in the LA scallop fishery; and adjust 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+

Table 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**Habitat/EFH**	**Allocated Target Species**	**Non-allocated Target Species and Bycatch**	**Protected Resources**	**Ports**	**Sector Participants**
Reasonably Foreseeable Future Fishing Actions						
Omnibus Essential Fish Habitat Amendement 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 5.2.3-1 (continued)
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Future FMP and Other Fishery Related Actions with the Exception of Sector Operations

	Physical Impacts	Biological Impacts			Human Community Impacts	
Fishing Actions	**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 -
Amendment 17 to the Northeast Multispecies FMP This amendment is intended to streamline the administration process whereby NOAA-sponsored, state-operated permit banks are able to operate in the sector allocation management program	Negl	Negl	Negl	Negl	Negl	Negl
Summary of Impacts	**+**	**+**	**+**	**+**	**-**	**-**

Noted: ND= Not determined

5.2.3.1 Physical Environment/Habitat/EFH

Past and Present Actions: Amendments 13 and 16 and FWs 42 and 44 to the Northeast Multispecies FMP are actions that have reduced fishing effort. Reduction in fishing effort results in less gear interaction with bottom habitat, effectively resulting in positive effects to the physical environment.

FWs 40A and 40B were implemented in 2004 and 2005 and allowed previously non-hook vessels to join the GB Cod Hook Sector, which resulted in more cod caught with hook gear. In 2005, FW 41 allowed non-sector vessels to participate in the Hook Gear Haddock SAP established under FWs 40A and 40B. These actions had a negligible to low positive effect on habitat because hook gear has minimal impacts to bottom habitat. Further, FW 40B removed net limits for trip gillnet vessels, which may have resulted in gear switching to gillnets. While only slight effort changes were observed as a result of FW 40B, switching from gears with more bottom interaction to gillnets would have resulted in a negligible to low positive impact from the removal of the net limit for trip gillnet vessels. FW 45 is intended to build upon Amendment 16 and FW 44. The New England Fisheries Management Council is considering implementing a range of actions under FW 45, which may include, amongst other things, measures that would alter the ACLs for at least one groundfish species (possibly more), reduce restrictions on certain handgear vessels, and implement a closed area off of the New Hampshire coast to protect spawning cod aggregations. Depending on which alternative is adopted, measures could result in a minor increase in fishing effort due to increases in ACLs and reduction of handgear restrictions, which would result in only a negligible impact to the physical environment/habitat/EFH. If additional cod spawning areas off of the coast of New Hampshire are closed seasonally, this would also have a negligible effect on physical resources because these areas would still be fished during other times of the year.

The ALWTRP requires the use of sinking groundlines, which may have a negligible to low negative impact on habitat due to associated bottom sweep by the groundline. In addition, required use of weak links in gillnets may result in floating "ghost gear," which could snag on and damage bottom habitat.

The spiny dogfish FMP was developed in response to classification of the spiny dogfish stock as overfished in 1998. The overall goal of the FMP is to conserve spiny dogfish in order to achieve optimum yield from the resource in the western Atlantic Ocean. Measures to rebuild the stock and to achieve optimum yield have included quotas and trip limits. Quotas and trip limits control the amount of fish that can be harvested. Prior to FY 2009, spiny dogfish trip limits were low, allowing retention of spiny dogfish caught incidentally to other target fisheries while rebuilding the spiny dogfish stock. The quota was tripled in FY 2009 to 12 million pounds, and the daily trip limit was increased from 600 to 3,000 pounds. The MAFMC has recently approved a 20 million pound TAL level and a 3,000 pound trip limit for the fishing year specifications for the FY 2011. Most of the landed catch has historically been with bottom gillnets, not bottom trawls. Since gillnets have a low impact on vulnerable benthic habitats and no appreciable amount of additional trawling was expected, this FMP has likely had a negligible effect on physical environment/habitat/EFH.

The Monkfish FMP and its modifications have resulted in a reduction in fishing effort, which has resulted in less habitat-gear interaction. Currently, a range of alternatives are being considered under Amendment 5 to the Monkfish FMP which could result in increased DAS and trip limits resulting from higher catch targets. Any impacts on habitat from Amendment 5 would depend upon the selected preferred alternative, which may or may not increase or alter the location of fishing or the number of gear days and the associated change in the interaction of gear with bottom habitat. Overall, due to the historic reduction in fishing effort, the Monkfish FMP has had a positive impact on physical resources.

Amendment 3 to the skate FMP is intended to reduce discards and landings sufficiently to rebuild stocks of winter, thorny, and smooth skates, and to prevent other skates from becoming overfished. The anticipated reduction in fishing effort would result in fewer habitat and gear interactions, a likely positive impact to the physical environment.

Under the HPTRP final rule published February 19, 2010 (50 CFR 229.33) expanded temporal and seasonal requirements within the HPTRP management areas for gillnet gear, including sink gillnets, that is capable of catching groundfish species. The rule is not likely to modify the way that gillnet gear is used in a manner that would affect EFH and habitat, but it would reduce fishing effort, at least seasonally in closure areas. While gillnets have a small impact on benthic habitats, the HPTRP final rule would reduce gear days in closed areas, therefore, likely having a low positive effect on the physical environment/habitat/EFH.

Future Actions: Reasonably foreseeable future actions that will likely affect habitat include the EFH Omnibus Amendment. The EFH Omnibus Amendment will provide for a review and update of EFH designations, identify HAPCs, as well as provide an update on the status of current knowledge of gear impacts. It will also include new proposals for management measures for minimizing the adverse impact of fishing on EFH that will affect all species managed by the NEFMC, in a coordinated and integrated manner. The net effect of new EFH and HAPC designations and more targeted habitat management measures should be positive for EFH.

The Strategy for Sea Turtle Conservation and Recovery in Relation to Atlantic Ocean and Gulf of Mexico ("Strategy") is a gear-based approach to addressing sea turtle bycatch. NMFS is currently considering increasing the size of the escape opening for Turtle Excluder Devices (TEDs) in the summer flounder fishery, expanding the use of TEDs to other trawl fisheries, and modifying the geographic scope of the TED requirements. Since TED requirements may decrease the catch retention of some target species, vessels may tow longer to offset this loss of catch, likely resulting in negative impacts to physical environment/habitat/EFH.

Any future rule-making to revise the HPTRP could result in additional restrictions on gillnet fisheries. While, gillnets have a small impact on benthic habitat, any future modifications to the HPTRP that further restricts the use of gillnets would likely have a low positive effect on physical conditions due to the decreased fishing effort.

Although scallop dredges have been shown to be associated with adverse impacts to some types of bottom habitat (NEFMC 2003b), no measure contained in Amendment 15 to the Scallop FMP is likely to increase adverse impacts to areas designated as EFH. Therefore impacts to physical environment/habitat/EFH are expected to be negligible.

Amendment 17 to the Northeast Multispecies FMP is administrative and is not projected to alter fishing behavior. Therefore, impacts to physical environment/habitat/EFH are expected to be negligible.

Summary of Impacts: As indicated in Table 5.2.3-1, management measures in Amendment 13, FW 42, Amendment 16, Amendment 3 to the Skate FMP, and FW 44 have (or would be expected to have) positive effects on habitat due to reduced fishing efforts, consequently reducing gear interaction with habitat. The HPTRP would result in seasonal closures that would reduce fishing effort and the associated bottom interactions, which would result in a low positive effect. Further, the omnibus EFH amendment would result in targeted habitat protection, which would be a positive effect on benthic habitat and physical resources. FWs 40A, 40B, and 41 resulted in negligible to low positive effects on habitat due to decreasing impacts to the bottom as more cod is caught with low impact fixed gear. The ALWTRP resulted in low negative to negligible effects on habitat due to the possibility of groundline

sweep on the bottom and "ghost gear." The dogfish and scallop FMPs and FW 45 would increase fishing effort for certain species and would generally result in negligible to low negative effects on habitat. The Monkfish FMP generally has resulted in fewer habitat and gear interactions, resulting positive effects on habitat. The proposed TED requirements would likely have negative effects on habitat due to potentially increased towing time. Amendment 17 is administrative in nature and would have negligible impacts on habitat. Overall, the cumulative effect of past, present, and reasonably foreseeable future fishing actions have resulted in positive effects on habitat.

5.2.3.2 Allocated Target Species

Past and Present Actions: Although management measures for groundfish were first enacted for the EEZ in 1977 under the original Groundfish FMP, the dramatic increase in larger vessels, bigger gear, and electronic aids, such as fish finders and navigation equipment, contributed to a greater efficiency and intensity of fishing, which in turn resulted in a precipitous drop in landings during the 1980's to an all-time low in the early 1990's. The following discussion is limited to past actions beginning with the implementation of Amendment 13. However, it should be noted that in general, management actions taken prior to Amendment 13 attempted to control effort on managed groundfish stocks, decreased impacts to habitat, reduced gear interactions with protected species, and had a negative impact on human communities. However, because actions prior to Amendment 13 did not rebuild overfished stocks to sustainable levels, greater effort reductions were necessary.

Amendment 13, FWs 42 and 44, and Amendment 16 have implemented restrictions on fishing effort in order to rebuild groundfish stocks. These restrictions were designed to have positive effects on groundfish. In contrast, FW 40A and 40B allowed for minor increases in fishing effort on cod and/or haddock, which is considered a low negative impact on these species. FW 41 expanded participation in the Hook and Gear Haddock SAP to non-sector vessels, but due to the small overall effort increase under this framework, it had a negligible effect on allocated target species.

As discussed in Section 4.2, the results of the GARM III show stocks of ocean pout and Atlantic halibut are being fished at a sustainable level, but the biomass indicates stocks have not yet been rebuilt and are considered to be overfished. The stocks of GB haddock and Pollock are rebuilt, and GOM haddock, Acadian redfish, and American plaice are no longer overfished or experiencing overfishing, which indicates Amendment 13 and FW 42 management actions have had positive effects on certain groundfish stocks. GOM cod and southern windowpane flounder are not overfished, but they are experiencing overfishing. All other groundfish stocks are overfished and are still experiencing overfishing. The management measures in Amendment 16 to the Northeast Multispecies FMP would address the overfishing.

Several measures including, but not limited to, changing the ACLs, TACs, and rebuilding strategies for some groundfish species; reducing restrictions on certain handgear vessels; and implementing a closed area off of the New Hampshire coast to protect spawning cod aggregates are being considered under FW 45. FW 45 may introduce measures that could result in a modest increase in fishing for certain groundfish stocks, while potentially protecting some spawning areas. Sector members would operate under ACEs for allocated target species under FW 45; therefore, any minor increases in allowed catch would still be at sustainable levels and would have a negligible impact on the overall allocated target stocks.

Because skates, monkfish, and spiny dogfish are managed by FMPs other than the Northeast Multispecies FMP, the impacts of these management measures on allocated groundfish species are briefly discussed below.

The spiny dogfish FMP has resulted in an increase in stock biomass such that the most recent data indicates that the female spawning stock biomass is likely to be above the most recently calculated MSY biomass (B_{MSY}). This development has resulted in increases in both quota and trip limits for this species set by the FY 2010 specifications and the MAFMC has recently approved a 20 million pound total allowable landings level and a 3,000 pound trip limit for the fishing year specifications for the FY 2011. With this increase in quotas and trip limits, it is likely that there will be an increase in the amount of spiny dogfish caught and landed by vessels fishing for groundfish. If the spiny dogfish stock remains at or above B_{MSY}, the dogfish fishery may reduce fishing effort on groundfish stocks, resulting in a low positive effect on allocated target groundfish species.

Monkfish is commonly caught along with groundfish and is considered one of the top target species that is not allocated to sectors by an ACE. Monkfish are currently regulated by the Monkfish FMP, which was implemented in 1999. The FMP was designed to stop overfishing and rebuild the stocks through a number of measures, including: limiting the number of vessels with access to the fishery and allocating DAS to those vessels; setting trip limits for vessels fishing for monkfish; minimum fish size limits; gear restrictions; mandatory time out of the fishery during the spawning season; and a framework adjustment process. Amendment 5 to the Monkfish FMP focuses on completion of monkfish ACLs and AMs, and includes both DAS and trip limits associated with the new catch targets based on updated stock information. The Monkfish FMP and subsequent amendments and framework actions have reduced fishing effort over the last decade, which has resulted in positive impacts for groundfish and non-groundfish stocks (including bycatch). Amendment 5 to the Monkfish FMP is intended to either maintain the current level of fishing effort or allow for additional fishing above the current level, since both stocks of monkfish (North and South) are rebuilt. Overall, while various alternatives that may are being considered under Amendment 5, historically, the Monkfish FMP has resulted in reduced fishing effort that has had a positive effect on allocated target species.

As indicated in Table 87 of the Final EIS for Amendment 16 to the Northeast Multispecies FMP, skates comprised nearly half the landings by weight for FY 2006 and 2007, under the Category B DAS (multispecies) program. Skates are currently managed under an FMP, and Amendment 3 to the FMP was effective July 16, 2010, which limited skate possession to 500 lbs on Common Pool B DAS trips. The purpose of Amendment 3 to the Skate FMP regulations are to reduce discards and landings sufficiently to rebuild stocks of winter, thorny, and smooth skates, and to prevent other skates from becoming overfished. The new management measures in Amendment 3 may resu7lt in a reduction in fishing effort to rebuild biomass. Therefore, the likely impacts would be positive for the allocated multispecies stocks, which are simultaneously targeted with skates.

On February 19, 2010, NMFS published a final rule, effective March 22, 2010, amending the regulations implementing the HPTRP to address harbor porpoise mortalities (75 FR 7383). Under this rule, closure areas would be implemented to reduce harbor porpoise interactions with fishing. Further, under the ALWTRP, seasonal closure areas and restrictions for commercial gillnets, including sink gillnets in the northeast, have been implemented. These take reduction plans would result in a restriction of fishing effort in closed areas; which would result in a negligible to positive impacts to groundfish species in the closed areas.

Future Actions: The provisions in the EFH Omnibus Amendment could result in greater habitat protection for areas that are highly vulnerable to the adverse effects of fishing, resulting in a likely positive effect on groundfish.

Any future revisions to the HPTRP could result in additional restrictions on gillnet fisheries. Future actions would likely result in vessels facing additional restrictions and decreased fishing effort,

possibly resulting in positive impacts to groundfish and other species that are taken incidentally in the gillnet fishery.

As described in an NOI to prepare an EIS (74 FR 88 May 8, 2009), NMFS is considering increasing the size of the escape opening for TEDs in the summer flounder fishery, expanding the use of TEDs to other trawl fisheries, and modifying the geographic scope of the TED requirements. Since the sectors operate under an ACE, and assuming that the ACE is met, the TED requirements would likely have a negligible effect on the target species as the same quantity of targeted fish would be landed.

The target stock for Amendment 15 to the Scallop FMP is the Atlantic sea scallop. Yellowtail flounder (all three stocks) is a common bycatch species in the scallop fishery. Due to the rate of yellowtail flounder catch in the scallop fishery, Amendment 16 to the Multispecies FMP established a yellowtail flounder ACL sub-component for the scallop fishery. Under Amendment 15 of the Scallop FMP, AMs for the catch of yellowtail flounder in the scallop fishery would be established. Once these AMs are specified, yellowtail flounder caught in the scallop fishery will be considered a sub-ACL controlled by an AM. Adoption of ACLs and AMs for the scallop fishery and the yellowtail flounder bycatch would provide an incentive for scallop fishermen to reduce their yellowtail bycatch in order to maximize scallop yield. For this reason, Amendment 15 to the Scallop FMP should inherently have low positive impacts on allocated target species.

Amendment 17 to the Northeast Multispecies FMP is administrative and is not projected to alter fishing behavior. Therefore, impacts to allocated target species are expected to be negligible.

Summary of Impacts: Amendment 13, FW 42, Amendment 16, and FW 44 have had (or would be expected to have) positive effects on allocated target species. Other FMPs that affect other species landed by groundfish sectors also result in positive effects on allocated target species. Future measures that will likely restrict fishing effort (EFH Omnibus, HPRTP) will also have positive effects on allocated target species. Actions that increase fishing effort (i.e., FWs 40A, 40B, 41, 45) had low negative or negligible effects on allocated target species. Amendment 17, ALWTRP and TED requirements would all have negligible impacts on allocated resources. Overall, the cumulative effect of past, present, and reasonably foreseeable future fishing actions have resulted in positive effects on allocated target species.

5.2.3.3 Non-allocated Target Species and Bycatch

Past and Present Actions: Non-allocated target species and bycatch are those species that dominate bycatch (i.e., dogfish) or are the primary alternate species that are landed by groundfishermen (i.e., monkfish and skates). Northeast multispecies FMP management actions that reduce fishing effort (i.e., Amendment 13, FW 42 and 44, and Amendment 16) have or will likely have indirect positive effects on non-allocated target species and bycatch caught in conjunction with the allocated target species. Conversely, actions that increase fishing effort (i.e., FW 40A, FW 40B, 41) have negligible or low negative effect on both landed species and bycatch.

Spiny dogfish was one of the top non-groundfish species landed by multispecies vessels under the Category B (regular) DAS program (Table 87 of Amendment 16 Final EIS). This species primarily interacts with gillnet and hook and line gear, and represented over 90 percent of the bycatch reported by the GB Cod Fixed Gear and Hook Sectors in 2006 and 2007. Since the spiny dogfish stock is managed under a FMP separate from the Northeast Multispecies FMP, the impacts of the spiny dogfish FMP are briefly discussed. The spiny dogfish FMP was implemented in 2000 in response to a decline in the female spawning stock biomass, and it initiated stock rebuilding measures. Included among the approved management measures in the FMP was the requirement that the MAFMC and NEFMC jointly develop annual specifications, which include a commercial quota to be allocated on a semi-annual basis, and other

restrictions to assure that fishing mortality targets will not be exceeded. Based upon the 2009 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. The dogfish FMP has resulted in a positive impact to the dogfish stock, the primary bycatch species of the groundfish fleet.

Monkfish is commonly caught along with groundfish and is considered one of the top target species that is not allocated to sectors by an ACE (i.e., non-allocated target species). Monkfish are currently regulated by the Monkfish FMP, which was implemented in 1999. The Monkfish FMP and subsequent amendments (such as Amendment 5) and framework actions have reduced fishing effort over the last decade, which has resulted in positive impacts for groundfish and non-groundfish stocks (including bycatch).

FW 44 to the Northeast Multispecies FMP implemented ACLs in FY 2010 for all Northeast multispecies stocks and made adjustments to the management measures to address stocks of concern and to manage the fishery in a more precautionary manner. This action is intended to work closely with and augment Amendment 16 to the Northeast Multispecies FMP.

To build upon Amendment 16 and FW 44, FW 45 to the Northeast Multispecies FMP may alter ACLs for some groundfish species, which may result in a minor increase in fishing effort. The potential impact of this framework on non-allocated target species and bycatch would be controlled predominantly by the ACEs for each allocated target stocks. However, the non-allocated species have management measures in place to limit the catch of these species and control mortality. Non-allocated target species management measures in conjunction with the minor potential increase in fishing effort under FW 45 would result in a negligible impact.

As indicated in Table 87 of the Final EIS for Amendment 16 to the Northeast Multispecies FMP, skates comprised nearly half the landings by weight for FY 2006 and 2007, under the Category B DAS (multispecies) program. Skates are currently managed under an FMP, and Amendment 3 to the FMP was effective July 16, 2010. The purpose of Amendment 3 to the Skate FMP regulations are to reduce discards and landings sufficiently to rebuild stocks of winter, thorny, and smooth skates, and to prevent other skates from becoming overfished. The new management measures in Amendment 3 may result in a reduction in fishing effort to rebuild biomass. Therefore, the likely impacts would be positive for skates, which in this assessment is considered to be a non-allocated target species.

As with allocated target species, revisions to the HPTRP and the ALWTRP could result in additional restrictions on vessels, possibly resulting in negligible to positive impacts to bycatch through effort reductions.

Future Actions: Implementation of the EFH Omnibus Amendment may also result in additional habitat protections for which there is an indirect positive effect to bycatch species, as they would also receive protection. Similar to allocated species, any future revisions to the HPTRP could result in additional restrictions on gillnet fisheries, possibly resulting in positive impacts to non-allocated target species and bycatch through effort reductions.

NMFS is considering increasing the size of the escape opening for TEDs in the summer flounder fishery, expanding the use of TEDs to other trawl fisheries, and modifying the geographic scope of the TED requirements (74 FR 88 May 8, 2009) to protect sea turtles as part of the Strategy. Because TEDs with a larger escapement opening would likely exclude some of non-turtle species from capture in the codend, the TED requirements would likely have a positive effect on non-allocated target species and bycatch.

Amendment 15 to the Scallop FMP has specific gear and area restrictions that would have reduced bycatch of various non-target species, including groundfish, such as yellowtail flounder (as described above), and other non-groundfish bycatch species, such as skate and monkfish. Effort controls to maintain sustainability in the scallop fishery have reduced effort and increased efficiency of the fleet, which reduces impact on non-allocated target species and bycatch. Overall, if mortality on scallops is higher than expected and ACLs are exceeded, AMs will be implemented to correct the exceedence. That reduced effort would have beneficial impacts on non-allocated target species. Further, it would be expected that AMs developed for yellowtail flounder would also reduce impact on other non-allocated targeted and bycatch species. While there may be a benefit to non-yellowtail flounder bycatch species due to AMs in Amendment 15 and reduced fleet effort due to increased efficiency, impacts from Amendment 15 to Scallop FMP on non-allocated target species and bycatch would be negligible because specific AMs or sub-ACLs for other non-allocated targeted and bycatch species have not been established under this Amendment,

Amendment 17 to the Northeast Multispecies FMP is administrative and is not projected to alter fishing behavior. Therefore, impacts to non-allocated target and bycatch species are expected to be negligible.

Summary of Impacts: As indicated in Table 5.2.3-1, actions that reduce fishing effort have had positive effects on non-allocated target species and bycatch because in general, less fishing effort results in less impact from groundfishing on non-allocated target species and bycatch. Further FMPs developed for non-allocated target species (such as monkfish, dogfish, and skates) have resulted in positive impacts to these species. However, recent groundfish actions that reduce fishing effort may not have benefited non-allocated target species to a great extent, due to the percentage of these species caught as bycatch, and increased targeting of non-groundfish species. Conversely, actions that increase fishing effort (i.e., FW 40A, FW 40B, FW 41, FW 45) are considered to have low negative or negligible effects on non-allocated target species and bycatch because more fishing generally results in more non-allocated target species and bycatch. TEDs requirements would likely have a positive effect on non-allocated target species and bycatch and discards as they would likely exclude some of these species from capture in the codend. Amendment 17 would have negligible impacts on non-allocated target species and bycatch as it is an administrative action. Overall, the cumulative effect of past, present, and reasonably foreseeable future fishing actions have resulted in positive effects on non-allocated target species and bycatch.

5.2.3.4 Protected Resources

Past and Present Actions: Reductions in fishing effort through the implementation of management actions such as Amendment 13, FWs 42 and 44, Amendment 16, and FMPs have generally had positive effects on protected resources by limiting the amount of fishing gear used in their geographic range during the fishing year, which may result in reductions in the rates of gear interaction with endangered species and other protected resources. FWs 40A, 40B, and 41 allowed minor increases in fishing with fixed gear, which had negligible impacts on protected resources.

In addition to these actions, NMFS has implemented specific regulatory actions to reduce injuries and mortalities from gear interactions. The ALWTRP, implemented in 1999 with subsequent rule modifications, restrictions, and extensions, includes time and area closures for trap/pot fisheries (e.g., lobster and black sea bass) and gillnet fisheries (e.g., anchored gillnet and shark gillnet fisheries); gear requirements, including a general prohibition on having line floating at the surface in these fisheries; a prohibition on storing inactive gear at sea; and restrictions on setting shark gillnets off the coasts of Georgia and Florida and drift gillnets in the Mid-Atlantic. This plan also contains non-regulatory aspects, including gear research, public outreach, scientific research, a network to inform mariners when right whales are in an area, and increasing efforts to disentangle whales caught in fishing gear. The intent of

the ALWTRP is to positively affect large whales by reducing injuries and deaths of large whales (North Atlantic right, humpback, and fin) in waters off the U.S. East Coast due to incidental entanglement in fishing gear.

FW 44 to the Northeast Multispecies FMP implemented ACLs in FY 2010 for all Northeast multispecies stocks and made adjustments to the management measures to address stocks of concern and to manage the fishery in a more precautionary manner. This action was intended to work closely with and augment Amendment 16 to the Northeast Multispecies FMP. FW 44 would potentially reduce fishing effort and correlate opportunities for interactions with protected species; therefore, positive impacts to protected resources are likely.

Any minor increases in fishing effort through the modification of ACLs under FW 45 may increase rates of gear interaction with endangered species and other protected resources. Any increase in fishing effort under FW 45 is expected to be minor; therefore, it would likely result in a negligible impact on protected resources.

Amendment 3 to the Skate FMP also requires a reduction in fishing effort, resulting in low positive effects to protected resources. Further, the HPTRP for the Gulf of Maine and Mid-Atlantic Coasts was originally implemented in 1998, and NMFS published a final rule which became effective March 22, 2010, with additional management restrictions for gillnetters.

The Monkfish FMP and its modifications have resulted in a reduction in fishing effort, which has resulted in less fishery interactions with protected resources. Currently, a range of alternatives are being considered under Amendment 5 to the Monkfish FMP which could result in increased DAS and trip limits resulting from higher catch targets. Any protected resource impacts from Amendment 5 would depend upon the selected preferred alternative, which may or may not increase or alter the location of fishing or the number of gear days and the associated change in the protected resource interaction. Overall, due to the historic reduction in fishing effort, the Monkfish FMP has had a positive impact on protected resources.

Under the dogfish FMP, it is likely that there will be an increase in the amount of spiny dogfish caught and landed by vessels fishing for groundfish. Because vessels capturing spiny dogfish primarily use bottom gillnets, this fishery would be subject to protected resources take minimization measures such as pinger requirements and closed areas in the HPTRP and ALWTRP. Therefore, the dogfish FMP would have a negligible effect on protected resources.

One of the factors cited in NMFS' proposed listing for the five DPSs of Atlantic sturgeon is bycatch. The ASMFC analysis concluded that to remain stable or grow, populations of Atlantic sturgeon can sustain only very low anthropogenic sources of mortality. It is apparent, therefore, that should the proposed listing be finalized, reductions in bycatch mortality may be required in order to recover Atlantic sturgeon. Final listing determinations for the Atlantic sturgeon DPSs are expected by October 6, 2011. If the final listing rules are published, they will likely become effective 30 days after publication. 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 4.4.4) 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 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. We have considered whether the NE multispecies fishery, including implementation of FY 2011 Sector Operations Plans, is likely to jeopardize the proposed Atlantic sturgeon DPSs and conclude 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 number of interactions that will occur between now and the time a final listing determination will be made (e.g., up to 154 mortalities from multiple DPSs) is not likely to cause an appreciable reduction in survival and recovery of any of the five DPSs as described in section 4.4.4.

As discussed in Section 4.4.4, 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 areas) are relatively low on a yearly basis, and have been declining in recent years, with only 51 encounters estimated in 2010. Recent declines in estimated encounters with Atlantic sturgeon in the groundfish fishery is likely attributable to continued reductions in fishing effort in the fishery based on a need to prevent overfishing and rebuild overfished groundfish stocks consistent with the Magnuson-Stevens Act. As groundfish stocks rebuild, it is possible that fishing effort will increase slightly as yearly annual catch limits (ACLs, or quotas) for groundfish stocks also increase. However, due to continued consolidation and cancelation of limited access NE multispecies permits over the past 10 years, it is unlikely that fishing effort will return to levels observed in 2001 or 2002, but will likely stabilize somewhere lower than peak levels, assuming groundfish stock abundances are maintained at or around the maximum sustainable yield for each stock.

As noted in Section 4.4.4, 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 indicate that the Hudson River DPS likely consists of approximately 870 spawning individuals in any one year. However, adult Atlantic sturgeon are not believed to spawn annually, but rather every other year for males and every two to five years for females. 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 may 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 estimated encounters and expected mortalities are lower in recent years than has been estimated in the past, it is unlikely that the implementation of FY 2011 Sector Operations Plans would result in significant impacts to any DPS of Atlantic sturgeon during FY 2011. Further, the yearly encounters and mortalities with Atlantic sturgeon that were estimated in Section 4.4.4 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 yearly encounters and mortalities by the groundfish fishery would be lower than those estimates. Moreover, compared to the No Action alternative, it is likely that proposed measures would result in fewer impacts to Atlantic sturgeon. Because the No Action alternative would not approve FY 2011 sectors operations plans, fishing effort, particularly in the common pool, may increase in areas in which increased sturgeon encounters are more likely (i.e., further south and in statistical area 521. This could result in increased encounters and, therefore, mortalities of Atlantic sturgeon compared to the preferred alternative. Therefore, the preferred alternative is not likely to result in a significant impact on Atlantic sturgeon at this time.

Future Actions: The impacts of the EFH Omnibus Amendment on protected resources would likely be negligible. Any future modifications to the HPTRP may be implemented if harbor porpoise

interaction reduction goals are not met, which would result in a positive impact on protected resources through additional reductions in harbor porpoise interactions.

The sea turtle Strategy is a gear-based approach to addressing sea turtle bycatch and would decrease impacts to sea turtles from fishing operations. NMFS is working to develop and implement bycatch reduction measures in all trawl fisheries in the Atlantic and Gulf of Mexico (72 FR 7382, February 15, 2007) and is considering amendments to the regulatory requirements for TEDs (72 FR 7382). Changes in TED regulatory requirements would increase protection of sea turtles; therefore, this action would result in a positive impact on protected resources.

Serious injuries and mortalities of Atlantic sturgeon in commercial fishing gear are a likely concern for the long term persistence and recovery of the DPSs, and was a primary reason cited for the proposals to list the DPSs under the ESA. If final listing determinations are issued, the existing Section 7 consultation for the multispecies fishery would need to be reinitiated consistent with the requirement to reinitiate formal consultation where discretionary Federal agency involvement or control of the action has been retained and a new species is listed that may be affected by the action. During the reinitiation, the effects of the multispecies fishery on the five DPSs would be fully examined. Along with the impacts analysis, the formal consultation process will result in conservation recommendations and, if pertinent, reasonable and prudent measures, which would be actions deemed necessary or appropriate to minimize the impacts.

Amendment 15 to the Scallop FMP has measures that would be unlikely to alter scallop fishery impacts on protected resources. Therefore, impacts to protected resources are expected to be negligible.

Amendment 17 to the Northeast Multispecies FMP is administrative and is not projected to alter fishing behavior. Therefore, impacts to protected resources are expected to be negligible.

Summary of Impacts: As indicated in Table 5.2.3-1, management actions that reduce fishing effort also reduce gear interaction with protected resources, resulting in positive effects. FWs 40A, 40B, 41, and 45 allowed minor increases in fishing, which have negligible to low negative impacts on protected resources. With the exception of the EFH Omnibus Amendment, all other management actions described were designed to benefit or be negligible to protected resources; therefore, these actions are all considered to have positive effects on this VEC. Overall, the cumulative effect of these past, present, and reasonably foreseeable future fishing actions have resulted in positive effects on protected resources.

5.2.3.5 Human Communities

Past and Present Actions: Past and present actions that have had negative short-term and low positive long-term impacts to the port communities and positive impacts to sector members include Amendment 13, FWs 42 and 44, and Amendment 16 to the Northeast multispecies FMP. These actions both substantially cut fishing effort in order to rebuild stocks by mandated timeframes, resulting in economic losses in the short-term. Because these actions are designed to rebuild the groundfish stocks and stabilize the fishing industry, these actions are expected to have long-term positive effects on the human communities.

FW 40A implemented the Closed Area I Hook Gear Haddock SAP which allowed increased opportunities for the GB Cod Fixed Gear and Hook Sector to fish healthy haddock stocks using hook gear only, resulting in a low positive effect for members of this sector. FW 41 allowed non-sector vessels to participate in the Closed Area I Hook Gear Haddock SAP, which extended the positive economic effects to non-sector vessels and increased revenue for the port communities, resulting in a low positive effect. FW 40B allowed vessels with no hook history to join the GB Cod Hook Sector and contribute their

historical cod landings to the sector's allocation based on landings made with gear types other than hook gear, resulting in a low positive impact to the sector participants.

The ALWTRP had impacts on the human community ranging from low negative to negligible; primarily because these measures required minor gear modifications for gillnet gear to reduce impacts to protected resources. Similarly, actions of the HPTRP could have negative impacts, particularly if the impacts from this plan compound reductions implemented via Amendment 16.

Historically, the spiny dogfish FMP has had a low negative impact on human communities because of the implementation of quotas and trip limits, therefore, reducing revenue. However, the FY 2009 and FY 2010 specifications increased the quota and trip limits because the species is no longer considered overfished nor is overfishing occurring. This increase in quota and the rebuilding goal of the FMP will likely have a positive impact on the human communities because there will be a sustainable fishery available for harvest.

The Monkfish FMP has resulted in a reduction in fishing effort while the stock was rebuilding, which resulted in less revenue and a low negative impact on human communities. Over the long term, a sustainable monkfish fishery through management actions would result in long term beneficial impacts. Amendment 5 is currently considering a range of alternatives which would establish ACLs and AMs that would likely control fishing effort at a level that achieves optimum yield while preventing overfishing, which may continue the long-term positive effect.

FW 44 to the Northeast Multispecies FMP implemented ACLs in FY 2010 for all Northeast multispecies stocks and made adjustments to the management measures to address stocks of concern. This action is intended to work closely with and augment Amendment 16 to the Northeast Multispecies FMP. FW 44 would potentially reduce fishing effort and consequently reduce revenue; therefore, having negative impacts ports and sector members in the short term. FW 44 is expected to have long-term positive impacts on human communities as it promotes stock rebuilding.

FW 45 may alter rebuilding strategies, ACLs, and TACs for some species, allow for the implementation of additional sectors, and adjust monitoring requirements. Further, FW 45 may adjust trip limits for certain handgear vessels and could implement other measures to ensure that overfishing does not occur. While the preferred alternative for FW 45 has not been decided, overall, FW 45 would not likely substantially increase ACLs; therefore, this framework would likely only have a negligible impact on human communities.

Amendment 3 to the Skate FMP will likely have negative economic impacts on the ports and sector members because of the expected restrictions on fishing effort. Similarly, the actions of the HPTRP could have negative impacts, particularly if the impacts from this plan compound reductions implemented via Amendment 16.

Future Actions: Cumulative effects of the EFH Omnibus Amendment cannot easily be determined. Similar to the 2010 modifications to the HPTRP, potential future modifications could result in additional reductions in fishing effort which would result in a negative impact on human communities.

As described in an NOI to prepare an EIS as part of the Sea Turtle Strategy (74 FR 88 May 8, 2009), NMFS is considering modification of TED requirements. New TED requirements would likely have a negative economic effect on sector members that trawl because of the costs associated with adding and/or modifying TEDs to comply with the new regulation and the costs associated with a decrease in landed species if vessels would not offset a loss in catch.

Most of the measures in Amendment 15 to the Scallop FMP will not change economic impacts for the scallop fishery, or are expected to have indirect economic benefits. Amendment 15 would result in the establishment of AMs and a yellowtail flounder bycatch ACE. Because this yellowtail flounder bycatch ACE would be accounted for under Amendment 16 to the Multispecies FMP, the establishment of yellowtail flounder AMs are designed to rebuild the yellowtail flounder stocks and stabilize the fishing industry, these actions are expected to have a low positive effect on the human communities that rely on groundfishing. Further, the sub-ACL of yellowtail flounder would represent the amount that has been caught in the scallop fishery in the past; therefore, the AMs would apply to the scallop fishery (such as in the case of an overage), and not necessarily be applied against the sector's ACE. This would result in an additional positive impact on human communities, as the sector vessels would not likely be held accountable for an overage from the scallop fleet.

Amendment 17 to the Northeast Multispecies FMP is an administrative action which would clarify and streamline the procedures and requirements with which NOAA-sponsored, state-operated permit banks must comply in order to lease allocation to a sector and sector vessels. Therefore, due to its administrative nature, Amendment 17 is projected to have negligible impacts on human communities. Amendment 17 would allow for NOAA-sponsored, state-operated permit banks to acquire and lease ACE (and DAS) to existing sectors (and sector vessels), and as such, the impacts associated with this transfer of ACE are similar to what are assessed in Section 5.1.3 of this document concerning the approval of sectors. As the MOAs between NMFS and the States' prohibit these permit banks from actively fishing acquired ACE, all impacts related to the goals and operation of the NOAA-sponsored, state-run permit banks, such as preserving fishing opportunities for small scale-fishing operations, mitigating the disproportionate impacts on small communities that may result from fleet consolidation, and affects on allocation market prices, are assessed under the approval of sector Operations Plans within this document. If no sector Operations Plans are approved, there would be minimal impact from the ability of a NOAA-sponsored, state-operated permit bank to acquire or lease ACE under Amendment 17, as they would have no ability to fish this ACE per the MOA, or to lease ACE to sectors.

Summary of Impacts: As indicated in Table 5.2.3-1, the effects of past, present, and reasonably foreseeable future fishery management actions have been positive on nearly all VECs with the exception of human communities. Mandated reductions in fishing effort have resulted in negative economic impacts to human communities. Management measures designed to benefit protected resources and restrict fishing effort have low negative effects on the human communities. However, the establishment of ACLs through sectors and the ultimate goal of rebuilding groundfish stocks to sustainable levels will benefit the human communities eventually. Overall, the cumulative effect of past, present, and reasonably foreseeable future fishing actions have resulted in negative effects on human communities in the short term and a positive effect on human communities in the long-term.

5.2.4 Non-Fishing Effects: Past, Present, and Reasonably Foreseeable Future Actions

Non-fishing activities that occur in the marine nearshore and offshore environments and their watersheds can cause the loss or degradation of habitat and/or affect the species that reside in those areas. Table 5.2.4-1 provides a summary of past, present, and reasonably foreseeable non-fishing activities and their expected effects on VEC's in the affected environment. The following discussions of impacts are based on past assessments of activities and assume these activities will likely continue into the future as projects are proposed. More detailed information about these and other activities and their impacts are available in the publications by Hanson (2003) and Johnson et al. (2008).

Table 5.2.4-1
Summary of Effects on VECs from Past, Present, and Reasonably Foreseeable Non-fishing Actions in the Affected Environment

Non-Fishing Actions	Physical Environment Impacts	Biological Environment Impacts			Human Community Impact	
	Habitat	Allocated Target Species	Non-allocated Target Species and Bycatch	Protected Resources	Ports	Sector Participants
Past, Present, and Reasonably Foreseeable Future Actions						
General Construction and Development Activities	- in nearshore Likely L- in offshore	Likely L-	Likely L-	Likely L-	Negl	Negl
Point and non-point source (agricultural/urban runoff) pollution	- in nearshore L- in offshore	Likely L-	Likely L-	Likely L-	Negl	Negl
Offshore disposal of dredged materials	L-	Likely L-	Likely L-	Likely L-	Negl	Negl
Beach Nourishment	L-	Likely L-	Likely L-	Negl	Negl	Negl
Installation of offshore wind farm and infrastructure	Likely L-	Likely L-	Likely L-	Likely L-	Likely L-	Likely L-
Installation of infrastructure associated with liquefied natural gas terminal	Likely L-	Likely L-	Likely L-	Likely L-	Likely L-	Likely L-
Restoration Activities (wetland restoration, artificial reefs, eelgrass, etc…)	+	+	+	+	+	+
Implementation of National Marine Fisheries Service Final Rule on Ship Strike Reduction Measures	Likely Negl	Likely Negl	Likely Negl	Likely +	Likely Negl	Likely Negl
Summary of Impacts	**- to L-**	**L-**	**L-**	**L-**	**Negl to L-**	**Negl to L-**

Note:

Unless noted otherwise, the impacts of most of these actions are localized and although considered negative at the site, they have an overall low negative or negligible effect on each VEC due to limited exposure of action to the population or habitat as a whole.

Construction/Development Activities and Projects: Construction and development activities include, but are not limited to, point source pollution, agricultural and urban runoff, land (roads, shoreline development, wetland loss) and water-based (beach nourishment, piers, jetties) coastal development, marine transportation (port maintenance, shipping, marinas), marine mining, dredging and disposal of dredged material and energy-related facilities, all of which are discussed in detail in Johnson et al. (2008). These activities can introduce pollutants (through point and non-point sources), cause changes in water quality (temperature, salinity, dissolved oxygen, suspended solids), modify the physical characteristics of a habitat or remove/replace the habitat altogether. Many of these impacts have occurred in the past and present and their effects would likely continue in the reasonably foreseeable future. It is likely that these projects would have negative impacts caused from disturbance, construction, and operational activities in the area immediately around the affected project area. However, given the wide distribution of the affected species, minor overall negative effects to offshore habitat, protected resources, allocated target stocks, and non-allocated target species and bycatch are anticipated since the affected areas are localized to the project sites, which involve a small percentage of the fish populations and their habitat. Thus, these activities for most biological VECs would likely have an overall low negative effect due to limited exposure to the population or habitat as a whole. Any impacts to inshore water quality from these permitted projects, including impacts to planktonic, juvenile, and adult life stages, are uncertain but likely minor due to the transient and limited exposure. It should be noted that 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 allocated target stocks, non-allocated target species and bycatch, and protected resources.

Restoration Projects: Regional projects that are restorative or beneficial in nature include estuarine wetland restoration; offshore artificial reef creation, which provides structure and habitat for many aquatic species; and eelgrass (*Zostera marina*) restoration, which provides habitat for, among other things, juvenile Atlantic cod. These types of projects improve habitats, including nursery habitats for several commercial groundfish species. Due to past and present adverse impacts from human activities on these types of habitat, restorative projects likely have slightly positive effects at the local level.

Protected Resources Rules: The NMFS final Rule on Ship Strike Reduction Measures (73 FR 60173, October 10, 2008) is a non-fishing action in the U.S.-controlled North Atlantic that is likely to affect endangered species and protected resources. The goal of this rule is to significantly reduce the threat of ship strikes on North Atlantic right whales and other whale species in the region. Ship strikes are considered the main threat to North Atlantic right whales; therefore, NMFS anticipates this regulation will result in population improvements to this critically endangered species.

Energy Projects: Cape Wind Associates (CWA) proposes to construct a wind farm on Horseshoe Shoal, located between Cape Cod and Nantucket Island in Nantucket Sound, Massachusetts. The CWA project would have 130 wind turbines located as close as 4.1 miles off the shore of Cape Cod in an area of approximately 24 square miles with the turbines being placed at a minimum of 1/3 of a mile apart. The turbines would be interconnected by cables, which would relay the energy to the shore-based power grid. If constructed, the turbines would preempt other bottom uses in an area similar to oil and natural gas leases. The potential impacts associated with the CWA offshore wind energy project include the construction, operation, and removal of turbine platforms and transmission cables; thermal and vibration impacts; and changes to species assemblages within the area from the introduction of vertical structures.

Other offshore projects that can affect VECs include the construction of offshore liquefied natural gas (LNG) facilities such as the Neptune LNG facility approximately 10 miles off the coast of Gloucester, Massachusetts. The LNG facility consists of an unloading buoy system where specially designed vessels moor and offload their natural gas into a pipeline, which delivers the product to customers in

Massachusetts and throughout New England. As it related to the impacts of the Proposed Action, the Neptune LNG facility is expected to have small, localized impacts where the pipelines and buoy anchors contact the bottom.

On December 1, 2010, the Obama administration announced there would be at least a seven year moratorium on oil and natural gas exploration on the Atlantic coast.

Summary of Impacts: Most of the impacts from these aforementioned activities are uncertain but would likely range from negative to low negative in the immediate areas of the project site. However, on a larger-scale population level, these activities are likely to have a low negative to negligible impact on a population level, considering that the large portion of the populations have a limited or negligible exposure to these local non-fishing perturbations and that existing regulatory requirements would likely mitigate the severity of many impacts (see Table 5.2.4-1).

5.2.5 Summary of Cumulative Effects

The following analysis summarizes the cumulative effects of past, present, and reasonably foreseeable future actions in combination with the proposed action on the VECs identified in Section 5.1.

5.2.5.1 Physical Environment/Habitat/EFH

While the impact analysis in this action is focused on direct and indirect impacts to the physical environment 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. In addition, the operation of vessels in all sectors would have negligible impacts on benthic/demersal habitat, since these vessels, under the No Action Alternative, would be in the Common Pool and would have fished in the same areas. 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. However, impacts from the proposed action were found to be negligible. Therefore, when considering the cumulative effects of this action in combination with past, present, and reasonably foreseeable future actions, no significant impacts to the physical environment/habitat/EFH from the proposed action are expected.

5.2.5.2 Allocated Target Species

As found in the CEA for Amendment 16 to the FMP (NEFMC 2009a), the long-term trend has been positive for cumulative impacts to allocated target species. While several groundfish species remain overfished or overfishing is occurring, substantial effort reductions since implementation of the Northeast Multispecies FMP have allowed several stocks to rebuild and the rebuilding process for others is underway. Further, indirect impacts from the effort reductions in other FMPs are also thought to contribute to groundfish mortality reductions. In addition, the operation of vessels in all sectors would have negligible impacts on allocated target species, due to the imposition of an ACE for each allocated target species. Also, the effects from non-fishing actions are expected to be low negative as the potential for localized harm to VECs exists. These factors, when considered in conjunction with the proposed action which would have negligible impacts to allocated target species due to the implementation of an ACE, would not have any significant cumulative impacts.

5.2.5.3 Non-allocated Target Species and Bycatch

The primary non-allocated target and bycatch species analyzed for the purposes of this EA are monkfish, spiny dogfish, and skates. The operation of vessels in all sectors would have negligible impacts on non-allocated target species and bycatch, because the catch rate for non-allocated target stocks are likely linked to that of allocated target stocks, the allocations of which are controlled by ACEs. The end result would be little if any increase in impacts to non-allocated target species and bycatch under sector management relative to the Common Pool. Management efforts in the past have led to each of these species being managed under their own FMP. One of the mandates of FMPs is to minimize bycatch and discard species. Therefore, with continued management actions, FMPs should have a positive impact on bycatch and discard species. The effects from non-fishing actions are expected to be low negative as the potential for localized harm to VECs exists. The summary of impacts for non-allocated target species and bycatch species from sector operations and CEA Baseline is expected to be negligible and not significant due to these above stated reasons.

5.2.5.4 Protected Resources

The operation of all sectors may increase the potential for gear interactions with protected species, relative to the vessels operating in the Common Pool, due to several sector-specific exemptions. This potential increase in gear interaction would likely have low negative impacts on protected resources. Historically, the implementation of FMPs and sectors have 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. One of the goals of future management measures will be to decrease the number of marine mammal interactions with commercial fishing operations. Measures adopted by Amendment 16 to the Northeast Multispecies FMP substantially reduced 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. The cumulative result of these actions to meet mortality objectives are 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. The combination of these past actions along with future initiatives to reduce turtle interactions through the Sea Turtle Strategy when considered with the proposed action would not result in significant cumulative impacts.

5.2.5.5 Human Communities and Social and Economic Environment

The operation of vessels in all sectors would have an overall low positive impact on human communities, including ports and sector participants, due to the increase in revenue, which would result from higher ex-vessel values with landings and more fish being landed because of the flexibility that sector management provides. Past management actions have had a negative impact 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 plan. The effects from non-fishing actions are also expected to be negligible to low negative as the potential for localized harm to VECs exists. Impacts, both positive and negative, from the Proposed Action would likely due little to change this finding. Therefore, the Proposed Action when taken into consideration with past, present, and reasonably foreseeable future actions is not expected to have significant cumulative impacts.

Conclusion

In conclusion, the summary of impacts from operations of all sectors and CEA Baseline would be negligible on habitat, allocated target species, and non-allocated target species and bycatch; likely low negative to protected resources; and low positive to human communities (Table 5.2.5-1). These impacts would not be significant due to the reasons stated in this assessment.

Table 5.2.5-1
Cumulative Effects Resulting from Implementation of the Proposed Action and CEA Baseline

		Habitat Impacts	Biological Impacts			Human Community Impacts	
		Habitat	Allocated Target Species	Non-allocated Target Species and Bycatch	Endangered/ Protected Species	Ports	Sector Participants
Cumulative Effect Baseline	Effects of All Sectors (see Table 5.2.2-1)	Negl	Negl	Negl	Negl	L+	L+
	Effects of Past, Present, and Reasonably Foreseeable Future Non-Fishing Actions (see Table 5.2.4-1)	- to L-	L-	L-	L-	Negl to L-	Negl to L-
	Effects of Past, Present, and Reasonably Foreseeable Future Fishing Actions (see Table 5.2.3-1)	+	+	+	+	-	-
Direct and Indirect Effects of Proposed Sector Operations (see Table 5.1-1)		Negl	Negl	Negl	Likely L-	L+	L+
Cumulative Effects Sum of Effects from implementation of Sector operations and Cumulative Effect Baseline		Negl	Negl	Negl	Likely L-	L+	L+

6.0 LIST OF PREPARERS AND POINTS OF CONTACT

This document was prepared through the cooperative efforts of staff members of Cardno ENTRIX and National Marine Fisheries Service (NMFS).

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7.0 PERSONS AND AGENCIES CONSULTED

Staff members of NMFS Northeast Regional Office and Northeast Fisheries Science Center were consulted in preparing this EA.

8.0 COMPLIANCE WITH APPLICABLE LAWS AND EXECUTIVE ORDERS

8.1 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

Section 301 of the Magnuson-Stevens Act requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. Changes implemented by Amendment 16 address how the proposed management actions comply with the National Standards. Under Amendment 16, the NEFMC adopted conservation and management measures that would end overfishing and rebuild Northeast multispecies stocks to achieve, on a continuing basis, the optimum yield for Northeast multispecies stocks and the U.S. fishing industry using the best scientific information available consistent with National Standards 1 and 2. Under FW 45, the NEFMC expanded and revised several measures, including additional conservation measures. The Northeast Multispecies FMP and implementing regulations manage all 20 groundfish stocks (13 species) throughout their entire range, as required by National Standard 3. Section 9.1.1 of Amendment 16 describes how the sector measures implemented under that action do not discriminate among residents of different states consistent with

National Standard 4, do not have economic allocation as their sole purpose (National Standard 5), account for variations in these fisheries (National Standard 6), avoid unnecessary duplication (National Standard 7), take into account fishing communities (National Standard 8), addresses bycatch in fisheries (National Standard 9), and promote safety at sea (National Standard 10). By proposing to meet the National Standards requirements of the Magnuson-Stevens Act through future FMP amendments and framework actions, the NEFMC will ensure that overfishing is prevented, overfished stocks are rebuilt, and the maximum benefits possible accrue to the ports and communities that depend on these fisheries and the Nation as a whole.

Annual review of sector Operations Plans ensures that proposed sector activities are consistent with the rebuilding plan for Northeast multispecies stocks. The proposed action would comply with all elements of the Magnuson-Stevens Act, including the National Standards, and the Northeast Multispecies FMP. This action is being taken in conformance with the Northeast Multispecies FMP, which requires that an EA of sector Operations Plans be prepared in compliance with NEPA, Magnuson-Stevens Act, and other applicable laws and Executive Orders. Amendment 13 to the FMP established the sector Operations Plan approval process. Amendment 16 to the FMP authorized 17 new sectors and revised the regulations governing all 19 sectors. FW 45 to the FMP proposes to authorize up to an additional 5 sectors, including the Sustainable Harvest Sector 3, the Maine Permit Banking Sector, the New Hampshire Permit Bank Sector, the Massachusetts Permit Bank Sector, and the Rhode Island Permit Banks Sector. Nothing in this action changes the findings in Amendment 16 that this action complies with the provisions of the Magnuson-Stevens Act. There are no adverse impacts associated with this action, so no EFH assessment or EFH consultation is required, as determined by a Habitat Conservation Division Review (September 23, 2010).

8.2 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, including implementation of FY 2011 Sector Operations Plans, was likely to jeopardize one or more of the proposed five DPSs 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 actions under the the FY 2011 Sector Operations Plans and Contracts and Allocations of NE multispecies ACE have been analyzed in the informal consultation dated January 20, 2011, 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.

As noted previously, one of the factors cited in NMFS' proposed listing for the five DPSs of Atlantic sturgeon is bycatch. The ASMFC analysis concluded that to remain stable or grow, populations of Atlantic sturgeon can sustain only very low anthropogenic sources of mortality. It is apparent, therefore, that should the proposed listing be finalized, reductions in bycatch mortality may be required in order to recover Atlantic sturgeon. Final listing determinations for the Atlantic sturgeon DPSs are expected by October 6, 2011. If final listing rules are published, they will likely become effective 30 days after publication. 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) 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 is whether the proposed action is likely to jeopardize the continued existence of the proposed species to determine the need for a conference. Atlantic sturgeon is a proposed species only until a final listing determination is made. When a final listing determination is made, the proposed rules will either be withdrawn or final listing rules will be published. We have considered whether the NE multispecies fishery, including implementation of the FY 2011 Sector Operations Plans and Contracts and Allocations of NE multispecies ACE, is likely to jeopardize the proposed Atlantic sturgeon DPSs through October 6, 2011, when a final listing determination is scheduled to be made, and conclude 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 number of interactions 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 based on current assessments of each DPS, as described in Section 4.4.4. In addition, as discussed further in Section 5.2.3.4, it is unlikely that the implementation of FY 2011 Sector Operations Plans would result in significant impacts to any DPS of Atlantic sturgeon during FY 2011 (i.e., through April 30, 2011).

Serious injuries and mortalities of Atlantic sturgeon in commercial fishing gear are a likely concern for the long term persistence and recovery of the DPSs, and was a primary reason cited for the proposals to list the DPSs under the ESA. If final listing determinations are issued, the existing Section 7 consultation for the multispecies fishery would need to be reinitiated consistent with the requirement to reinitiate formal consultation where discretionary Federal agency involvement or control of the action has been retained and a new species is listed that may be affected by the action. During the reinitiation, the effects of the multispecies fishery on the five DPSs would be fully examined.

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, we conclude that a conference for the proposed loggerhead DPSs is not required.

8.3 MARINE MAMMAL PROTECTION ACT (MMPA)

NMFS has reviewed the impacts of the FY 2011 sector Operations Plans on marine mammals and concluded that the management actions proposed are consistent with the provisions of the MMPA and would not alter existing measures to protect the species likely to inhabit the management unit of the Northeast multispecies FMP. For further information on the potential impacts of the proposed management action, see Section 5.1.4.1.

8.4 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

NOAA Administrative Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of a Proposed Action. In addition, the CEQ regulations at 40 C.F.R. 1508.27 states that the significance of an action should be analyzed both in terms of "context" and "intensity." The Proposed Action in this EA is the approval of 19 sector Operations Plans, and associated requests for exemptions from Federal fishing regulations. 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: The Proposed Action would not jeopardize the sustainability of any of the target species (cod [GB and GOM stocks], haddock [GB and GOM stocks], yellowtail flounder [GB, GOM, SNE stocks], American plaice, witch flounder, winter flounder [GB and GOM stocks], redfish, white hake, and pollock) affected by the action, because each sector has an Allowable Catch Entitlement (ACE) for each stock listed above that is a portion of the ACL established by the Northeast (NE) Multispecies FMP and that would be adhered to on an annual basis. The biological impacts of the Proposed Action on the allocated target species are analyzed in Section 5.1.

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

Response: The Proposed Action is not expected to jeopardize the sustainability of any non-allocated target species. If increased flexibility by the sectors improves the harvest of target species similarly to non-allocated target species and bycatch, then the relative catch rate of non-allocated target species and bycatch would be controlled by ACE. Once an ACE has been reached, fishing must cease. If sector members are able to successfully target certain allocated species, the amount of bycatch would decline relative to historical catch. The anticipated effect of the operations of the 19 sectors under allocations constrained by ACEs (as described in Amendment 16) would be to convert more vessel catch into landings and less into discards than if those same vessels were to fish within the Common Pool (Section 5.1).

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 is not expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in the FMP. Further, since the sectors will continue to operate using traditional fishing gear and maintain current fishing practices, the Proposed Action will have the same impacts on marine habitats or EFH as Common Pool vessels using similar gear and largely fishing in the same areas (Section 5.1).

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

Response: The Proposed Action is not expected to have a substantial adverse impact on public health and safety. The sectors would engage in routine fishing operations and would not affect safety at sea. Because fishing effort would be controlled by species-specific ACE rather than DAS, sector

members would have increased flexibility to decide when to fish. This flexibility would likely increase revenues, allow fishermen to more fully exploit previously under-exploited stocks, and reduce incentive to fish in unsafe conditions (Section 5.1).

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

Response: The Proposed Action is not expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat of these species. Sector members would utilize the same gear (primarily trawls, gillnets, traps/pots, and hook and line gear) utilized by the Common Pool. Impacts to cetaceans and pinnipeds from the use of gillnets would be minimized by use of the Take Reduction Plans, as discussed in Section 4.4.4. Trawl gear is generally considered to have low impacts on most protected resources. Hook and line gear is generally considered to have low impacts on most protected resources. Provisions of Amendment 16 exempt sectors from effort control measures (e.g., DAS limits, trip limits, area closures, and mesh size) which generally allow for an increased chance of interactions between sector vessels and protected resources due to fishing activities in previously closed areas and a potential increase in gear days. Overall, impacts to protected resources associated with operation of the 19 sectors would likely be low negative, but not significant (Section 5.1).

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 ecosystem function within the affected area. Implementation of sector Operations Plans would limit the amount of groundfish that each sector would be allowed to catch and land. Once the ACE has been reached, sector vessels would no longer be able to expend effort on catching groundfish.

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

Response: There are no significant social and economic impacts of the Proposed Action that are interrelated with natural or physical environmental effects. The Proposed Action would allocate ACE to each of the 19 sectors for 14 stocks of groundfish, thereby setting a limit on the amount of groundfish that each sector can catch. Sector members would be exempt from several restrictions of the FMP, however, sector members will primarily use trawl, gillnet, pot/trap, and hook and line gear, and maintain traditional fishing practices which will have no greater impact on habitat, protected species, or bycatch species as compared to the Common Pool and the groundfish fishery before sectors (Section 5.1). The operation of the 19 sectors would continue to mitigate the negative economic impacts that result from the current suite of regulations that apply to the groundfish fishery as well as meet the conservation requirements of the FMP. The Operations Plans allow flexibility and economic opportunity to the sector members and their communities. However, within the context of the region and the fishery as a whole, these benefits would be insignificant as determined under criteria of the Regulatory Flexibility Act (see Section 8.9). Further, while the sector members benefit socially and economically by the ability to self-regulate, this opportunity is not related with any impacts associated with the biological or physical environment. Therefore, the social and economic impacts of the Proposed Action are not interrelated with significant natural or physical environmental effects.

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

Response: The effects of the Proposed Action on the quality of human environment are not expected to be highly controversial. Implementation of the sectors was approved by a majority of the NEFMC, and membership in a sector is voluntary. The Proposed Action would not modify rebuilding plans and specifications adopted by Amendment 16 and FW 45, which are needed to rebuild groundfish stocks. While there has been some debate over how quickly to rebuild those stocks and the desired biomass for each stock, legal requirements established by the Magnuson-Stevens Act render these discussions moot. The Proposed Action is not expected to negatively impact habitat, allocated target species or non-allocated target species and bycatch, as described in Section 5.1. While the Proposed Action would likely result in low negative impacts to protected resources, these impacts, as discussed in Section 5.1, are not expected to be significant.

9. *Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, parkland, 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. There are no known parkland, prime farmlands, wetlands, or wild scenic rivers in the study area. 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. The trawl, gillnet, pot/trap, and hook and line gear used by sectors are traditional gears used in the groundfish fishery. 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 effects of the Proposed Action on the human environment are not expected to be highly uncertain or involve unique or unknown risks. The Final Rule approving the 2011 Operations Plans would allocate ACE to each sector, which sets a limit on the amount of each the 14 groundfish stocks that each sector can catch, while minimizing regulatory discards, resulting in positive benefits to the allocated target species, non-allocated target species, and bycatch species. Sector members would be exempt from several restrictions of the FMP, however, each sector would primarily use trawl, gillnet, trap/pot, and hook and line gear and maintain traditional fishing practices which would have no greater impact on habitat, protected species, and bycatch species as compared to the Common Pool (Section 5.1). Implementation of the Final Rule would mitigate impacts of Amendment 13, FW 42, and Amendment 16 to the NE Multispecies FMP on human communities by conveying environmental, social, and economic benefits directly to sector members and thereby to the communities identified in Section 4.5, while at the same time meeting the conservation requirements of the FMP. Sectors have been in operation in the New England groundfish fishery since 2004; therefore, the effects on the human environment are not uncertain or involve unique or unknown risks.

11. *Is the proposed action, related to other actions with individually insignificant, but cumulatively significant impacts?*

Response: The CEA presented in Section 5.2 of this document considers the impacts of the Proposed Action in combination with relevant past, present, and reasonably foreseeable future actions and concludes that no significant cumulative impacts are expected from the implementation of the Proposed Action. Further, the Proposed Action would not have any significant impacts when considered individually or in conjunction with any of the other actions presented in Section 5.2 (fishing related and non-fishing related).

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 fishing operations of the Proposed Action would take place on ocean waters and would not affect any human communities on the adjacent shorelines. There are no known districts, sites, or highways in the area of the Proposed Action. 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 objects in the fishery area that is listed in the National Register of Historic Places are the wrecks of the steamship *Portland,* the schooners *Frank A. Palmer/Louise B. Crary* and *Paul Palmer,* and the eastern rig draggers *Joffre,* and *Edna G.* All of the wrecks are located 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 wrecks to avoid tangling their gear. Therefore, this action would not result in any adverse affects to these wrecks. Due to the minimal impact on the human environment, the sector Operations Plans would not adversely affect scientific, cultural, or historical resources.

13. *Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?*

Response: No non-indigenous species would be introduced during the Proposed Action because operation of the 19 sectors is confined to traditional fishing practices, and no non-indigenous species would be used or transported during the sectors' activities. Therefore, the Proposed Action would not be expected to result in the introduction or spread of a non-indigenous species.

14. *Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?*

Response: The NEFMC has authorized the formation of multiple sectors under Amendment 16 and FW 45 to the NE Multispecies FMP and has set forth criteria for establishing sectors in this action. The Proposed Action was initiated in response to these actions and does not set a precedent because it abides by the criteria set forth in Amendment 16 and FW 45. However, it should be noted that while Amendment 16 and FW 45established multiple sectors and the process of their allocation, each sector proposal and each Operations Plan and allocation is considered individually on its own merits and expected impacts, and includes a specified process for public comment and consideration. Further, each sector must submit their Operations Plan annually or biannually for approval. Therefore, the Proposed Action is not likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration.

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 not expected to threaten a violation of federal, state, or local law or requirements imposed for the protection of the environment. In addition to the harvest rules of each sector, sectors would comply with all local, regional, and national laws and permitting requirements.

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: The Proposed Action is not expected to result in cumulative adverse effects that could have a substantial effect on target or non-target species. As stated in Section 5.1, the impact on resources encompassing groundfish and other stocks is expected to be minimal.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting EA prepared for the approval of the 19 FY 2011 sector Operations Plans and associated exemptions from specific fisheries regulations, it is hereby determined that the approval of the 19 FY 2011 sector Operations Plans and associated exemptions from specific fisheries regulations, 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 necessary.

for Patricia Kurkul — 4/13/11

Patricia A. Kurkul — Date

Regional Administrator Northeast Region, NMFS

8.5 ADMINISTRATIVE PROCEDURE ACT (APA)

Section 553 of the APA establishes procedural requirements applicable to 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. At this time, no abridgement of the rulemaking process for this action is being requested and the proposed measures would be implemented in accordance with the requirements of the APA.

8.6 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. PRA for data collections relating to sectors have been considered and evaluated under Amendment 16 to the FMP and approved by the Office of Management and Budget (OMB) under OMB Control Number 0648-0605. This action relies upon the existing collections, including those approved by the OMB under Amendment 16, and does not propose to modify any existing collections or to add any new collections. Therefore, no review under the PRA is necessary for this action.

8.7 COASTAL ZONE MANAGEMENT ACT (CZMA)

Section 307(c)(1) of the CZMA requires that all Federal activities which affect any coastal use or resource be consistent with approved state coastal zone management programs (CZMP) to the maximum extent practicable. NMFS has reviewed the relevant enforceable policies of each coastal state in the NE region for this action and has determined that this action is incremental and repetitive, without any cumulative effects, and is consistent to the maximum extent practicable with the enforceable policies of the CZMP of the following states: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Pennsylvania, Maryland, Virginia, and North Carolina. NMFS finds this action to be consistent with the enforceable policies to manage, preserve, and protect the coastal natural resources, including fish and wildlife, and to provide recreational opportunities through public access to waters off the coastal areas. Pursuant to the general consistency determination provision codified at 15 CFR 930.36(c), NMFS sent a general consistency determination applying to the current Northeast Multispecies FMP, and all routine Federal actions carried out in accordance with the FMP, to

the following states: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Pennsylvania, Maryland, Virginia, and North Carolina on October 21, 2009.

8.8 INFORMATION QUALITY ACT (IQA)

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

The information presented in this document is helpful to the intended users (the affected public) by presenting a clear description of the purpose and need of the proposed action, the measures proposed, and the impacts of those measures. A discussion of the reasons for selecting the proposed action is included so that intended users may have a full understanding of the proposed action and its implications.

This document is the principal means by which the information contained herein is available to the public. The information provided in this document is based on the most recent available information from the relevant data sources. The development of this document and the decisions made by NMFS to propose this action are the result of a multi-stage public process.

The *Federal Register* notice that announces the proposed FY 2011 sector Operations Plans and contracts would be made available in printed publication and on the NMFS NE Regional Office website. Instructions for obtaining a copy of this EA are included in the *Federal Register* notice.

Integrity

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 NMFS 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 Act; and NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics.

Objectivity

For the purposes of the Pre-Dissemination Review, this EA is considered to be a "Natural Resource Plan." Accordingly, the document adheres to the published standards of the Magnuson-Stevens Act; the Operational Guidelines, Fishery Management Plan Process; the EFH Guidelines; the National Standard Guidelines; and NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the NEPA.

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 either assessments subject to peer-review through the

Stock Assessment Review Committee, or on updates of those assessments prepared by scientists of the Northeast Fisheries Science Center. Landing and revenue information is based on information collected through Vessel Trip Report and Commercial Dealer databases, as well as the Amendment 16 EIS and the GARM III report. These reports are developed using an approved, scientifically valid sampling process. In addition to these sources, additional information is presented that has been accepted and published in peer-reviewed journals or by scientific organizations. Original analyses in this EA build upon the analyses contained in the Amendment 16 EIS, and were prepared using data from accepted sources, and the analyses have been reviewed by NOAA.

Despite current data limitations, the measures proposed for this action were selected based upon the best scientific information available. The analyses conducted in support of the proposed action were mainly qualitative, and tier off analyses in the Amendment 16 EIS, which were conducted using information from the most recent complete fishing year at the time they were developed, through FY 2007. The data used in the analyses provide the best available information on the state of each species regulated under the FMP (i.e., GARM III, September 2008; and the DPWG 2009), species and EFH data from NOAA, and fishery landings through FY 2007. Specialists (including professional members of plan development teams, technical teams, committees, and Council staff) who worked with these data are familiar with the most current analytical techniques and with the available data and information relevant to the state of the regulated fisheries under the FMP, fishing techniques in the approved FY 2010 sectors, and the socio-economic impacts of the fisheries on impacted communities.

The policy choices are clearly articulated in Section 3 of this document, as the management alternatives considered in this action. The supporting science and analyses, upon which the policy choices are based, are summarized and described, or incorporated by reference, in Sections 4 and 5 of this EA. All supporting materials, information, data, and analyses within this document have been, to the maximum extent practicable, properly referenced according to commonly accepted standards for scientific literature to ensure transparency.

The review process used in preparation of this EA involves the Northeast Fisheries Science Center, the Northeast Regional Office, and NMFS Headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the action proposed in this EA and clearance of any rules prepared to implement resulting regulations is conducted by staff at NMFS Headquarters, the Department of Commerce, and the U.S. OMB.

8.9 REGULATORY FLEXIBILITY ACT (RFA)

Operations The RFA requires agencies to assess the impacts of their proposed regulations on small entities. The Regulatory Flexibility Act Analysis (RFAA) determines whether the proposed action would have a significant economic impact on a substantial number of small entities. The Small Business Administration (SBA) size standards define whether a business entity is small and, thus, eligible for Government programs and preferences reserved for "small business" concerns. Size standards have been established for all for-profit economic activities or industries in the North American Industry Classification System (NAICS). The SBA defines a small business in the commercial fishing and recreational fishing sector, as a firm with receipts (gross revenues) of up to $4 million.

This section provides an assessment and discussion of the potential economic impacts of the proposed action, as required of the RFA. The objective of the RFA is to require consideration of the capacity of those affected by regulations to bear the direct and indirect costs of regulation. The Final

Regulatory Flexibility Analysis (FRFA) must identify the number and types of businesses that would be regulated, indicate how many of these entities are small businesses, explain the expected economic impact of the regulation on small businesses, and describe any feasible alternatives that would minimize the economic impacts. The number of regulated entities for this action is 836, the number of permits enrolled in sectors that have requested additional exemptions. Each of these permits would be considered a small entity, based on the definition as stated above. The economic impact resulting from this action on these small entities is positive since the action would provide additional operational flexibility to vessels already participating in Northeast multispecies sectors for FY 2011. In addition, this action would further mitigate negative impacts from the implementation of Amendment 16, FW 44, and FW 45, which have placed additional effort restrictions on the groundfish fleet.

Description of the Reasons Why Action by Agency is Being Considered

The flexibility afforded sectors includes exemptions from certain specified regulations as well as the ability to request additional exemptions. Sector members no longer have groundfish catch limited by DAS allocations and are instead limited by their available ACE. In this manner, the economic incentive changes from maximizing the value of throughput of all species on a DAS to maximizing the value of the sector ACE, which places a premium on timing of landings to market conditions as well as changes in the selectivity and composition of species landed on fishing trips. Further description of the purpose and need for the proposed action is contained in Section 2.0 of this EA.

The Objectives and Legal Basis for the Proposed Action

The objective of the proposed action is to authorize the operations of 19 Operations Plan in FY 2011, and to allow the benefits of sector operations to accrue to 821 permits enrolled in sectors that have requested them and the New England communities where they dock and land. The legal basis for the proposed action is the Northeast Multispecies FMP and promulgating regulations at 50 CFR § 648.87.

Estimate of the Number of Small Entities

The SBA size standard for commercial fishing (NAICS code 114111) is $4 million in sales. Available data indicate that, based on 2005-2007 average conditions, median gross annual sales by commercial fishing vessels were just over $200,000, and no single fishing entity earned more than $2 million annually. Although we acknowledge there are likely to be entities that, based on rules of affiliation, would qualify as large business entities, due to lack of reliable ownership affiliation data we cannot apply the business size standard at this time. For this action, since available data are not adequate to identify affiliated vessels, each operating unit is considered a small entity for purposes of the RFA, and, therefore, there is no differential impact between small and large entities. The maximum number of entities that could be affected by the proposed exemptions is 836 permits - the number of vessels enrolled in the 19 FY 2011sectors that have approved an Operations Plan. Since individuals may withdraw from a sector at any time prior to the beginning of FY 2011, the number of permits participating in sectors on May 1, 2011, and the resulting sector ACE allocations, are likely to change. Additionally, NMFS is allowing a limited roster opening, through April 30, 2011, for new permit holders who acquired their permits through an ownership change that occurred after December 1, 2010.

Reporting, Recordkeeping and Other Compliance Requirements

The proposed action does not mandate any reporting requirements beyond those already previously required by the approved FY 2010 sector Operations Plans and current Federal regulations. Exemptions implemented through this action would be documented on a Letter of Authorization issued to each vessel participating in an approved sector. Sector vessels receiving an exemption from the gillnet

limit (up to 150 nets) would also be exempt from current tagging requirements and would instead be required to tag gillnets with one tag per net. Compliance with the tagging requirement would not necessarily require sector vessels to purchase additional net tags, as each vessel is already issued up to 150 tags. However, sector vessels that have not previously purchased the maximum number of gillnet tags may find it necessary to purchase additional tags to comply with this requirement at a cost of $1.20 per tag. The exemptions from the 20-day spawning block and the 120-day gillnet block would alleviate the reporting burden for sector vessels, because exemptions from these requirements eliminate the need to report the blocks to the NMFS Interactive Voice Response system. The GOM Sink Gillnet exemption does not involve additional reporting requirements. However, to fully utilize this exemption, sector vessels would need to purchase 6-inch mesh gillnet nets. At the time this FRFA was prepared, no cost information was available for a 6-inch mesh gillnet panel. However, the cost of a 6.5-inch mesh 300-foot gillnet panel, complete with floats and break-away links, was estimated at $310. The quantity of 6-inch mesh gillnets purchased by a vessel to participate in this program would depend on the vessel's gillnet designation (a Day gillnet vessel would have a net limit, as determined by the final rule for the FY 2010 supplemental rule) and the perceived economic benefits of utilizing the exemption, which may be based on market conditions.

Other exemptions implemented through this action involve no additional reporting requirements. Sector reporting and recordkeeping regulations do not exempt participants from State and Federal reporting and recordkeeping, but are mandated above and beyond current State and Federal requirements. A full list of compliance, recording, and recordkeeping requirements can be found in the final rule implementing Amendment 16 (April 9, 2010; 75 FR 18262) each approved FY 2010 sector Operations Plan and addenda, and in the draft FY 2011 sector Operations Plans.

Duplication, Overlap or Conflict with other Federal Rules

The proposed action is authorized in Amendment 16 to the Northeast Multispecies FMP. It does not duplicate, overlap, or conflict with other Federal rules.

Alternatives which Minimize any Significant Economic Impact of Proposed Action on Small Entities

The proposed action would create a positive economic impact for the participating sector vessels because it would mitigate the impacts from restrictive management measures implemented under Amendment 16. Little quantitative data on the precise economic impacts is available because sector management is relatively new to New England groundfish management. It is anticipated that switching from effort controls of the current management regime to operating under a sector ACE, Sector members would remain economically viable while adjusting to changing economic and fishing conditions. Thus, the proposed action provides benefits to sector members that they would not have under the No Action Alternative.

Economic Impacts on Small Entities Resulting from Proposed Action

The EIS for Amendment 16 compares economic impacts of sector vessels with Common Pool vessels and analyzes costs and benefits of the universal exemptions. The final rule for the approval of the FY 2010 sector Operations Plans and contracts (75 FR 18113, April 9, 2010) and its accompanying EAs discussed the economic impacts of the exemptions requested by sectors. The final rule for supplemental sector rule (75 FR 80720, December 23, 2010) and its accompanying supplemental EA discussed the impacts of additional exemptions requested by sectors. The final rule approving FY 2011 sector operations and this EA discuss the economic impacts of requested FY 2011 exemptions.

All exemptions requested by the approved FY 2011 sectors are requested to generate positive social and economic effects for sector members and ports.

Exemption from the Day gillnet 120-day block out of the fishery requirement was requested by the GB Cod Fixed Gear Sector; the Northeast Coastal Communities Sector; Northeast Fishery Sectors III, V-VIII, and X-XIII; the Port Clyde Community Groundfish Sector; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector. Existing regulations require that vessels using gillnet gear remove all gear from the water for 120 days per year. Since the time out from fishing is up to the vessel owner to decide (with some restrictions), many affected vessel owners have purchased more than one vessel such that one may be used while the other is taking its 120-day block out of the groundfish fishery, to provide for sustained fishing income. Acquiring a second vessel adds the expense of outfitting another vessel with gear and maintaining that vessel. The exemption from the 120-day block allows sector members to realize the cost savings associated with retiring the redundant vessel. Furthermore, this exemption provides additional flexibility to sector vessels to maximize the utility of other sector-specific and universal exemptions, such as the exemption from the GB Seasonal Closure in May and portions of the GOM Rolling Closure Areas.

The GB Cod Fixed Gear Sector; Northeast Fishery Sectors III, VI-VIII, and X-XII; the Port Clyde Community Groundfish Sector; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector requested exemption from the prohibition on a vessel hauling gear that was set by another vessel. The community fixed-gear exemption allows sector vessels in the Day gillnet category to effectively pool gillnet gear that may be hauled or set by sector members. This provision reduces the total amount of gear that would have to be purchased and maintained by participating sector members, resulting in some uncertain level of cost savings, along with a possible reduction in total gear fished.

The GB Cod Fixed Gear Sector; Northeast Fishery Sectors III, V-VIII, and X-XIII; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector was requested to be exempt from the limitation on the number of gillnets that may be hauled on GB when fishing under a groundfish/monkfish DAS. Approving this exemption increases operational flexibility and provide an opportunity for a substantial portion of the fleet to improve vessel profitability.

The GB Cod Fixed Gear Sector; Northeast Fishery Sectors III, V-VIII, and X-XIII; the Port Clyde Community Groundfish Sector; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector requested an exemption from the limit on the number of nets (not to exceed 150) that may be deployed by Day gillnet vessels. This exemption provides greater flexibility to deploy fishing gear by participating sector members according to operational and market needs.

The GB Cod Fixed Gear Sector; the Northeast Coastal Communities Sector; Northeast Fishery Sectors II-III and V-XIII; the Port Clyde Community Groundfish Sector; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector requested an exemption from the 20-day spawning block out of the fishery requirement. Exemption from the 20-day spawning block improves flexibility to match trip planning decisions to existing fishing and market conditions. Although vessel owners currently have the flexibility to schedule their 20-day block according to business needs (within a 3-month window) and may use that opportunity to perform routine or scheduled maintenance, vessel owners may prefer to schedule these activities at other times of the year, or may have unexpected repairs. Removing this requirement may not have a significant impact, but would still provide vessel owners with greater opportunity to make more efficient use of their vessel.

The GB Cod Fixed Gear Sector; the Northeast Coastal Communities Sector; Northeast Fishery Sectors III, VI-VIII, and X-XII; the Port Clyde Community Groundfish Sector; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector requested exemption from the number of hooks that may be fished. These exemptions provide vessel owners in these sectors with the flexibility to adapt the number

of hooks fished to existing fishing and market conditions. This exemption also provides an opportunity to improve vessel profitability. The exemption from the number of hooks that may be fished has been granted to the GB Cod Hook Sector every year since FY 2004, and was granted to the GB Cod Fixed Gear Sector for FY 2010. Approving this exemption for these additional sectors extends the potential economic benefits to more vessels in other sectors.

The GB Cod Fixed Gear Sector; the Maine Permit Bank Sector; all 12 Northeast Fishery Sectors; the Port Clyde Community Groundfish Sector; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector requested an exemption from regulations that currently limit leasing of DAS to vessels within specified length and horsepower restrictions. Current restrictions create a system in which a small vessel may lease DAS from virtually any other vessel, but is limited in the number of vessels that small vessels may lease to. The opposite is true for larger vessels. Exemption from these restrictions allows greater flexibility to lease DAS between vessels of different sizes and may be expected to expand the market of potential lessees for some vessels. The efficiency gains of this exemption for a requesting sector would be limited because the exemption would only apply to leases within and between sectors requesting this exemption. Since DAS would not be required while fishing for groundfish, the economic importance of this exemption are associated with the need to use groundfish DAS when fishing in other fisheries, for example, monkfish.

The GB Cod Fixed Gear Sector requested an exemption from the prohibition on the use of squid or mackerel as bait, or possessing squid or mackerel on board vessels, when participating in the CA I Hook Gear Haddock SAP. Providing relief from the bait restrictions provides participating sector vessels with greater operational flexibility to choose the bait that best meets fishing circumstances. Participating vessels are also able to use the bait of their choice, depending on expected catch, as well as the cost of bait.

The exemption from sink gillnet mesh size restriction in the GOM from January through April was requested by the GB Cod Fixed Gear Sector; Northeast Fishery Sectors III, VI-VIII, and X-XII; the Port Clyde Community Groundfish Sector; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector. The exemption allows the use of 6-inch (15.24-cm) mesh gillnets in the GOM RMA from January 1, 2012 through April 30, 2012. This exemption provides participating sector vessels an opportunity to potentially retain more GOM haddock, a healthy stock, and share in the benefits from the stock recovery. To utilize this exemption, it would be necessary for participating sector vessels to purchase 6-inch (15.24-cm) mesh gillnets. However, it would allow a greater catch of haddock, which may increase revenues for gillnet fishermen and the ports where they land their fish, particularly if participating vessels are able to change fishing behavior to selectively target this stock and minimize catch of other allocated target stocks.

The GB Cod Fixed Gear Sector, and Northeast Fishery Sectors III, VI-VIII, and X requested an exemption from sink gillnet mesh size restriction in the GOM in May, thereby extending the proposed GOM Sink Gillnet Mesh Exemption. This ancillary exemption to the GOM Sink Gillnet Mesh Exemption provides participating sector vessels an opportunity to achieve higher profitability. Preliminary estimates indicate that about half of the available GOM haddock ACE will not be taken during FY 2010. This does not necessarily mean, however, that a larger share of the GOM haddock ACE will not be taken, as the FY has another five months.

The GB Cod Fixed Gear Sector; and Northeast Fishery Sectors XI-XIII requested an exemption from the regulations that currently prohibit sector vessels from discarding any legal-size regulated species allocated to sectors. Sector vessels have had to retain legal-size unmarketable fish, which requires them to store this fish on the vessel while at sea, in some cases in large quantities in totes on deck, creating potential unsafe work conditions. In addition, sector vessels have had to determine a method of disposal

for any unmarketable fish landed. Anecdotal information indicates that some fish dealers dispose of unmarketable fish for sector vessels as a courtesy; however, the scope of this occurrence and any operational costs incurred by the dealer or vessels is unknown. A partial exemption from this regulation that would allow sector vessels to discard unmarketable fish provides sector vessels more operational flexibility and improves safety conditions at sea. It also relieves the burden, if any, on sector vessels and their dealers to find a way to dispose of the unmarketable fish once landed.

The GB Cod Fixed Gear Sector and the Northeast Coastal Communities Sector requested an exemption from the requirement that the sector manager submit daily catch reports for the CA I Hook Gear Haddock SAP, proposing instead that members submit daily catch reports directly to NMFS. Eliminating the daily catch reporting by sector managers provides some administrative relief to the sector. Reporting burden of individual participating vessels remains unchanged, as they would merely change the recipient of their current daily report. This exemption may result in some cost savings to the operation of any given sector and therefore reduce the transactions costs to all sector members, not only to the individual vessels or sector members that participate in the SAP.

Northeast Fishery Sectors II and V, the Sustainable Harvest Sectors 1 and 3, and the Tri-State Sector requested an exemption from the trawl gear requirements in the U.S./Canada Management Area. This exemption allows the use of any groundfish trawl gear, provided the gear conforms to regulatory requirements for using trawl gear to fish for groundfish in the GB RMA. This exemption results in greater operational flexibility to participating sector vessels, as these vessels would be able to better harvest allocation of ACE. Whether this would result in increased profitability depends on the ability to achieve cost efficiencies by reducing the amount and type of gear necessary to prosecute the groundfish fishery in the U.S./Canada Management Area and elsewhere, and/or the ability to reduce operating costs if the same amount of ACE can be taken with less fishing time.

The GB Cod Fixed Gear Sector; the Northeast Coastal Communities Sector; Northeast Fishery Sectors IV, VI, and X; the Port Clyde Community Groundfish Sector, and the Tri-State Sector requested an exemption from the requirement to power a VMS while at the dock. Maintaining a VMS signal while at the dock, or tied to a mooring, requires constant power be delivered to the vessel or constant use of onboard generators at all times. These requirements do increase the cost of operating a fishing vessel, whether the vessel is fishing or not. This exemption provides the opportunity to reduce the overhead costs of maintaining a fishing operation and would result in some improved profitability.

The GB Cod Fixed Gear Sector; the Northeast Coastal Communities Sector; Northeast Fishery Sectors III and V-XIII; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector requested partial exemptions from DSM requirements. NMFS is granting exemptions to DSM requirements for Handgear A permitted sector vessels, for vessels fishing west of 72°30’ W. long., and an exemption from DSM requirements for gillnet and trawl vessels on concurrent multispecies and monkfish DAS when using 10-inch (24.4-cm) or greater mesh fishing in the monkfish SFMA. The cost of DSM for FY 2010 has been subsidized by the NMFS. Based on preliminary data, the overall average cost associated with DSM averaged about $0.02 per landed pound of fish. This estimate is based on an agreed formula between the NMFS and sector managers to calculate reimbursement for DSM services, which includes a per-pound rate of $0.015, $33 per trip monitored, and $27 per trip requiring a roving monitor. The estimated cost per pound landed for monitored trips was based on invoices received by sectors from May-August 2010. However, not all sectors had sent in invoices as of the date the average cost reported herein were estimated, so the actual costs may differ by sector and may be substantially different once the FY has been completed. Using methods similar to that used to estimate expected revenues for the FY 2011 and FY 2012 ACLs (i.e., based on a linear projection of average ACL use rates and average discard rates), the estimated cost for DSM for FY 2010 would be $616,000, or 0.8 percent of estimated FY 2010 revenues. Through Amendment 16, DSM was scheduled to be reduced to 20 percent during FY 2011, and the

estimated monitoring cost would be $281,000, or 0.4 percent of the estimated FY 2011 groundfish revenues, however, FW 45, alters the coverage level. NMFS anticipated that 62 percent of trips will receive coverage in FY 2011. The actual overall average DSM cost per pound landed will be zero for any lease-only sectors, and may be higher for sectors with below average landings per trip, since the trip cost gets spread out over fewer pounds. Similarly, the average cost per pound may be lower for sectors with higher than average landings per trip. Granting these exemptions will alleviate all upfront costs associated with this program, as well as the unreimbursed costs for monitoring of other stocks, and therefore provide the opportunity to reduce the overhead costs of operating a fishing vessel, which may result in some improved profitability.

There were several exemptions requested by sectors that NMFS has not approved for FY 2011.

The GB Cod Fixed Gear Sector, the Northeast Coastal Communities Sector, Northeast Fishery Sectors II and III, the Port Clyde Community Groundfish Sector, and Sustainable Harvest Sectors 1 and 3 requested access to specific blocks within the GOM Rolling Closure Areas, specifically blocks 138 and 139 during May and/or access to blocks 139, 145, and 146 during June. These closure areas were selected primarily to reduce fishing mortality on GOM cod at a time of year where catch rates had been observed to be high. However, they also serve to protect spawning fish as well as protected species. Given higher catch per unit effort, sector vessels would have been able harvest available ACE at a lower cost, since less fishing time would be required to harvest the same amount of available ACE. Whether this would have resulted in higher profitability is uncertain, since prices during May and June tend to be lower due to larger supplies and somewhat lower quality. During FY 2010 average cod prices have been above their historic average. The price effect of increased supplies of cod entering the market early in the FY is uncertain, but could have offset some of the cost savings associated with being able to obtain higher catch rates.

Northeast Fishery Sectors V-X and XIII requested an exemption from the prohibition on pair trawling. Pair trawling was originally prohibited because of its higher catch rates and impacts to then declining cod and haddock stocks. Providing an exemption allowing for pair trawling would have provided participating sector vessels with greater operational flexibility. However, the high catch rates that resulted from this fishing practice while under DAS management may not have been as advantageous under sector management unless the practice could be used to selectively target stocks for which a sector has a comparatively large ACE. That is, characterizing the use of pair trawling as highly efficient may be accurate from a technical standpoint, but may not necessarily be economically efficient unless catch rates of stocks with limiting ACE can be reduced or eliminated.

The GB Cod Fixed Gear Sector and the Northeast Coastal Communities Sector requested an exemption from the minimum hook size. This exemption may have been expected to improve operational flexibility for participating sector vessels. Whether the ability to use alternative hook sizes would translate into improved profitability is uncertain, particularly if the larger hook does select for larger fish, which do tend to fetch a premium price. Nevertheless, the exemption would have improved flexibility and may have allowed delivery of a broader range of fish sizes to final markets.

The GB Cod Fixed Gear Sector and Northeast Fishery Sectors II, V-X, and XIII requested an exemption from the trawl minimum mesh size when targeting redfish, a healthy stock. The 6.5-inch (16.51-cm) mesh size has been argued to be too large to catch Acadian redfish in quantities that would have permitted development of a targeted fishery. The proposed exemption would have offered participating sector vessels greater operational flexibility. These sectors proposed that the fishery using this exemption would have been monitored using 100 percent observer coverage, and would have required daily catch reporting to the sector manager. Whether the potential improved catch rates would offset these added costs is uncertain. As long as the at-sea monitoring or observer costs are being

subsidized, the only added cost may have been the requirement for daily reporting by the sector manager. The extent to which observer costs would continue to be subsidized is unknown, but may have been needed to be taken into account when assessing the potential profitability that developing a targeted redfish fishery may provide.

Northeast Fishery Sectors II, V-X, and XIII requested an exemption from gear restrictions in the U.S./Canada Management Area, and would have allowed for the use of the 250 X 40-cm Eliminator Trawl™. This exemption would have allowed the use of a configuration of an eliminator trawl that differs from what is currently approved for specific areas, including the U.S./Canada Management Area. Allowing this exemption would have offered greater operational flexibility, but would still be limited to the areas and conditions under which the current eliminator or Ruhle trawl has already been approved. While this net may be used in open areas, the use of this net is prohibited in the Special Management Program, including the SAPs, and Gear Restricted Areas. This exemption was requested because the specification for approved gear types for these areas is too large to be utilized by some of the participating sector vessels. The extent to which this exemption may have improved economic profitability is uncertain, but would have been limited to vessels that have already purchased the gear, would have been able to re-rig existing gear at low cost, and would have accessed the areas where the Ruhle trawl is already approved.

The GB Cod Fixed Gear Sector; the Northeast Coastal Communities Sector; Northeast Fishery Sectors II-III and V-XIII; Sustainable Harvest Sectors 1 and 3; and the Tri-State Sector requested complete or additional partial exemptions from DSM requirements. As stated above, the cost of DSM for FY 2010 has been subsidized by the NMFS. Based on preliminary data, the overall average cost associated with DSM averaged about $0.02 per landed pound of fish. This estimate is based on an agreed formula between the NMFS and sector managers to calculate reimbursement for DSM services, which includes a per-pound rate of $0.015, $33 per trip monitored, and $27 per trip requiring a roving monitor. The estimated cost per pound landed for monitored trips was based on invoices received by sectors from May-August 2010. However, not all sectors had sent in invoices as of the date the average cost reported herein were estimated, so the actual costs may differ by sector and may be substantially different once the FY has been completed. Using methods similar to that used to estimate expected revenues for the FY 2011 and FY 2012 ACLs (i.e., based on a linear projection of average ACL use rates and average discard rates), the estimated cost for DSM for FY 2010 would be $616,000, or 0.8 percent of estimated FY 2010 revenues. Through Amendment 16, DSM was scheduled to be reduced to 20 percent during FY 2011, and the estimated monitoring cost would be $281,000, or 0.4 percent of the estimated FY 2011 groundfish revenues, however, FW 45. The actual overall average DSM cost per pound landed will be zero for any lease-only sectors, and may have been higher for sectors with below average landings per trip, since the trip cost gets spread out over fewer pounds. Similarly, the average cost per pound may be lower for sectors with higher than average landings per trip. Granting all or a portion of these exemptions would have alleviated additional upfront costs associated with this program, as well as the unreimbursed costs for monitoring of other stocks, and therefore would have provided additional opportunity to reduce the overhead costs of operating a fishing vessel, which may have resulted in some additional improved profitability.

Over the past decade, there has been a significant amount of consolidation in this fishery in response to management measures to end overfishing of, and to rebuild, groundfish stocks. The recent implementation of ACLs and AMs, and the expanded use of sectors under Amendment 16 have affected fishing patterns in ways cannot yet be quantified and analyzed. Sector measures were intended to provide a mechanism for vessels to pool harvesting resources and consolidate operations in fewer vessels, if desired, and to provide a mechanism for capacity reduction through consolidation. Reasons why fewer vessels have fished thus far this year, in comparison to FY 2009, may be related to owners with multiple vessels fishing fewer vessels, or vessel owners or sectors using quota differently and waiting to fish later

in the fishing year to maximize revenue in response to some of the efficiencies gained through the implementation of sector measures in 2010. It is also likely that some vessels that have not landed groundfish have received revenue from leasing their groundfish allocation or have been fishing in other fisheries. Thus, fewer vessels are actively fishing for and landing regulated species and ocean pout stocks, with 10 percent of the fishing vessels earning more than half of the revenues from such stocks since 2005, leading to a seemingly continuing trend of consolidation in the fishery. However, as alluded to above, this trend began before the implementation and expansion of the sector program, and based on limited data available to date, the trend is not significantly out of proportion to fishing years prior to the implementation of Amendment 16. Further, most proposed FY 2011 sectors are anticipating no further consolidation than previously occurred through FY 2010. Five sectors have reported that they anticipate a smaller percentage of permits to harvest groundfish for FY 2011 as compared to FY 2010. Based upon concerns over consolidation raised by the public during the development of Amendment 16, the Council is currently working on a white paper regarding fleet diversity and accumulation limits, and has agreed to develop an amendment to the FMP to address concerns identified.

Other Significant Alternatives

There were several exemptions requested by the sectors for FY 2011 that the regulations implemented by Amendment 16 prohibited NMFS from considering, including: Regulations that fall outside the Northeast multispecies regulations, and reporting requirements (including at-sea and dockside monitoring). In addition, NMFS received requests for two FY 2010 exemptions that NMFS subsequently disapproved in the final rule implementing FY 2010 sector Operations Plans, because of serious enforcement concerns with that could result from granting the requested exemptions. However, no new data or information has become available that would convince NMFS to reconsider the disapproved exemptions further in FY 2011.

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