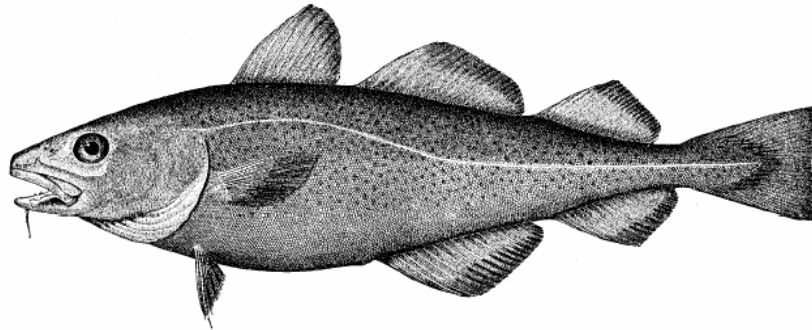


**Proposed Agency Action:  
Approval of the Georges Bank Cod  
Hook Sector Operations Plan**

**Type of statement:  
Final Environmental Assessment**  
Including Regulatory Impact Review



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&

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## **1.0 INTRODUCTION**

The final rule implementing Amendment 13 to the Northeast (NE) Multispecies Fishery Management Plan (FMP) (69 CFR 22906, April 27, 2004) specified a process for the formation of sectors within the NE multispecies fishery and the allocation of TAC for a specific groundfish species (or Days-at-Sea), implemented restrictions that apply to all sectors, authorized the Georges Bank (GB) Cod Hook Sector (Sector), established the GB Cod Hook Sector Area (Sector Area), and specified a formula for the allocation of GB cod TAC to the Sector. While Amendment 13 to the NE Multispecies FMP authorized the Sector, in order for GB cod to be allocated to the Sector and the Sector authorized to fish, the Sector must submit an Operations Plan and Sector Contract to the Regional Administrator annually for approval. The Operations Plan and Sector Contract must contain certain elements, including a contract signed by all Sector participants and a plan containing the management rules that the Sector participants agree to abide by in order to avoid exceeding the allocated TAC. An analysis of the impacts of the Sector's proposed operation and harvesting rules may be required in order to comply with the National Environmental Policy Act.

The 2007 Operations Plan does not implement significant changes to the approved 2006 GB Hook Sector Operations Plan. Only the number of participating vessels is expected to change: 37 participants in 2006 vs. 35 participants in 2007.

### **1.1 GEORGES BANK COD HOOK SECTOR OPERATIONS PLAN REQUEST**

The Cape Cod Commercial Hook Fishermen's Association requested approval and implementation of the Georges Bank Cod Hook Sector Allocation Operations Plan (Operations Plan) during the 2007-08 fishing year. The Operations Plan has previously been approved for fishing years 2004-2005 and 2005-2006 and 2006-2007. The Operations Plan for 2006-2007 provides the specific details for how the Sector would function in the 2007 fishing year and is required for Sector approval.

The Sector is a group of self-selecting fishermen coming together voluntarily and cooperatively for the purposes of efficiently harvesting an annual allocation of Georges Bank cod. The Sector would operate under a hard Total Allowable Catch (TAC) of Georges Bank cod to meet the overfishing mandates of the Magnuson-Stevens Fishery Conservation and Management Act of 1996 (Magnuson Act). Furthermore, the Sector would innovate novel and highly adaptive means of local decision-making, self-monitoring, and enforcement that would serve as a model for the future of sustainable fisheries in New England. Implementation of the Operations Plan would mitigate harmful economic impacts of Framework 42 to the NE Multispecies FMP by conveying environmental, social and economic benefits directly to the Sector members.

#### **Member Requirements and Sector Rules**

To qualify for participation in the Sector, members must possess a valid limited access NE multispecies permit and an allocation of days-at-sea (DAS) under Amendment 13. Sector members must have documented landings of Georges Bank cod with hook gear during the qualifying period in order to be eligible for participation in the Sector. Under Amendment 13, the New England Fishery Management Council (NEFMC) established the Sector qualifying period according to baseline years 1996-2001 that were used to allocate DAS. Sector members will be required to declare their intention to join the Sector to the National Marine Fisheries Service

(NMFS) Regional Administrator (RA) on an annual basis. Sector members would be legally bound by a Membership Agreement that outlines expectations of members as well as a schedule of penalties for violations of Sector rules. The vast majority of hook fishermen on GB land their catch on Cape Cod.

The Operations Plan, including the specific rules, are attached as Appendix I. The Sector would operate under a hard TAC, assuring that the Sector would not contribute to overfishing of the GB cod stock. Real-time landings data would be employed to ensure compliance with the hard TAC. Once declared into the Sector, members would fish for groundfish solely within the Sector Area (Figures 5a and 5b). Furthermore, Sector members must utilize only hook gear to target groundfish. Sector members would retain all legal sized GB cod to minimize bycatch of the target species. The Sector Manager (Manager) would oversee day-to-day operations of the Sector. The quota would be divided up by months, ensuring that there would be an opportunity for Sector members to fish each month of the year. Monthly distribution of the quota serves to maintain equity between vessels within the sector that have traditionally fished during different times of the year. The Sector would act as a model for the future of community and quota based management regimes in New England.

### **Georges Bank Cod Allocation**

The cod TAC for the Sector would be based upon the number of FY 2007 Sector participants and their historic landings of GB cod. Based upon the 35 prospective members of the Sector, the Sector TAC of GB cod for fishing year 2007 would be 798 mt (9.48 percent of the fishery-wide U.S. portion of the GB cod target TAC of 8,416 mt).

## **1.2 PURPOSE AND GOALS**

### **1.2.1 PURPOSE AND NEED FOR THE PROPOSED ACTION (SECTOR ALLOCATION)**

The need for this action is to provide an opportunity to mitigate disproportionate economic impacts to hook vessels predicted to result from effort controls implemented through Amendment 13 and subsequent framework adjustments to the NE Multispecies FMP. The purpose of the action is to approve an Operations Plan and an allocation of GB cod for the Sector, the process for which was specified and authorized as part of Amendment 13, that would allow Sector members to alleviate social and economic hardships while meeting biological objectives through management rules that the Sector participants agree to abide by.

Approval and implementation of the Operations Plan would be the difference between financial viability and business failure for GB hook fishermen. Amendment 13 reduced the GB cod trip limit from 2,000 to 1,000 pounds per day and reduced the maximum number of hooks that a hook vessel can set and haul on a trip at 3,600. GB hook fishermen are highly reliant on GB cod for their economic survival. This reduction in hooks, initially instituted as part of the Interim Rule, further limited the efficiency and applicability of hook gear on GB and further disadvantaged hook vessels economically. The Operations Plan presents a vehicle to alleviate Sector vessels from input control measures that were made redundant when a hard TAC of GB cod was allocated to the Sector. Over the past three years, the Sector has demonstrated the ability of fishermen to come together cooperatively to alleviate the disproportionate economic hardship brought upon them by Amendment 13 and subsequent framework adjustments. Specifically during the Sector's lifetime (all three years of operation), its members demonstrated their ability to end their contribution to overfishing on GB cod by not exceeding their TAC. In addition, the

Sector has demonstrated their outreach and campaigning ability by working with the local fixed gear fleet to form the Georges Bank Cod Fixed Gear Sector.

## **1.2.2 GOALS OF THE PROPOSED ACTION**

For the purposes of developing Amendment 13, the NEFMC developed a set of goals and objectives. The Sector aims to achieve many of the goals and objectives set forth for the Amendment. Some of the most applicable goals and objectives for both the Amendment and Sector are listed below. Goals and objectives of Amendment 13 are excerpted from the Amendment 13 FSEIS Section 2.3:

### **Amendment 13 Goals:**

**Goal 1:** Consistent with the National Standards and other required provisions of the Magnuson Act and other applicable law, manage the northeast multispecies complex at sustainable levels.

**Goal 2:** Create a management system so that fleet capacity will be commensurate with resource status so as to achieve goals of economic efficiency and biological conservation and that encourages diversity within the fishery.

**Goal 3:** Maintain a directed commercial and recreational fishery for northeast multispecies.

**Goal 4:** Minimize, to the extent practicable, adverse impacts on fishing communities and shoreside infrastructure.

**Goal 6:** To promote stewardship within the fishery.

### **Amendment 13 Objectives:**

**Objective 1:** Achieve, on a continuing basis, optimum yield (OY) for the U.S. fishing industry.

**Objective 3:** Adopt fishery management measures that constrain fishing mortality to levels that are compliant with the Sustainable Fisheries Act.

**Objective 4:** Implement rebuilding schedules for overfished stocks, and prevent overfishing.

**Objective 7:** To the extent possible, maintain a diverse groundfish fishery, including different gear types, vessel sizes, geographic locations, and levels of participation.

**Objective 9:** Adopt measures consistent with the habitat provisions of the Magnuson Act, including identification of essential fish habitat (EFH) and minimizing impacts on habitat to the extent practicable.

**Objective 10:** Identify and minimize bycatch, which include regulatory discards, to the extent practicable, and to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

### **Sector Goals:**

**Goal 1:** Sustain a viable hook fishery on Georges Bank.

**Goal 2:** Sustain a viable commercial groundfish fleet in Chatham/Harwichport, Massachusetts.

**Goal 3:** Assure that the hook fleet will not overfish the GB cod stock through utilization of a hard TAC.

**Goal 4:** Create new opportunities for the GB hook fleet, such as opportunities to pursue healthy or rebuilding Groundfish stocks instead of GB cod

**Goal 5:** Retain access for small boat fishermen on GB.

**Goal 6:** Promote stewardship of GB cod resource.

**Goal 7:** Implement Community Based Management in New England.

**Goal 8:** Create a working model for future development, submission and implementation of other sectors in the New England groundfish fishery

The Sector is an example of fishermen coming together to create a management regime that takes into account the needs of hook fishermen on Georges Bank. Input control management measures have diminished the hook fleet in the Gulf of Maine and have severely undermined the ability of the GB hook fleet to remain economically viable. The Sector would allow the GB hook fleet to survive and prosper as stocks rebuild. In addition, it provides a model for other New England day boat fleets that are looking for alternative management options. Traditionally, fishermen have fought against more restrictive management prescriptions. The Sector, on the other hand, is an example of responsible fishermen showing their commitment to sustainability in the fishery by voluntarily accepting a hard TAC and other intensive management measures. The Sector represents a heretofore unique opportunity for fishermen to lead the way in promoting conservation and stewardship of the resources they depend on.

### **1.3 BACKGROUND – REGULATORY ENVIRONMENT**

#### **Brief History of Management Actions**

The NE Multispecies FMP was adopted in 1986 to manage key groundfish stocks from Maine to Cape Hatteras. For the next decade, groundfishermen in New England operated under a regime that failed to achieve an effective level of management. The Magnuson Act was amended with the adoption of the Sustainable Fisheries Act (SFA) in 1996. Through the SFA, standards for effective management were set even higher by placing new demands on FMPs to reduce bycatch, identify and protect EFH, and minimize adverse effects of fishing on EFH to the extent practicable. The SFA also initiated new National Standards in the Magnuson Act that emphasized minimizing impacts to fishing communities, improving safety at sea, significantly reducing bycatch and improving the collection and use of fishery and biological data.

Later that year, NMFS implemented Amendment 7 which included a multitude of effort reductions, area closures, and rebuilding programs for many overfished species (including GB cod) based primarily on DAS controls, area closures, and minimum mesh size. In addition the Amendment created a program for reviewing the management measures annually and making changes to the regulations through the framework adjustment process to insure that plan goals would be met.

Amendment 9, adopted in 1999, had a significant impact on the fishery by establishing a new definition of “overfishing” and setting the OY for twelve groundfish species to bring the plan into complete compliance with the SFA. However, according to a 2000 ruling in *American Oceans Campaign et al. v. Daley et al.* [Civil Action No. 99-982(GK)], EFH considerations continued to be inadequate in fishery management plans. The U.S. District Court for the District of Columbia found that the agency’s decisions on the subject EFH amendments were in accordance with the Magnuson Act, but found that the EAs for the Councils’ amendments were inadequate and in violation of NEPA. The court ordered NMFS to complete a new and thorough NEPA analysis for each EFH amendment named in the suit. Among other things, Amendments 11 and 12 addressed these SFA requirements for designating EFH for all managed species.

#### **Amendment 13**

##### **Conservation Law Foundation et al. v. Evans et al.**

In December 2001, Conservation Law Foundation and other organizations successfully filed suit against NMFS alleging that the rebuilding plans the NMFS implemented were not consistent with

Amendment 9 overfishing definitions (Conservation Law Foundation et al. v. Evans et al.). Additionally, they charged that there had been a consistent failure in management plans to assess bycatch reporting and establish measures to minimize bycatch and bycatch mortality (when bycatch is unavoidable). After a long series of negotiations among various parties, interim measures were adopted by the court and NMFS was instructed to submit a management plan to comply with the law. The response to this is Amendment 13, which addresses stock rebuilding issues, greatly reduce fishing effort and capacity in the multispecies fishery and implements additional measures to specifically address habitat protection (NEFMC, Am. 13 FSEIS Section 2.1).

Excerpts from the Amendment 13 Final Supplemental Environmental Impact Statement (FSEIS) prepared by the NEFMC describe the benefits of a sector allocation to the GB hook fleet with the following characterizations:

The creation of a voluntary sector for longline/hook and gillnet vessels on Georges Bank provides an opportunity for vessels to mitigate the impacts of the management alternatives. By organizing into a cooperative, vessels may be able to develop more efficient ways to harvest groundfish and minimize the inefficiencies that result from the regulations. While it is not possible to estimate the economic impacts of a sector until the actual members are known, the pool of members will probably be the vessels that have used longline or gillnet gear to fish on GB in the past. For fishing years 1996 through 2000, 182 vessels reported using longline gear to catch GB cod, and 294 vessels reported using gillnet gear. Some vessels used both gear – these two numbers represent 488 individual vessels. For fishing year 2001, there were 85 gillnet vessels in the GB cod fishery and 32 vessels that used hook gear. Gillnet vessels landed 14 percent of the GB cod in fishing year 2001, and hook vessels landed 10 percent of the GB cod (see Appendix VI). Gillnet vessels harvested 19 percent of the GB cod landed in fishing year 2000, while hook vessels harvested 9 percent.... About 86 percent of the GB cod landed from 1996 through 2000 by these two gears was landed in Chatham/Harwichport, MA, suggesting that this community is the one most likely to benefit if vessels choose to participate in this sector. Another 10 percent of GB cod was landed in Gloucester, MA by these two gear types.” (NEFMC, Am 13 FSEIS Section 5.4.9.3.1)

Amendment 13 was developed over a four-year period to meet the Magnuson Act requirement to adopt rebuilding programs for stocks that are overfished and to end overfishing. Amendment 13 also brought the FMP into compliance with other provisions of the Magnuson Act. Subsequent to the implementation of Amendment 13, Framework Adjustment 40A (FW 40A) provided opportunities to target healthy stocks, Framework Adjustment 40B (FW 40B) improved the effectiveness of the effort control program, and Framework Adjustment 41 (FW 41) expanded the vessels eligible to participate in a Special Access Program (SAP) that targets GB haddock (NEFMC, FW 42 DEA Section 3.3.1).

### **Framework Adjustments**

The NE Multispecies FMP has been subject to many additional changes since its inception. Besides the 11 amendments implemented prior to development of Amendment 13, the NE Multispecies FMP has been altered through framework adjustments 30 times since 1994.

The Council has held four annual reviews and made eight adjustments to the FMP to address Amendment 7 rebuilding needs (Frameworks 20, 24, 25, 26, 27, 30 and 33). In 1999, the Council submitted Framework 27 as the primary annual adjustment framework. At the final framework meeting on January 27-28, the Council focused on the finalizing the severe restrictions necessary



to achieve the plan objectives for Gulf of Maine (GOM) cod and was unable to complete development of the measures needed for GB cod. It followed immediately with the development of Framework 30 to address GB cod, which was submitted to NMFS on April 30. Both Frameworks 27 and 30 contained trip limits for GOM and GB cod. In both cases, the Regional Administrator was authorized to reduce the trip limit when 75 percent of the target TAC for each stock was reached. On May 28, 1999, the Regional Administrator reduced the GOM cod limit implemented on May 1, 1999 of 200 pounds per day to 30 pounds per day, just three weeks into the fishing year. However, even before the trip limit was reduced, fishermen reported excessive discards of cod as seasonal closures ended.

On May 28, 1999, responding to widespread reports from the industry about the levels of cod discards in the western Gulf of Maine, the Council requested that the Secretary of Commerce increase the trip limit under the emergency action authority provided in §305 of the Magnuson Act. On August 3, NMFS published an interim rule that increased the trip limit from 30 pounds per day to 100 pounds per day, with a maximum possession limit of 500 pounds and modifications to the running clock. The interim rule expired on January 30, 2000. NMFS announced on July 29, 1999 that it disapproved the 30-day closure on Georges Bank proposed in Framework 30, but it approved the trip limit, which took effect on August 15. Framework 30 established a GB cod trip limit of 2,000 pounds per day/20,000 pounds maximum possession. To address potential discarding in the GOM cod fishery upon expiration of the interim rule, and to prevent repeating on Georges Bank the discarding situation that occurred in the Gulf of Maine when the trip limit was reduced, the Council submitted Framework 31 on October 14, 1999. NMFS approved the increased GOM cod trip limit on January 5, 2000, but it disapproved the change to the GB cod trip limit program that would have eliminated the authority of the Regional Administrator to make mid-season adjustments to the trip limit when 75 percent of the target TAC is reached.

Framework 33 was implemented on June 1, 2000 to reduce or maintain fishing mortality rates for the five critical stocks below fishing mortality rebuilding targets established by Amendment 7. This framework continued the status quo seasonal closures for Gulf of Maine cod, but incorporated a "trigger" for additional closures: if 50 per cent of the target TAC was landed by July 31, the Cashes Ledge Closed Area would be closed in November and Blocks 124 and 125 would be closed in January. The western GOM (WGOM) closure was extended for an additional year, to April 30, 2002. GOM cod trip limits were held at 400 pounds per day with a maximum possession limit of ten times the daily limit. A GB cod trip limit of 2,000 pounds per day, not to exceed 20,000 pounds per tip, was also adopted. In addition, a closure of Blocks 109-114, 98, and 99 during May was implemented. The Multispecies Plan Development Team (PDT) reviewed stock status in November, 2000, and concluded that Amendment 7 fishing mortality targets were likely being met for GB cod, GB haddock, GB yellowtail flounder, and SNE yellowtail flounder. The fishing mortality of GOM cod could not be determined with precision because of extensive discards that were believed to have occurred in 1999 because of the low trip limit. GB cod was assessed in June 2001 and fishing mortality was reported to be slightly above the Amendment 7 target; subsequent assessments have shown this report to be in error. GOM cod was assessed in June 2001, and fishing mortality was found to be significantly above the fishing mortality corresponding to maximum yield per recruit (FMAX) target for this stock. After receiving the information on GOM cod at the July, 2001 Council meeting, the Council renewed efforts to develop Framework 36. Framework 36 was completed by December 2001, but the Council did not adopt the framework and it was not submitted.

#### **Recent Changes in the NE Multispecies Fishery: Description of Frameworks 40A, 40B, 41, and 42**

FW 40A to the NE Multispecies FMP provided exclusive access to Closed Area I (CAI) for the GB Hook Sector in a directed haddock SAP. This SAP will continue to provide a significant contribution to the Sector members' annual catch and the overall economic viability of hook fishing on Georges Bank. A paucity of cod will continue to require alternatives for the hook and line fishery on Georges Bank. Additionally, under FW 40B the eligibility criteria and allocation formula for the Sector changed. Amendment 13 established the Sector and allocates GB cod to the sector based on the history of the sector participants. As implemented, only permits with a past history of using hook gear can join the Sector, and only cod landed using hook gear is used to determine the Sector's cod allocation. FW 40B modified these requirements by allowing any vessel to join the Sector and all cod landings of Sector participants, regardless of gear, to be used to determine the Sector's allocation. Sector participants are required to use hook gear once in the Sector and the maximum share of the GB cod TAC that the Sector can be allocated is twenty percent.

FW 41 allows access to the CA I SAP to non-Sector vessels. As a result, FW 41 resulted in the decline of catch and consequently revenue (approximately \$2.9M in fishing year (FY) 2004 and approximately \$2.2M in FY 2005) to the GB Hook Sector membership. In response to this decline, the Sector negotiated with common pool vessels in an attempt to maintain product value by eliminating a derby style fishery. The two sides negotiated a split season. The TAC and season was split in two. Sector and non-Sector vessels will alternate seasons on an annual basis. As the TAC grows with the predicted growth of the haddock resource, expansion of the area and the season may be considered. With 2 years of a split season under their belt, both sides have successfully prevented a derby style fishery. Additionally, both sides have committed themselves to increased accountability by maintaining an average of 50% federal observer coverage, and not exceeding the hard TAC of haddock or codfish, thereby no contributing to overfishing.

Framework adjustment 42 (FW 42) was initiated following the 2005 assessment of groundfish stocks (see Section 3.1 for stock status information). Eight stocks were found to be experiencing overfishing (GB Yellowtail, Cape Cod (CC)/GOM Yellowtail, Southern New England (SNE)/Massachusetts (MA) Yellowtail, White Hake, SNE winter, GB winter, GOM cod and GB cod) and as a result, the NEFMC approved a range of alternatives to adjust fishing mortality downward on these stocks. Approved components of FW42 include DAS cuts, reduced trip limits, and differential DAS counting (2:1 in the inshore fishing areas). Additionally, FW42 approved the implementation of the GB Cod Fixed Gear Sector, the second GB cod hard TAC fishery.

### **Impacts of Sector following Framework Adjustments 40A, 40B, 41 and 42**

The economic, social, and biological impacts of the Sector changed very little following the implementation of FWs 40A, 40B and 41. The impacts were positive, minimal, or negligible as Table 1 (below) shows.

#### *Sector Impacts following implementation of FW 40A*

Biological impacts - FW 40A has had a positive biological impact as the Sector used approximately 200 DAS targeting GB haddock rather than GB cod while fishing in the SAP. During the SAP, Sector vessels averaged approximately 100 pounds of cod per trip, significantly less than the expected catch when targeting cod on a DAS.

Economic impacts - FW 40A has had a positive economic impact by creating an opportunity for the Sector to land approximately \$1.5 million of fish in the ports of Chatham and Harwich in 2004, according to the Sector Manager.

Social impacts - FW 40A has had a positive social impact as Sector members have come together to work towards ways to cooperatively harvest the haddock resource and to create branding and marketing opportunities. This industry cooperation will expand as the Common Pool joins the Sector in fishing in the SAP.

*Sector Impacts following implementation of FW 40B*

Biological impacts - FW 40B had minimal but positive biological impacts. Allowing non-hook GB cod landings history in the Sector did not change the overall allocation for the Sector in FY 05 (12.58% in 2004, 11.12% in 2005), despite a loss of 10 Sector vessels (58 in 2004, 48 in 2005). However, it presents an opportunity to bring more effort under a hard TAC in a hook fishery that has minimal habitat implications.

Economic impacts - FW 40B had minimal but positive economic impacts. By allowing non-hook landings history in the Sector, the loss of 10 Sector vessels for FY 05 (58 in 2004, 48 in 2005) was offset.

Social impacts - FW 40B had minimal but positive social impacts. FW 40B helped the Sector maintain viability by removing a disincentive to join the Sector.

*Sector Impacts following implementation of FW 41*

Biological impacts - FW 41 had minimal biological impacts. The Sector caught approximately 1.05 million pounds of haddock in the SAP in FY 04, approximately 1 million pounds in the SAP in FY 05, and approximately 149,000 pounds in the SAP in FY 06.

Economic impacts - FW 41 had a positive economic benefit as the Sector created a cooperative harvest and marketing plan by splitting the season in half, sharing the opportunity and the TAC of haddock with the common pool.

Social impacts - FW 41 had positive social benefits. Sector cooperative harvesting and internal controls offer mitigation of safety, logistical and shoreside support issues resulting from a potential derby fishery. In addition, FW 41 created cooperative harvest opportunities between the Sector and the Common Pool.

*Sector Impacts following implementation of FW 42*

Biological impacts – Since FW 42 was implemented less than three months prior to the development of this document, it is premature to determine the full effects of the framework. However, FW42 is expected to have positive biological impacts on groundfish stocks by relieving fishing pressure to meet stock rebuilding objectives. The Sector is limited by DAS and a hard TAC on cod. The reductions of FW 42 (including reduced trip limits and DAS, and 2:1 differential DAS counting) were driven by the need to reduce effort upon yellowtail flounder, GB winter flounder and white hake stocks. Other stocks requiring reductions were not part of the approved GB Hook Sector operations area. Previous landings data and the Sector's own landings database show that in FY 2004 the Sector landed a total of 7 pounds of yellowtail which was 0.0000005% of the total landings. The catch rates of other non-target species by the Sector were

low (>1%). The Sectors catch of GB winter flounder was 0.0002% and white hake 0.003% of total catch for fishing year 2004-2005. While the current fishing year has not ended, early indications are that landings of these species continue to remain very low. As such, the Sector requested, and received exemption from changes in DAS use rates implemented to protect yellowtail, white hake and GB winter flounder. Additionally, with the approval of the GB Cod Fixed Gear Sector, up to an additional 20% of the GB cod stock (for a total of up to 40%) would come under a hard TAC and not be subjected to overfishing.

Economic impacts - FW 42 had a minimal but positive impact on Sector participants wishing to harvest primary target species. Through an exemption to differential DAS use rates, Sector members signed into the Sector for an additional year. For the individual fisherman, the choice to fish under the GB Hook Sector agreement is based upon a sustainable fishery management ethic. However, the decision is also an economic decision. Reductions and changes to DAS may create a desire to relocate the current Sector member's business to the Gulf of Maine or Southern New England areas not subject to differential DAS counting (outside of the Sector) or to pursue other opportunities (e.g., gear change or leasing of DAS). Both of these options are not permitted of members of the Sector. In order to make this decision, a current member would need to leave the Sector.

Social impacts – FW 42 resulted in minimal, but positive social benefits to the Sector with the approval of a second Sector (and as such, another group of local fishermen coming under a hard TAC), the Georges Bank Cod Fixed Gear Sector. By working closely with the Fixed Gear Sector, the Hook Sector participants foster an environment of cohesiveness and accountability within the Chatham/Harwichport community across gear types. A net increase in GB cod managed under a true hard TAC system improves the likelihood that the GB cod stock would stabilize and eventually rebuild. The premise of the two sectors is that a healthy GB cod stock equals a healthy coastal community.

Regulatory Package	Applicable Regulatory Changes	Impacts / Expected Impacts			
		Biological	Economic	Social	Cumulative
Amendment 13	N/A - Status Quo	N/A - Status Quo	N/A - Status Quo	N/A - Status Quo	N/A - Status Quo
Framework 40A	Closed Area I Hook Gear Haddock SAP implementation.	<b>Positive.</b> SAP shifted Sector effort off of GB cod and onto GB haddock in 2004 (approx. 200 DAS with <100 lbs GB cod/DAS). Renewal will allow this to happen again.	<b>Positive.</b> Provided approx \$1,500,000 revenue to Chatham/Harwichport fishing industry in 2004. Ops plan renewal would allow opportunity in 2007.	<b>Positive.</b> Ops plan renewal would allow Sector members to experiment with cooperative harvesting in 2007 SAP, and SAP supports shoreside businesses.	<b>Positive.</b> Ops plan renewal offers opportunity to maximize the conservation benefits and community mitigation measures built into Amendment 13 (B-DAS usage and SAPs).
Framework 40B	Allowed vessels with no hook history to join the Sector and count non-hook landings history toward the Sector allocation calculation.	<b>Minimal,</b> but positive. Allowed more effort to be brought under a Hard TAC. Allowed trawl and gillnet effort to downgrade habitat and protected species impacts by switching to hook and line.	<b>Minimal,</b> but positive. Allowed Sector to partially offset TAC losses anticipated due to loss of approx 8 permits.	<b>Minimal,</b> but positive. Maximized opportunity within Sector.	<b>Minimal,</b> but positive. Offered the Sector valuable opportunity to maximize participation, conservation and profit.
Framework 41	Allowed Common Pool (Non-Sector) vessel access to CAI Hook Gear Haddock SAP.	<b>Minimal,</b> but positive. The Sector caught approximately the same amount of haddock in the SAP in FY 04 as in FY 05.	<b>Positive.</b> Sector cooperative harvesting and internal controls mitigated any price crash expected due to derby fishery.	<b>Positive.</b> Sector cooperative harvesting and internal controls offer mitigation of safety, logistical and shoreside support issues resulting from derby fishery.	<b>Minimal,</b> but positive. Ops plan renewal would allow Sector opportunity to attempt to safely and profitably harvest similar haddock as in previous years' SAPs.
Framework 42	Various trip limit reductions, differential DAS counting, approval of Fixed Gear Sector	<b>Positive.</b> FW42 would relieve fishing pressure to meet stock rebuilding objectives and bring up to an additional 20% of GB cod under a hard TAC	<b>Positive.</b> Sector members are exempt from changes in DAS management and opportunity and, consequently, avoid suffering a loss of revenue	<b>Minimal,</b> but positive. The authorization for the formation of a second sector allows for a stronger community-based approach to management	<b>Minimal.</b> Further reductions in DAS continue hurt the traditional GB hook fleet disproportionately, but approval of a second sector allows for more accountability and cohesiveness within the community
Cumulative	All measures implemented and contemplated for Frameworks 40A, 40B and 41 taken cumulatively.	<b>Minimal,</b> but positive. Similar amount of GB cod under hard TAC, but potential for some conversion of trawl and gillnet effort to hook and line. Effort shift from GB cod to GB haddock may produce conservation benefit.	<b>Positive.</b> Similar size Sector would see similar economic benefit from SAPs by applying internal cooperative harvesting and harvest controls.	<b>Minimal,</b> but positive. Similarly structured Sector would continue mutualistically beneficial relationship with community, and seek to maximize safety in FY2007 SAP.	<b>Minimal,</b> but positive. Sector would reap positive impacts from SAP participation, but anticipates harvesting approximately the same amount of GB haddock. GB cod allocation in FY 07 would be similar to FY 06 (10-13%).

**Table 1. Impacts/Expected Impacts of Sector Operations Plan Renewal on the Affected Environment, in Regulatory Context**

## **Summary of Regulatory Environment**

Recent changes to the NE Multispecies FMP (Framework 40A) provided access (exclusive) to CAI for the GB Hook Sector in a directed haddock SAP. The SAP provided a significant contribution to the Sector members' annual catch and the overall economic viability of hook fishing on Georges Bank. The paucity of cod would continue to require alternatives for the hook and line fishery on Georges Bank. Additionally, FW 40B modified the eligibility criteria and allocation formula for the GB Hook Sector. Amendment 13 established the GB Cod Hook Sector and allocates GB cod to the Sector based on the history of the Sector participants. As implemented, only permits with a past history of using hook gear can join the Sector, and only cod landed using hook gear is used to determine the Sector's cod allocation. FW 40B modified these requirements by allowing any vessel to join the Sector and all cod landings of Sector participants, regardless of gear, is used to determine the Sector's allocation. Sector participants are required to use hook gear once in the Sector and the maximum share of the GB cod TAC that the Sector can be allocated to the Sector is twenty percent.

Framework 41 allowed access to the CAI Hook Haddock SAP to common pool vessels. The SAP is bounded in time (October 1 – December 31) and by a hard TAC (1000mt). The potential for a derby between Sector and non-Sector vessels was mitigated by a negotiated split of TAC and time. Sector members fished the first part of the season and landed approximately 1 million pounds of haddock for the first two years, falling to approximately 149,000 lbs in year three.

Regulatory changes as part of FW 42 continue to disproportionately impact Sector participants by reducing the allocation of DAS through a change in the allocation between A and B DAS, and a reduction of total number of DAS. This may threaten the economic viability of hook fishing on GB. Cooperation with the Fixed Gear Sector may bring about increased biological, economic, and social benefits.

## **2.0                   AFFECTED ENVIRONMENT**

This section contains information on the biological, habitat, social and economic environments affected by the proposed action. Since the approval of the GB Sector for the 2004-05 fishing year, baseline information for the affected resources, aside from the status of groundfish stocks, as described in the Affected Environment Section of the 2004-05 Environmental Assessment (EA) (Section 3.0) have not significantly changed and are described herein. The status of the stocks section has been updated to reflect the latest information from the GARM II (starting at section 3.2.3)

### **2.1                   BIOLOGICAL ENVIRONMENT**

The proposed action would affect the NE Multispecies fishery and would be restricted to the Georges Bank stocks for all those component species thereof for which distinctions are made.

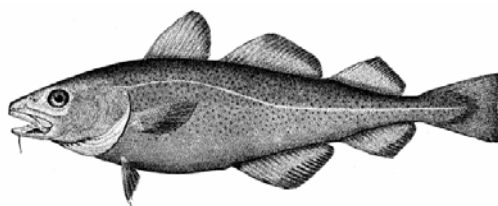
#### **2.1.1               TARGET SPECIES**

The target species for the Sector are GB cod and haddock.

**Atlantic Cod** (*Gadus morhua*) is split into two distinct management units under the NE Multispecies FMP: Gulf of Maine cod and Georges Bank cod. Little interchange occurs between the two (Lough, 2004). No changes are proposed in the management regime for Gulf of Maine cod, nor would this stock be accessible to participants in the proposed action. The target species is Georges Bank cod.

The Atlantic cod (Figure 1) is distributed in the northwest Atlantic Ocean from Greenland to Cape Hatteras, North Carolina. In U.S. waters, densities are highest on Georges Bank and the western Gulf of Maine. It occurs from nearshore areas to depths exceeding 400 m (rarely). The greatest concentrations off the northeast coast of the U.S. are on rough bottoms in waters between 10 and 150 m and at temperatures between 0 and 10°C.” (Lough, 2004)

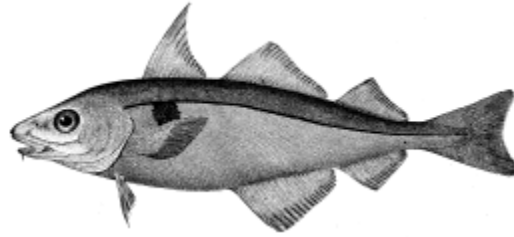
Atlantic cod attain ages of 20 years, although most enter fisheries at ages 2-5. They can “grow to lengths of 130 cm and weights of 25-35 kg and average 26 cm by the end of their first year. Median age at sexual maturity is 1.7-2.3 years at lengths between 32 and 41 cm” (NEFSC 2005). Fecundity is high and a large female may produce between 3 and 9 million eggs, and spawning occurs near bottom during winter and early spring, usually in water temperatures between 5 and 7°C (NEFSC 2005). Eggs are pelagic and drift for 2-3 weeks before hatching. The larvae are also pelagic until they reach 4-6 cm in about 3 months, whence they descend to the bottom. (Lough, 2004).



**Figure 1- The Atlantic Cod (*Gadus morhua*) from Goode 1884**

**Haddock** (*Melanogrammus aeglefinus*) is a demersal gadoid species distributed on both sides of the North Atlantic. In the western North Atlantic, haddock range from Greenland to Cape Hatteras. “Highest concentrations off the U.S. coast are associated with the two major stocks located on Georges Bank and in the southwestern Gulf of Maine. Haddock are most common at depths of 45 to 135 m (25 to 75 fathoms) and temperatures of 2° to 10°C (36° to 50°F). Haddock exhibit age-dependent shifts in habitat use with juveniles occupying shallower water on bank and shoal areas, and larger adults associated with deeper water. Adult haddock do not undertake long migrations, but seasonal movements occur in the western Gulf of Maine, the Great South Channel and on the northeast peak of Georges Bank. Haddock prey primarily on small invertebrates, although adult haddock will occasionally consume fish” (NEFSC 2005).

Growth and maturation rates of haddock have changed significantly over the past 30 to 40 years. “During the early 1960s, all females age 4 and older were fully mature, and approximately 75% of age 3 females were mature. Presently, growth is more rapid, with haddock reaching 48 to 50 cm (19-20 in.) at age 3; and nearly all age 3 and 35% of age 2 females are mature. Although early maturing fish increase spawning stock biomass, the degree to which these younger fish contribute to reproductive success of the population is uncertain. Spawning occurs between January and June, with peak activity during late March and early April. An average sized (55 cm, 22-in.) female produces approximately 850,000 eggs, and larger females are capable of producing up to 3 million eggs annually” (NEFSC 2005). Spawning concentrations occur on eastern Georges Bank, to the east of Nantucket Shoals and along the Maine coast. Juvenile haddock remain pelagic for several months before settling to the bottom. (Brodziak 2005)



**Figure 2- The Haddock (*Melanogrammus aeglefinus*)**

### **2.1.1.1 MULTISPECIES STOCK ANALYSIS AND STATUS OF TARGET SPECIES**

Groundfish assessments are usually prepared by the Stock Assessment Workshop (SAW) and reviewed by the Stock Assessment Review Committee (SARC). Assessments focus on individual stocks with a gap of several years common between updates, and the NEFMC Multi-Species Monitoring Committee will compile assessment data, conduct projections if necessary, and report to the Council. Analysis conducted for Amendment 13 relied upon the report of the Groundfish Assessment Review Meeting (GARM) of October 2002.

The most recent groundfish stock assessments were performed in August 2005 (GARM II). Of nineteen managed groundfish stocks, the assessments found that fishing mortality for seven stocks exceeded Amendment 13 thresholds. As a result, the NEFMC prepared FW 42.

#### **Georges Bank Cod Stock Status**

Georges Bank Atlantic cod are overfished and overfishing is occurring. Fishing mortality (F) has been steadily declining since 1997, except for a slight increase in 2001, and is currently at the lowest exploitation in the time series. Spawning stock biomass (SSB) reached a record low in 1995 and slowly increased, primarily due to growth, until 2001. Since 2001, however, SSB has been declining. The 2002-2004 F trajectory is less than that projected for Amendment 13 and the SSB is slightly higher than the Amendment 13 projection. Catch during 2002-2004 was also less than the Amendment 13 projection.

The 1999 and 1998 year class accounts for the majority of the US catch and the 1998 year class accounts for the majority of the Canadian catch in 2004. The 1998 (12.8 million age 1 fish) year class, while below the long term average (14.7 million age 1 fish), represents the strongest year class since the last above-average year class that occurred in 1990 (17.8 million age 1 fish). The 2000, 2001, and 2002 year classes are among the lowest in the time series. The 2003 (21.2 million age 1 fish) year class is the first above average year class since the 1990 and will enter the fishery during 2005 (NEFSC 2005).

The Northeast Fisheries Science Center (NEFSC) and Department of Fisheries and Oceans (DFO) survey biomass and abundance indices fluctuated during 2002 to 2005, however, all the indices continue to remain below the long term average. The most recent NEFSC surveys indicate that the 2003 year class may be similar in size to the 1998 year class, and the DFO spring survey indicates that the year class is above average.

The lack of strong recruitment in the last decade suggests that recovery of this stock will be largely dependent on reducing fishing mortality in the near term and husbanding the strong 2003 year class, and potentially the 2004 year class, to increase SSB. (NEFSC, 2005)



## Georges Bank Haddock Stock Status in 2004

In 2004, spawning biomass was 116,800 mt (93% of biomass threshold (BTHRESHOLD) and 47% of the biomass at MSY (BMSY)). Therefore, the Georges Bank haddock stock was overfished in 2004 (Figure 3). In 2004, the fishing mortality was 0.24 (92% of the F threshold (FTHRESHOLD)). Therefore, overfishing was not occurring on the Georges Bank haddock stock in 2004 (NEFSC 2005).

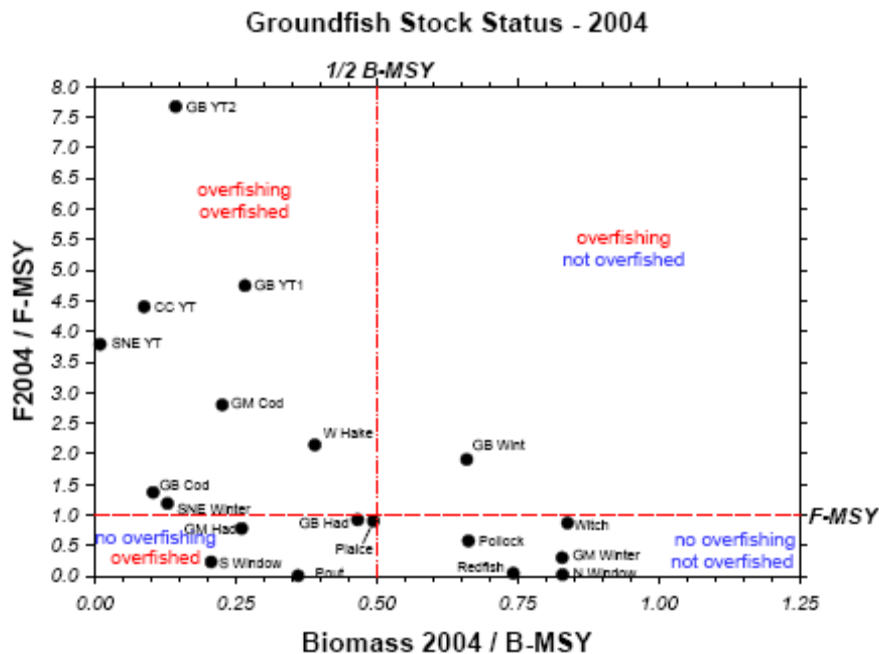


Figure 3- Groundfish Stocks Status 2004 (NEFSC 2005)

The projected Amendment 13 rebuilding trajectory for Georges Bank haddock was compared to VPA estimates of spawning biomass and fishing mortality in 2004. For this stock, an adaptive rebuilding plan was adopted in which the rebuilding F (FREBUILD)=FMSY=0.26 during 2004-2008. Median spawning biomass on the rebuilding trajectory was projected to be 129.8 kt in 2004. For comparison, the 80% confidence interval based on bootstrapping was (0.21, 0.31) and the FREBUILD value for 2004 falls within the probable range of the virtual population analysis (VPA) estimate of F2004. Similarly, the 80% confidence interval for SSB2004 was (97.9, 138.8) kt and the rebuilding trajectory of SSB (SSBREBUILD) in 2004 falls within the probable range of the VPA estimate of SSB2004. Overall, this suggests that current estimates of F and SSB are consistent with projected values on the rebuilding trajectory (NEFSC 2005).

### 2.1.2 NON-TARGET SPECIES

Non-target species that may be affected by this action are identified as other species that are part of the northeast multispecies complex. In total, the NE Multispecies (Groundfish) FMP manages 15 species and 24 stocks of finfish. These species are generally separated into “large-mesh species” and “small-mesh species.” (Figure 4). The various components of the complex can be found throughout the affected area and except for those stocks managed according to regulations specific to the Gulf of Maine, together represent the Groundfish species subject to fishing effort described in the proposed action.

The following information from the Amendment 13 FSEIS, Figure 3 above and the 2005 Groundfish GARM describe the current biological environment as related to stocks in the Northeast Multispecies complex other than GB cod and haddock:

### **2005 GARM II Stock Assessment Results (NEFSC 2005)**

The following passages have been excerpted in part from the 2005 GARM:

Of the 18 stocks for which the fishing mortality (F) that produces the maximum sustainable yield (MSY), or FMSY (or its proxy), could be estimated, 10 were fished below FMSY in 2004, and 7 above. Additionally, the biomasses of 6 of the 19 stocks for which the biomass that produces the MSY, or BMSY (or its proxy), could be estimated were at or above ½ BMSY, while the biomasses of 13 stocks were below the threshold (NEFSC 2005).

Stock biomasses have increased in only 6 of the 19 stocks since 2001. For the six stocks that increased in biomass between 2001 and 2004, the average increase was 50%. For the remaining stocks, the average decrease was 19%. For Georges Bank yellowtail flounder (YT), alternative model formulations were used for assessment (denoted as GB YT1 and GB YT2, ...). One model suggested that the biomass increased (GB YT1) while the other (GB YT2) suggested a decrease. If model GB YT1 is used then 7 stocks increased. Landings of the complex of 19 groundfish stocks have declined by 7% since 2002, driven primarily by decreases in landings of Georges Bank cod and American plaice but offset primarily by increases in landings of Georges Bank haddock and pollock. F rates declined for 13 of 19 stocks between 2001 and 2004. For the 13 stocks where F declined, the average percent decline was 50% (range: 1% to 80%). For the 6 stocks where F increased, the average percent increase was 49% (range: 31% to 73%). The 6 stocks showing increases in F since 2001 were Georges Bank haddock (39%), Georges Bank yellowtail flounder (GB YT2 140%), Gulf of Maine cod (75%), Georges Bank winter flounder (50%), Gulf of Maine haddock (50%), and Atlantic halibut (50%).

Four stocks continue to exhibit high fishing mortality rates compared to their FMSY reference levels. Cape Cod/Gulf of Maine and Southern New England/Mid-Atlantic yellowtail flounder fishing mortality rates in 2004 were at least three times their respective FMSY levels, compared to over five times the FMSY levels in 2001. Gulf of Maine cod and white hake experienced fishing mortality levels in 2004 that were at least two times their respective FMSY levels. Mortality for these two stocks has increased since 2001. Fishing mortality for these four stocks also exceeded Amendment 13 thresholds for fishing years 2004-2005. Cape Cod/Gulf of Maine yellowtail flounder, Gulf of Maine Cod, and Southern New England/Mid-Atlantic yellowtail flounder were about three times the Amendment 13 thresholds, while white hake was 15% above the Amendment 13 threshold. (NEFSC 2005)

**“Large-Mesh Species” = 12 Species, 19 Stocks**

<b>Atlantic Cod:</b>	two stocks; GOM cod and GB cod
<b>Haddock:</b>	two stocks; GOM haddock and GB haddock
<b>Yellowtail Flounder:</b>	three stocks; GB YT, CC YT, and SNE YT
<b>Winter Flounder:</b>	three stocks; GOM winter, GB winter, and SNE/MA winter
<b>Windowpane Flounder:</b>	two stocks; GOM/GB windowpane and SNE/MA windowpane
<b>Witch Flounder:</b>	one stock; distributed primarily in the GOM and on GB
<b>American Plaice:</b>	one stock; distributed primarily in the GOM
<b>Redfish:</b>	one stock; distributed primarily in the GOM and southern GB
<b>Pollock:</b>	one stock; distributed in the GOM, GB, and SNE
<b>White Hake:</b>	one stock; distributed primarily in the GOM and southern GB
<b>Atlantic Halibut:</b>	one stock; distributed primarily in the GOM and on GB
<b>Ocean Pout:</b>	one stock; distributed throughout region

**“Small-Mesh Species” = 3 Species, 5 Stocks**

<b>Silver Hake (Whiting):</b>	two stocks; GOM/northern GB whiting, and southern GB/SNE whiting
<b>Red Hake:</b>	two stocks; GOM/northern GB red hake, and southern GB/SNE red hake
<b>Offshore Hake:</b>	one stock; distributed primarily offshore in SNE and MA

**Figure 4 – The Northeast Multispecies Groundfish Complex (NEFMC Groundfish FAQ)**

Two additional stocks, Georges Bank yellowtail flounder and Georges Bank winter flounder, exhibited fishing mortality rates in 2004 that are well above their respective FMSY levels. The 2002 GARM assessments indicated that fishing mortality in 2001 for both of these stocks was less than FMSY. The current assessments, however, now estimate that in 2001 Georges Bank yellowtail flounder fishing mortality was three times the FMSY level, and Georges Bank winter flounder mortality was above FMSY (NEFSC 2005)

The following passages have been excerpted in part from the 2005 GARM:

The number of stocks where biomass was below  $\frac{1}{2}$  BMSY remained the same, 12 below and 6 at or above  $\frac{1}{2}$  BMSY, although there were changes in the stock composition of the categories. The number of stocks where F exceeded FMSY declined from 11 in 2001 to 8 in 2004 and the number of stocks where biomass was below  $\frac{1}{2}$  BMSY and F exceeded FMSY declined from 9 in 2001 to 7 in 2004 ... Stocks showing substantial decreases in the ratio of F to FMSY include Georges Bank Cod, Southern New England/Mid Atlantic and Cape Cod/Gulf of Maine yellowtail flounder, Gulf of Maine winter flounder, Southern New England/Mid Atlantic winter flounder, witch flounder, and American plaice. For stocks with F to FMSY ratios above one, fishing mortalities have increased for Gulf of Maine cod, Georges Bank yellowtail flounder and Georges Bank winter flounder. Stocks showing substantial increases in the ratio of B to BMSY include Gulf of Maine winter flounder, witch flounder, pollock, and redfish. Georges Bank haddock and white hake also increased in biomass but are still below  $\frac{1}{2}$  BMSY.

Stocks where the ratio of B to BMSY have decreased by more than 25% include Southern New England/Mid Atlantic yellowtail flounder, Cape Cod/Gulf of Maine yellowtail flounder, Gulf of Maine haddock and ocean pout. (NEFSC 2005)

**Non-target Species Interactions**

Table 2 summarizes other species that Sector members are likely to catch, based on prior landings reports. Sector members would be employing gear that has been used for decades to catch GB cod and haddock.

Species	
Witch Flounder	Ocean Catfish
Yellowtails	Redfish
Monkfish	Skate
Plaice	White Hake
Halibut	Dogfish
Winter Flounder	Pollock

**Table 2- Non-target species hook gear interactions**

### 2.1.3 PROTECTED SPECIES

For the purposes of this EA, protected species are assumed to be those species outside the Northeast Multispecies Groundfish Complex that are endangered, threatened, or candidate species under the Endangered Species Act (ESA), or protected under the Marine Mammal Protection Act (MMPA), or both, and that are known to exist in the area affected by the proposed action. Furthermore, this section will include certain Marine Mammal Critical Habitat Designations and bird species protected under the Migratory Bird Act of 1918 (NEFMC, Am 13 FSEIS, Section 9.2.2). Finally, it will include those skate species with prohibitions on possession in place under the Northeast Skate Complex FMP. Table 3 lists the protected species known to exist in the affected area.

Species in Table 3 known to interact with the hook fishery are the humpback whale, harbor seal, gray seal, barndoor skate and thorny skate. Protected species that occur within the affected area that are not known to interact with the hook fishery are not discussed further in this EA. Brief descriptions of the affected species follow, and further information on these species and the others in Table 3 can be found in Section 9.2.2 of the NEFMC Amendment 13 Final Supplemental Environmental Impact Statement.

Humpback whales inhabit pelagic and coastal habitats, and are known to migrate to summer feeding grounds from the mid-Atlantic to the GOM; approximately 300-700 use U.S Atlantic waters (Wynne and Schwartz, 1999). They attain a length of 11-16 meters and a weight of 40 tons, and feed mainly on bait fish and krill (Wynne and Schwartz, 1999). There has been one documented interaction between longline gear and a humpback whale. This interaction took place in the Gulf of Maine; there have been no documented interactions of benthic longline gear and large cetaceans on Georges Bank.

Gray seals are approximately 2 meters long, weighing 200-300 kilograms, and their western north Atlantic population, centered mainly in eastern Canada, includes growing numbers in Massachusetts and Maine, where they are using sandy haul outs for pupping and molting (Wynne and Schwartz, 1999). They feed mainly on schooling fish, squid and octopus (Wynne and Schwartz, 1999). Harbor seals often associate with gray seals (Wynne and Schwartz, 1999), and can be found in mixed groups with gray seals in the affected area. They range from 1.7-1.9 meters and weigh approximately 120 kilograms (Wynne and Schwartz, 1999). Diet is similar to harbor seals. The GOM bottom longline fishery is listed in category III of the MMPA List of Fisheries for 2005. Category III fisheries have a “remote likelihood” of an incidental take of a protected marine mammal (Department of Commerce, 2006).

Barndoor skate is known to interact with the bottom longline fishery, but these skates are not retained; they are released alive at the rail of the vessel. Barndoor skates are classified as a large skate under the

Northeast Skate Complex FMP; indeed they are one of the largest skate species in New England. They are found throughout the affected area, and are considered abundant on Georges Bank and Nantucket Shoals (Bigelow and Schroeder, 2002). Barndoor skates have been considered for listing under the ESA, and although the petition for listing was determined to be not warranted as of September 2002, they were left on the candidate list at that time because of concerns about status and population structure (NEFMC, 2003). There is currently a possession prohibition under the Northeast Skate Complex FMP.

Thorny skates are also known to interact with the hook fishery, but they are not retained; thorny skates are released alive at the rail of the vessel. See Section 3.2.8 for a description of the Thorny skate.

<b><i>Cetaceans</i></b>	<b><i>Status</i></b>
Northern right whale ( <i>Eubalaena glacialis</i> )	Endangered
Humpback whale ( <i>Megaptera novaeangliae</i> )	Endangered
Fin whale ( <i>Balaenoptera physalus</i> )	Endangered
Minke whale ( <i>Balaenoptera acutorostrata</i> )	Protected
Harbor porpoise ( <i>Phocoena phocoena</i> )	Protected
Risso's dolphin ( <i>Grampus griseus</i> )	Protected
Pilot whale ( <i>Globicephala</i> spp.)	Protected
White-sided dolphin ( <i>Lagenorhynchus acutus</i> )	Protected
Common dolphin ( <i>Delphinus delphis</i> )	Protected
Bottlenose dolphin ( <i>Tursiops truncatus</i> )	Protected
<b><i>Seals</i></b>	
Harbor seal ( <i>Phoca vitulina</i> )	Protected
Gray seal ( <i>Halichoerus grypus</i> )	Protected
Harp seal ( <i>Phoca groenlandica</i> )	Protected
Hooded seal ( <i>Cystophora cristata</i> )	Protected
<b><i>Sea Turtles</i></b>	
Leatherback sea turtle ( <i>Dermochelys coriacea</i> )	Endangered
Kemp's ridley sea turtle ( <i>Lepidochelys kempii</i> )	Endangered
Green sea turtle ( <i>Chelonia mydas</i> )	Endangered
Hawksbill sea turtle ( <i>Eretmochelys imbricata</i> )	Endangered
Loggerhead sea turtle ( <i>Caretta caretta</i> )	Threatened
<b><i>Fish</i></b>	
Barndoor skate ( <i>Dipturus laevis</i> )	Candidate Species/Possession Prohibition
Thorny Skate ( <i>Amblyraja radiata</i> )	Possession Prohibition
<b><i>Critical Habitat Designations</i></b>	
Right whale	Cape Cod Bay
	Great South Channel

**Table 3- Protected species known to exist in the area affected by the proposed action (NEFMC, Am 13 FSEIS, Section 9.2.2)**

It has been determined that that multispecies fishing operations, as managed by Amendment 13 to the Multispecies FMP, are not expected to affect the shortnose sturgeon (*Acipenser brevirostrum*), the Gulf of Maine distinct population segment (DPS) of Atlantic salmon (*Salmo salar*), the roseate tern (*Sterna dougallii dougallii*), the piping plover (*Charadrius melodus*) or the hawksbill sea turtle (*Eretmochelys imbricata*), all of which are listed species under the Endangered Species Act of 1973.

There are several cetaceans protected under the MMPA that are found in the waters fished by the multispecies fishery, namely the Risso's dolphin (*Grampus griseus*), spotted and striped dolphins (*Stenella* spp.), and coastal forms of Atlantic bottlenose dolphin (*Tursiops truncatus*). Although these

species may occasionally become entangled or otherwise entrapped in certain fishing gear such as pelagic longline and mid-water trawls, these gear types are not used in the multispecies fishery (or allowed to operate within the Sector) (NEFMC, Am 13 FSEIS, Section 9.2.2).

Species in Table 3 (and more) that are known to have interacted with the longline and/or gillnet fisheries on Georges Bank are as follows: Bottlenose, Common, Risso's, and White-Sided dolphin; Fin, Humpback, Canadian East Coast Minke, Pilot, and North Atlantic Right whale; Harbor Porpoise; Gray, Hooded, Harbor, and Harp seal; Leatherback, Kemp's Ridley, Green, and Loggerhead turtle. Interactions most frequently include getting caught on hooks, entanglement in groundline, entanglement in anchor line, or entanglement in vertical lines that connect the gear to the surface.

### **2.1.3.1 STATUS OF PROTECTED SPECIES**

With the exception of the Thorny Skate (*Amblyraja radiata*) information on the biological status of the species listed in Table 3 can be found in Section 9.2.2 of the NEFMC Amendment 13 Final Supplemental Environmental Impact Statement. Thorny skate is the only species of skate that is caught by hook gear, and therefore its status is summarized below. Thorny skate is the only skate species addressed here because hook gear does not interact with the other skate species listed.

#### **2.1.3.1.1 STATUS OF THORNY SKATE (*AMBLYRAJA RADIATA*)**

Thorny skates, also known as Mud Skate, Starry Skate or Spanish Skate, inhabit areas along the 100 fm edge of Georges Bank, with very few found in Massachusetts (NEFMC- Northeast Skate Complex Final FMP). In fact, though frequently captured on Georges Bank, they are more likely to be encountered in the Gulf of Maine, as its most common skate (Bigelow and Schroeder, 2002). Thorny skates are classified as a large skate (>100 cm TL) under the FMP. They are distinguished by the presence of 11-19 thorns arranged in a row along the center of the disc and tail.

Thorny skates are found over a wide variety of bottom types from sand to mud at depths of 10 to 600 fathoms, and feed on a variety of benthic invertebrates and fishes. They are not highly migratory (Bigelow and Schroeder, 2002). They were a commercially important skate, however they are currently classified as overfished (NEFMC- Northeast Skate Complex Final FMP), and bound to a formal rebuilding program by the FMP. As such current regulations prohibit the possession of thorny skates on all vessels fishing in federal waters.

## **2.2 PHYSICAL ENVIRONMENT AND HABITAT**

The geographic boundaries of the management area are described by Figures 5a and 5b: The Georges Bank Cod Hook Sector Area (GBCHSA, or Sector Area) is defined by straight lines connecting the waypoints in the order stated in Figure 5a:

GEORGES BANK COD HOOK SECTOR AREA

Point	N. lat.	W. long.
HS1 .....	70°00'	(1)
HS2 .....	70°00'	42°20'
HS3 .....	67°18.4'	42°20' <sup>3</sup>
Follow the U.S. EEZ boundary south to HS3.		
HS3 .....	66°45.5'	39°00'
HS4 .....	71°40'	39°00'
HS5 .....	71°40'	(2)

<sup>1</sup> The east facing shoreline of Cape Cod, MA.  
<sup>2</sup> The south facing shoreline of Rhode Island.  
<sup>3</sup> (the U.S. Canada Maritime Boundary).

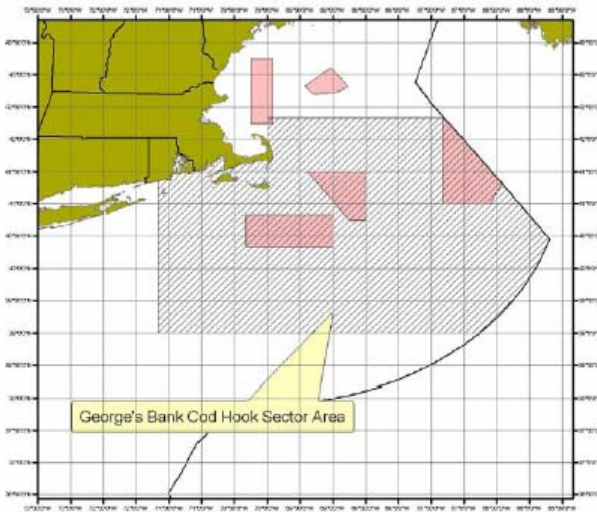


Figure 5a. Waypoint description of the GBCHSA (Department of Commerce-2004)

Figure 5b- Map of the GBCHSA (Department of Commerce, 2004)

2.2.1 NORTHEAST SHELF ECOSYSTEM

The Northeast Shelf Ecosystem (Figure 6) has been described as including the area from the Gulf of Maine south to North Carolina, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream (Sherman et al. 1996). A number of distinct sub-systems comprise the region, including the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope. Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents. (NEFMC, Am. 13 FSEIS, Section 9.1.1)

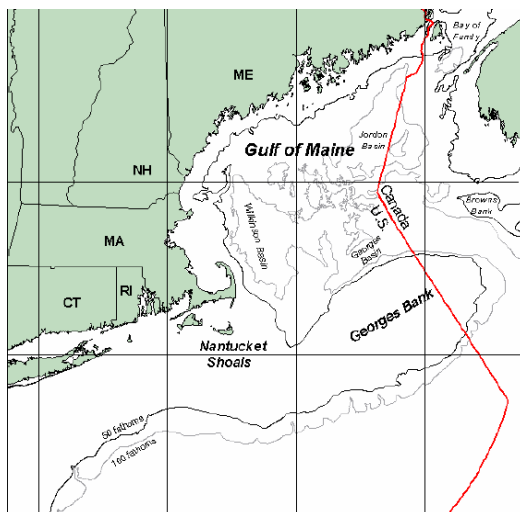


Figure 6- The Affected Ecosystem (NEFMC, Am. 13 FSEIS, Section 9.1.1)

2.2.2 GEORGES BANK

Georges Bank is of primary concern as its physical boundaries contain and correlate to the management units affected by the proposed action.

Georges Bank is a shallow (3-150 m depth), elongate (161 km wide by 322 km long) extension of the continental shelf. It was formed by the Wisconsinian glacial episode and is characterized by a steep slope on its northern edge and a broad, flat, gently sloping southern flank; the Great South Channel lies to the west and the Northeast Channel lies to the northeast. The nature of the seabed sediments varies widely and ranges from clay to gravel. Natural processes continue to erode and rework the sediments on Georges Bank while strong, erosive currents affect the character of the biological community. These currents (greater than 4 km per hour and as high as 7 km per hour) occur predominantly near the shallow, central region of the bank where shoals and troughs characterize the bottom and sand dunes are superimposed upon them. The two most prominent elevations in this area are Cultivator and Georges Shoals. The area west of the Great South Channel, known as Nantucket shoals, is similar in nature to the central region of the bank. Currents in these areas are strongest where water depth is shallower than 50 m. (NEFMC, Am 13 FSEIS, Section 9.1.1.2)



**Figure 7- The New England region, including Gulf of Maine, Georges Bank, and Nantucket Shoals. (NEFMC, 1998)**

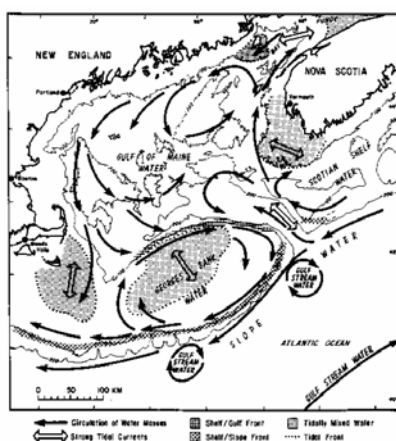
### **2.2.2.1 GEORGES BANK WATER COLUMN HABITAT**

Oceanographic frontal systems occur between water masses from the Gulf of Maine and Georges Bank. These water masses differ in temperature, salinity, nutrient concentration, and planktonic communities, which influence productivity and may influence fish abundance and distribution. Currents on Georges Bank include a weak, persistent clockwise gyre around the bank, a strong semidiurnal tidal flow predominantly northwest and southeast, and very strong, intermittent storm-induced currents, which can all occur simultaneously. Tidal currents over the shallow top of Georges Bank can be very strong, and keep the waters over the bank well mixed vertically. This results in a tidal front that separates the cool waters of the well-mixed shallows of the central bank from the warmer, seasonally stratified shelf waters on the seaward and shoreward sides of the bank. The clockwise gyre is instrumental in distribution of the planktonic community, including larval fish.

Currents and tides may also generate fronts, eddies, and divergence and convergence zones that may provide suitable habitat conditions to a suite of organisms. Fronts, eddies, and other convergence zones may function as a congregation area for complexes of organisms and influence the population dynamics of a region. Planktonic organisms may be especially influenced by the circulation of water masses (e.g.



transport mechanism). Congregation zones may include areas of high primary productivity, high plankton concentrations, and efficient foraging habitats for larval fishes and other planktonic organisms. Larger organisms may also target fronts and eddies to prey upon the high density of planktonic organisms. Convergence zones (e.g. two currents coming together) may also act as transport mechanisms, supplying food-rich surface waters to the seafloor. Divergence zones (e.g. currents moving away from each other), including upwelling events, have been associated with phytoplankton blooms. Divergence zones transport nutrient-rich bottom waters to the sea surface and promote primary production. These oceanographic features may provide necessary habitat conditions for the survivability, development, and growth of a variety of organisms at particular ontogenetic stages. Other physical oceanographic properties may contribute to pelagic habitat conditions, such as stratified water layers (e.g. thermoclines, haloclines, and pycnoclines), internal waves, plumes (e.g. riverine discharge). Physical oceanography constitutes several roles that influence several aspects of fishery resources and habitat conditions, including the transporting planktonic organisms and water masses throughout New England waters. Population dynamics and habitat conditions in New England are greatly influenced by oceanographic processes. (NEFMC, 1998).



**Figure 8- Map showing water mass circulation patterns in the Georges Bank – Gulf of Maine region. (Figure reproduced from Valentine and Lough 1991, in NEFMC- EFH Omnibus Amendment, 1998)**

### 2.2.2.2 GEORGES BANK BENTHIC HABITAT

Sedimentary composition of the ocean floor is highly variable in the Gulf of Maine, Georges Bank, and southern New England (Figure 9). Sediments differ in origin, texture, size, transport mechanism, and distribution. Bottom habitats in New England waters are heterogeneous, characterized by patchy surficial sediment composition and irregular topographic peaks.

The following classification, excerpted from the NEFMC EFH Omnibus Amendment, 1998, is useful in forming an overview of habitat conditions in New England waters, based on habitat complexity. Its descriptions can support the information in Figure 7 and Table 4 in forming a picture of the surficial conditions in the affected environment:

- *smooth sand or mud*: areas with no vertical structure
- *sand waves*: troughs and peaks provide shelter from current; previous observations indicate species such as whiting position themselves on the downcurrent sides of sand waves where they ambush drifting demersal zooplankton and shrimp
- *biogenic structures*: burrows, depressions, cerianthid anemones, hydroid patches; features that are created and / or used by mobile fauna for shelter

- *shell aggregates*: provide complex small interstitial spaces for shelter; shell aggregates also provide a complex high contrast background which may confuse visual predators
- *pebbles and cobbles*: provide small interstitial spaces and may be equivalent in shelter value to shell aggregates
- *pebbles and cobbles with attached megafauna*: attached fauna such as sponges provide additional spatial complexity for a wider range of size classes of mobile organisms
- *partially buried boulders*: while not providing small interstitial spaces or deeper crevices, partly buried boulders exhibit high vertical relief; the shelter value of this type of habitat may be less or greater than previous types based on the size class and behavior species
- *piled boulders*: this habitat provides deep interstitial spaces of variable sizes.

Emergent epifauna often contribute to the survivorship of marine organisms because of the increased cover and habitat complexity they provide (NEFMC, 1998). Bottom topography, along with sediment type, may also influence the distribution and abundance of benthic, demersal, and pelagic organisms. Geologic features such as submarine canyons, rock ledges, and topographic peaks are potential habitat components that are potentially important to a variety of marine organisms. Bottom topography is often associated with particular sediment types (e.g. deep-water canyons and fine sediments), and may contribute to suitable environmental conditions for the survivorship, growth, and reproduction of fishery resources. (NEFMC, 1998).

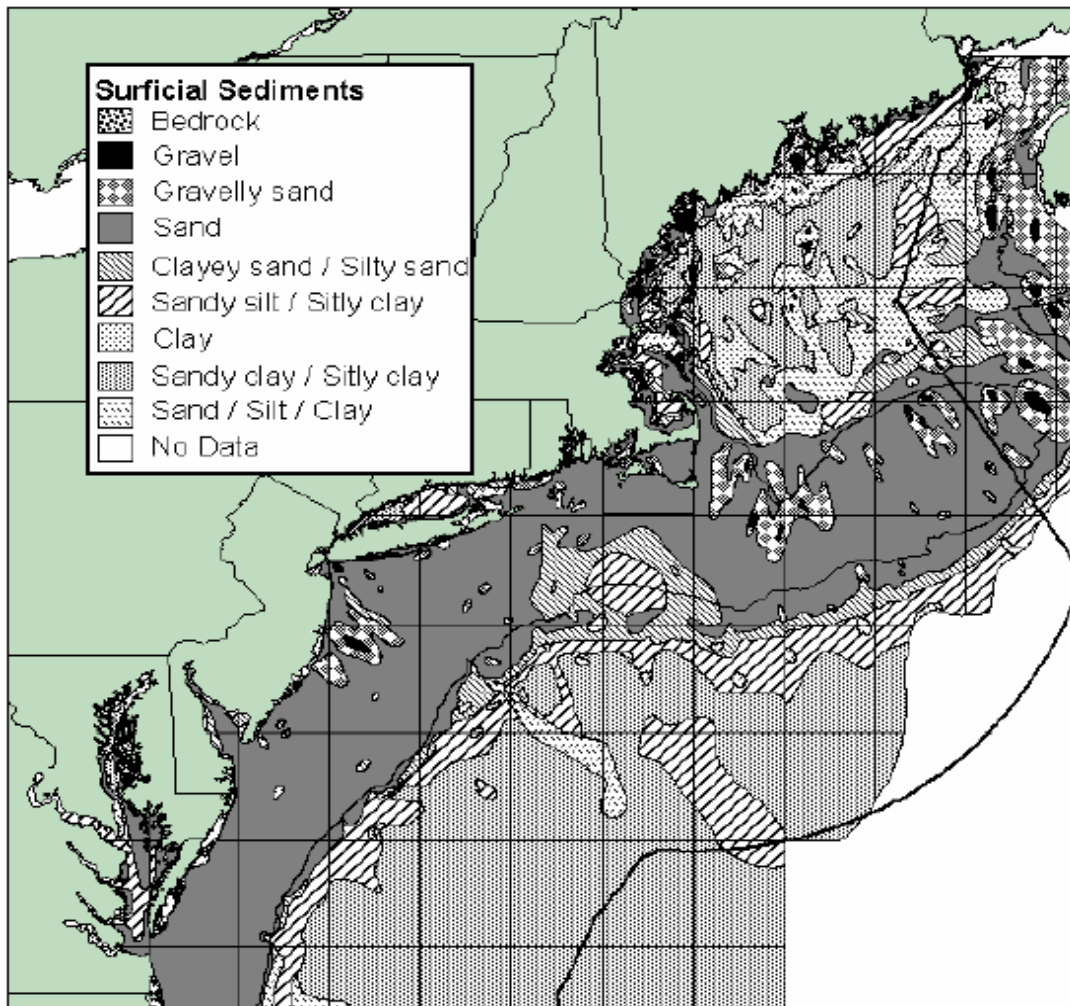


Figure 9- Map showing distribution of surficial sediments, Gulf of Maine, Georges Bank, and southern New England. (NEFMC, 1998).

SEDIMENT TYPE	REGION
bedrock	GOM
gravel <sup>1</sup>	GOM, GB <sup>2</sup> , SNE <sup>3</sup>
gravel-sand	GOM, GB, SNE
sand	GOM, GB, SNE
clayey sand/silty sand	GOM, GB, SNE
sandy silt/clayey silt	GOM, SNE
clay	GOM, GB
sandy clay/silty clay	GOM, SNE
sand/silt/clay	GOM, SNE

**KEY**

1 gravel includes cobble and boulders  
 2 boulders common on the northern edge and northeast Peak of GB (Valentine and Lough 1991)  
 3 SNE (southern New England) is geologically similar to the middle Atlantic bight  
 \* sediment classifications from Poppe *et al.* (1989)

Table 4: Type of surficial sediment\* observed on the seafloor of the New England region.(NEFMC, 1998).

### 2.2.3 ESSENTIAL FISH HABITAT

According to the 1996 SFA Amendments to the Magnuson Act, EFH “means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” (Department of Commerce, 1996) The EFH Final Rule identifies adverse impacts as “any impact that reduces quality and/or quantity

of EFH. Adverse effects may include direct (e.g. contamination or physical disruption), indirect, (e.g. loss of prey, or reduction of species' fecundity), site-specific or habitat-wide impacts including individual, cumulative, or synergistic consequences of actions. Adverse effects from fishing may include physical, chemical, or biological alterations of the substrate, and loss of, or injury to, benthic organisms, prey species and their habitat, and other components of the ecosystem. (NEFMC, 2002) Furthermore, the EFH final rule states that adverse effects “that justify the implementation of management measures should be identifiable” and that the intent of EHF, “is to regulate fishing gears that reduce an essential habitat's capacity to support marine resources, not practices that produce inconsequential changes in the habitat.” (NEFMC, 2002)

Species	Life Stage	Depth	Substrate
American Plaice	A	45-150	Fine-grained sediments or substrate of sand or gravel
American Plaice	J	45-175	Fine-grained sediments or substrate of sand or gravel
Atlantic Cod	A	10-150	Rocks, pebbles, or gravel
Atlantic Cod	J	25-75	Cobble or gravel
Atlantic Halibut	A	20-60	Sand, gravel, or clay
Atlantic Halibut	J	100-700	Sand, gravel, or clay
Haddock	A	35-100	Pebble gravel
Haddock	J	40-150	<i>Broken ground, pebbles, smooth hard sand, smooth</i>
Ocean Pout	A	<110	Dig depressions in soft sediments
Ocean Pout	J	<80	<i>Smooth bottom near rocks or algae</i>
Ocean Pout	L	<50	<i>Close to nesting areas</i>
Ocean Pout	E	<50	<i>Sheltered nests in holes or crevices on hard bottom</i>
Offshore Hake	A	150-380	<i>Bottom habitats</i>
Offshore Hake	J	170-350	<i>Bottom habitats</i>
Pollock	A	15-365	Hard bottom including artificial reefs
Pollock	J	0-250	Aquatic vegetation or a substrate of sand, mud, or
Red Hake	A	10-130	Depressions with a substrate of sand and mud
Red Hake	J	<100	Shell fragments and live scallops
Redfish	A	50-350	Silt, mud, or hard bottom
Redfish	J	25-400	Silt, mud, or hard bottom
White Hake	A	5-325	Mud or fine-grained sand
White Hake	J	5-225	Seagrass beds or substrate of mud or fine-grained
Whiting	A	30-325	All substrate types
Whiting	J	20-270	All substrate types
Windowpane	A	1-75	Mud or fine-grained sand
Windowpane	J	1-100	Mud or fine-grained sand
Winter Flounder	A	1-100	Mud, sand, or gravel
Winter Flounder	J	1-50	Mud or fine-grained sand
Witch Flounder	A	25-300	Fine-grained substrate
Witch Flounder	J	50-450	Fine-grained substrate
Yellowtail Flounder	A	20-50	Sand or sand and mud
Yellowtail Flounder	J	20-50	Sand or sand and mud

**Table 5- Depths and Substrates Associated With Essential Fish Habitats for Benthic Life Stage of 15 Species Included in the New England Multi-Species Fishery Management Plan (NEFMC, 1998).**

### 2.2.3.1 SCOPE OF DESCRIPTION AND SOURCE OF FURTHER INFORMATION

A full description of the affected environment with regards to habitat can be found within the EA that accompanied Amendment 11 to the Northeast Multispecies Fishery Management Plan, Amendment 9 to the Atlantic Sea Scallop Fishery Management Plan, Amendment 1 to the Monkfish FMP, Amendment 1 to the Atlantic Salmon FMP and Sections of the Atlantic Herring FMP. This document is commonly known as the Omnibus EFH Amendment. This Amendment also contained EFH designations for all groundfish species managed by the NEFMC (NEFMC, Am 13 FSEIS, Section 9.0). It should be referenced for further information which is outside the scope of the description included below.

### **2.2.3.2 EFH DESCRIPTIONS FOR SPECIES IN AFFECTED AREA**

Table 5 below summarizes the EFH designations for the target species and those other Multispecies stocks with EFH designations and describes the EFH which can be found in the affected area.

A similar description of the depth and substrate features of EFH for the remaining 18 federally-managed species with benthic life stages is not included because EFH for the 15 species that are managed under the NE Multispecies FMP already covers a broad range of habitat types. The aerial extent of EFH for the juvenile and adult stages of all 33 species includes virtually the entire Northeast shelf.

## **2.3 SOCIAL AND ECONOMIC ENVIRONMENT**

### **2.3.1 BACKGROUND AND DEFINITIONS**

When the Magnuson Act was amended in 1996 by the Sustainable Fisheries Act, a number of standards were identified as requisite for fishery management plans. Among them, National Standard 8 dictates “Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.” In its section on definitions, the Act defines the term “fishing community” as “a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such a community.” (Hall-Arber et al, 1998)

Despite this legal requirement, there is still a dearth of adequate data on this subject, and that which exists is open to interpretation. One of the better sources is the MIT Sea Grant report entitled “*New England’s Fishing Communities*” by Madeleine Hall-Arber et al; 1998. It describes at length the different ways to define a fishing community and how this term may or may not be designated by a geographical location. For the general purposes of this document, we are referring to fishing communities as areas where there are substantial numbers of residents who make their primary living from harvesting the sea. In particular, we are looking at three levels of fishing communities – New England as a region, the Cape and Islands as a sub-region, and Chatham/ Harwich as a community.

This section presents both social and environmental parameters of the affected environment concurrently, as by and large they are inextricably tied together to form the human environment affected by fisheries management decisions such as the proposed action.

## **2.3.2 SOCIAL AND ECONOMIC STATUS OF THE AFFECTED AREA**

### **2.3.2.1 NEW ENGLAND**

The entire New England region has centuries of identification as a collection of fishing communities. The New England fisherman in his yellow slicker and corn cob pipe is a world-famous stereotype, underscored by the reality of thousands of people in this region of all types, men and women, young and old, who still make a living today from harvesting the sea. Georges Bank, the Gulf of Maine and Stellwagen Bank all remain active fishing grounds where generations have ventured and many have died in pursuit of the seafood so prized by this entire region. According to the Northeast Multispecies Amendment 13 Supplemental Environmental Impact Statement (SEIS), in the year 2000 \$105 million worth of groundfish was landed by the New England fishing fleet, which consisted of 1,888 active

vessels. The largest proportion of this fleet used otter trawl gear, followed by hook and line, and gill nets. New Bedford had the highest amount of landings, followed in order by Portland, Gloucester, Chatham and Boston.

The Sector has maintained a place in the groundfish fishery because the Sector has an approved Operations Plan (3 years) and the low impact of the hook fleet in general,. The Sector Operations Plan provides for an opportunity to manage at a local level, thereby creating flexibility to seek scales of efficiency. Justification for a region wide, port by port consideration of human environment impacts from the proposed action can be found in the Amendment 13 SEIS:

It is important, however, to consider the impacts of the proposed alternatives across all communities. Social impacts can be defined as the changes that a fisheries management action may create in people's way of life (how they live, work, play, and interact), people's cultural traditions (shared beliefs, customs, and values), and people's community (population structure, cohesion, stability, and character). As such, social impacts may result from changes in flexibility, opportunity, stability, certainty, safety, and other factors that are not specific to any community, but oftentimes to any individual or entity experiencing changes resulting from a fishing regulation. It is possible that the social impacts of some measures under consideration would not be experienced solely by one community group or another; rather, it is likely that some impacts would be experienced across communities, gear sectors, and vessel size classes. An example of this would be a reduction in allocated DAS if it is applied to all multispecies permit holders. Another example would be a mesh restriction for otter trawl vessels. (NEFMC, Am 13 FSEIA, Section 5.6.1.3)

### **2.3.2.2 PORT ANALYSIS CRITERIA AND OVERVIEW**

Ports in New England were selected for consideration based on the criteria outlined in the Amendment 13 SEIS:

The communities that are likely to experience significant impacts from the alternatives under consideration include those with at least one of the following characteristics:

- an active and large multispecies fishing fleet,
- vessels and shoreside facilities that currently depend on groundfish for a substantial portion of their business,
- geographically close to areas proposed for additional seasonal or year-round closure, and
- vessels that hold a substantial amount of latent effort (inactive DAS). (NEFMC, Am 13 FSEIA, Section 5.6.1.3)

And the assignment criteria outlined in the Marine Fisheries Initiative (MARFIN) report as presented in the NEFMC Amendment 13 SEIS:

The port groups in this document are separated into primary and secondary groups. Primary groups are those communities that are substantially engaged in the groundfish fishery, as explained above, and which are likely to be the most impacted by groundfish management measures. Secondary groups are those communities that may not be substantially dependent or engaged in the groundfish fishery, but have demonstrated some participation in the groundfish fishery since the 1994 fishing year (FY94).” (NEFMC, Am 13 FSEIS, Section 5.6.1.1.1)

#### ***Primary Community Groups***

1. Portland, Maine
2. Portsmouth, New Hampshire
3. Gloucester, Massachusetts

4. Boston, Massachusetts
5. Chatham/Harwichport, Massachusetts
6. New Bedford/Fairhaven, Massachusetts
7. Point Judith, Rhode Island

*Secondary Community Groups*

9. Upper Mid-Coast 1, Maine
10. Lower Mid-Coast 1, Maine
11. NH Seacoast
12. South Shore, Massachusetts
13. Provincetown, Massachusetts
14. Eastern Rhode Island

### **2.3.2.2.1 PORT ANALYSIS SUMMARY**

This information provided in this section is summarized from Amendment 13. Both dependence on fisheries in general and dependence on the multispecies fishery are important to consider for the communities that are involved in groundfish harvesting that are most likely to be impacted by the proposed management measures. The MARFIN Report focuses on overall community dependence on fisheries; the additional information presented in [Amendment 13] focuses on dependence on the multispecies fishery in particular. Both measures of dependence are summarized below. In the MARFIN Report, fishing dependence was assessed based on three indices: 1) the percentage of labor force involved in fishing, 2) the percentage of related occupations within the Bureau of Labor Statistics category of fisheries/forestry/farming, and 3) a summary measure of a series of dependence ratios that compare the number of fishermen per hundred community residents to various alternative occupational roles that fishermen could enter with their particular skill profiles. The last of the indices described above, the occupational alternative index, is the most useful tool for comparison across different communities in the region (MARFIN 2001). The MARFIN Report divides the New England region into eleven sub-regions, which are also consistent with the sub-regions analyzed for this amendment using the IMPLAN model, and then ranks these subregions from highest to lowest, based on fishing dependence. Table 6 below is from the MARFIN report and provides the fishing dependence indices for each sub-region. The MARFIN report explains that the three sub-regions with the highest dependence (Downeast Maine, Upper Midcoast Maine, Cape and Islands) share some characteristics that make these communities significantly more dependent on fishing resources than other regions of New England. These three regions are all relatively isolated from other parts of New England and have small islands and harbors, which give fishermen easy access to nearby fish and shellfish grounds. MARFIN suggests that the occupational alternative index is significantly lower for the Cape and Islands as compared to the two sub-regions in Maine because the Cape has experienced intense pressures from tourism and gentrification. However, there is variation among ports within these sub-regions. For example, Chatham is one town on Cape Cod that has remained an active fishing port over the years and has supported a successful fishing industry despite low biomass levels, increased regulations, and pressures from the recreational fishing and tourism industries. (NEFMC, Am 13 FSEIS, Section 5.6.2)

MARFIN SUB-REGION	% Related Occupations	% of Total Employed	Alternative Occupation Ratio Summary
Downeast Maine	45	3.6	255.54
Upper Midcoast Maine	36	2.0	171.05
Cape and Islands	27	0.79	104.43
Lower Midcoast Maine	23	0.46	51.32
New Bedford/South Shore	27	0.40	38.95
Southern Maine	23	0.39	36.94
Rhode Island	24	0.31	30.86
Gloucester/North Shore	20	0.21	24.91
New Hampshire Coast	8	0.09	9.46
Boston Area	7	0.05	6.39
Connecticut Coast	2	0.01	2.61

**Table 6- Comparative Fishing Dependence Indices for the Eleven Sub-regions of New England (MARFIN 2001 in NEFMC, Am 13 FSEIS, Section 5.6.2)**

For the purposes of this assessment, groundfish revenues expressed as the percentage of total fisheries revenues from federally-permitted vessels homeported in a particular community group represents the community group's current dependence on the groundfish fishery. Information about dependence for all community groups can be found in the Affected Human Environment section of the NEFMC Amendment 13 SEIS. Table 7 ranks average dependence on multispecies from FY99 and FY00 for the communities of interest. (NEFMC, Am 13 FSEIS, Section 5.6.2)

RANK	COMMUNITY GROUP	AVERAGE GROUNDFISH DEPENDENCE FY99-FY00
1	Chatham/Harwichport, MA	71.1%
2	Portland, ME	64.3%
3	Gloucester, MA	61.7%
4	Boston, MA	55.7%
5	Portsmouth, NH	54.7%
6	South Shore, MA	47.7%
7	Provincetown, MA	45.4%
8	NH Seacoast	44%
9	Lower Mid-Coast 1, ME	34%
10	Upper Mid-Coast 1, ME	23.1%
11	New Bedford/Fairhaven, MA	22.3%
12	Point Judith, RI	18.3%
13	Eastern Long Island, NY	16.9%
14	Eastern RI	11.5%
15	Northern Coastal NJ	3%

**Table 7 – Ranking of Dependence on Groundfish for Communities of Interest (NEFMC, Am 13 FSEIS, Section 5.6.2)**

### 2.3.2.3 OVERVIEW OF NEW ENGLAND HOOK FISHERY

Fishing with hooks for groundfish, especially cod, probably began with the earliest human habitation of New England and the Northeast. Earlier settlers of this area fished from the shore and from small boats with hooks made from bone. Later, Europeans were attracted to the northern areas of the New World not by tales of cities of gold, but by tales of abundant cod, which could be salted during long voyages and would fetch high prices in Europe. The Grand Banks rather than Georges Bank were the early choice of these fishermen from England, France, Portugal and Spain, because these grounds were nearer to Europe, and had safer weather and bottom than Georges Bank, 800 miles to the southwest.

During the first 400 years of Europeans and Americans fishing on the Grand Banks, fishermen jigged for cod, with and without bait, from the rails of relatively large vessels. During the 1880s, use of trawl lines from small dories sent out from the mother ship revolutionized the Grand Banks fisheries. The weather and treacherous shoals and reefs precluded the use of dories on Georges Bank, and the groundfish



industry split in two. Large schooners used dories during long trips on the Grand Banks to salt cod. Smaller vessels jigged or laid baited trawl lines on one or two day trips to Georges Bank and the Gulf of Maine to bring cod and those species that salt wouldn't preserve, such as haddock and halibut, to the fresh fish markets in Boston and other urban centers.

The Georges Bank groundfishery changed dramatically in 1905, when the *Spray*, the first otter trawler built in America, was launched from the Fore River Shipyards in Quincy. Slowly at first, and then rapidly following improvements in engine power and gear, otter trawling, large vessels pulling nets, came to dominate the Northeast fishery for cod, haddock, and other groundfish.

Smaller boats, hooking fish, continued to ply the inshore waters from ports close to the fishing grounds, like Chatham and other Cape Cod ports, Montauk in Long Island, and ports in Maine. Hooked Chatham fish, known for its freshness, brought a higher price than other cod at the Fulton Market in New York.” (Hall-Arber et al, 1998)

This historic and environmentally-friendly fishery has managed to maintain a continuous presence in New England. The largest proportion of these boats fish out of Cape Cod, particularly out of Chatham. “Most longline and tub trawl fishing is done from 24-40 ft. diesel-powered work boats. They can use longlines, tub trawls, poles and hand lines. Longline gear has a wire line, which runs from 5 to 20 miles long, with a stringer and hook attached every 6 feet. The tub trawl gear is set in strings, about 300 fathoms long each. Hooks are attached to the line usually about 6 feet apart. The typical vessel carries 15 tubs of baited hooks for a total of 4500 hooks. Depending on the species of fish targeted, bait can consist of clams, mussels, squid, herring, mackerel, menhaden or red fish. (Hall-Arber et al, 1998)

A NMFS survey completed in 1998 shows 321 hook vessels in New England, with 125 of those based out of Chatham, MA., 66 out of Gloucester, and 36 from Portland, Maine. The Sector, which operates out of Chatham and Harwich, is comprised of approximately 50 of the 125 permitted hook vessels; the remaining 75 being mostly part-time and charter vessels.

#### **2.3.2.4 CAPE COD AND THE ISLANDS**

The very name of this region speaks volumes about its centuries-old connection to fishing. Ever since 1602 when Bartholomew Gosnold first landed in what is now Provincetown, fishing has drawn people to Cape Cod. The Pilgrims established fishing villages along the length of this sandy peninsula, and several of these endure today, though in much changed form. A look through any promotional material for the area prominently features fishing as a primary attraction for tourism and retirement activity. Seafood originating from towns such as Chatham, Wellfleet or Eastham is renowned throughout New England for its freshness and quality. A drive through any of these towns at dawn reveals a working world of fishermen, trucks and boats busily plying their trade. A wide range of ancillary businesses such as gear suppliers, fuel, bait, marine equipment, fish markets, and restaurants depend on this industry for survival. Little hard data exists to measure the financial scope of this industry, but it's clearly becoming a priority and we anticipate that such data will become available in the near future. Massachusetts Governor Mitt Romney has recently created the Cape Cod Regional Competitiveness Council. NEMFC Council Chairman John Pappalardo was on their Fisheries/ Agriculture Sub-Committee, and recommended a priority to begin compiling this kind of data so there will be a better picture of the financial and social value of commercial fishing to the Cape and Islands.

(On) The Cape and Islands fishing is a natural occupation for those who live in such proximity to fertile fishing grounds. Furthermore, distances to major population centers with diverse alternative employment are significant. Consequently, only the tourist industry rivals fishing in importance. Because tourism is limited to the mild or warm seasons, fishing is often regarded as an appropriate year-round enterprise....

Several of the Cape Cod & Islands ports are listed among the top ports. For example, Chatham has a ranking of four, Vineyard Haven is ranked as nine, and Sandwich is 14 out of the 36 ranked. On the gentrification scale, Vineyard Haven is ranked 5th and Provincetown and Chatham are ranked 13th and 14th respectively. Despite gentrification, these ports are actively engaged in the fishing industry. Provincetown-Chatham are lumped together by *Fisheries of the United States, 1999*. In comparison to other major U.S. ports 1998-99, Provincetown-Chatham numbered among the top 50 ports with landings of 17.8 million pounds in 1998 and 20 million pounds in 1999. The value of these landings was \$10.2 million in 1998 and \$12.9 million in 1999. While the price per pound was approximately the same as found in Pt. Judith, a port to which Chatham is often compared, the quantities landed were much smaller. Chatham is the most active port of the Cape Cod & Islands sub-region. Though small, the town has an important longline/hook fleet in addition to gillnetters and lobster fishermen, a thriving shellfish industry and a well-developed support industry. Innovation and flexibility are hallmarks of Chatham fishermen. The development of niche fisheries (e.g., dogfish and now, selling to the live fish market) is something that respondents reported with pride. Chatham also has a large retired population (almost a third of the whole). As noted elsewhere, increased cost of property and lack of year round rental property is a major concern. (Hall-Arber et al, 1998)

### **2.3.2.5 CHATHAM/HARWICHPORT, MASSACHUSETTS**

Chatham, MA is a small coastal town on Cape Cod that is primarily known as a tourist destination. In addition to great beaches and quaint shops, another major attraction for tourists in Chatham is the opportunity to view fishermen unload their catch on the Town Pier. Chatham is a geologically diverse area that supports a vast number of different fisheries. According to the 1990 Census, the year-round population was 6,600 in 1989, but it is estimated that this number is increasing significantly in recent years. Close to half of the homes in Chatham are vacant in the winter months, and roughly one-third of the population is over 65. The population of Chatham in 1989 was 98.6% white, and the median household income was \$31,315. The largest category of employed residents in 1995 was the “services” category, and fishing made up 12% of this category, representing a significant portion of the overall employment in Chatham.

According to Chatham harbormaster documents, there are 279 commercial vessels at the Chatham Fish Pier and Stage Harbor mooring areas. It is estimated that about two-thirds of these vessels are small skiffs used for shellfishing. MARFIN found that there are currently 64 vessels with docking permits for the Town Pier; 22 gillnets, 17 longliners, 5 combination, 8 lobster vessels, several handline vessels, several draggers, and four party/charter boats. The Town Pier facilities are maintained by the Town and are dedicated solely to commercial fishing interests. In addition to the Town Pier, the majority of finfish activity actually takes place on the two private docks adjacent to the Town’s facility. MARFIN found that the fleet in Chatham primarily targets Georges Bank stocks of groundfish and dogfish. The major species landed are codfish, dogfish, monkfish, haddock, bluefin tuna, and lobster. Chatham also has a substantial shellfish industry. There are numerous support services for the fishing industry in Chatham such as fish buyers, cutters, gear workers, and shellfish shuckers. Some fishermen in this area only fish part of the year, and others switch their gear to fish for longer periods of time. MARFIN found that the majority of vessels in Chatham are owner-operated. The recreational sector is growing in Chatham. MARFIN determined that the favorite species for recreational fishermen in Chatham were striped bass, followed by bluefish, scup and cod. MARFIN found many fishing related organizations in Chatham and some of them are very active in supporting Chatham fishermen and representing their voice in fisheries management. All fishermen interviewed by MARFIN believe there has been a change in effort over the past ten years, except for shellfish, which has remained stable over the years. Some Chatham fishermen voiced that they want to diversify, but they cannot get the permits to do it. (NEFMC, Am 13 FSEIS, Section 9.4.5.8.3.1)

In FY99 and FY00, Chatham and Harwichport averaged 5,980,850 pounds of groundfish landings and \$7,254,100 in groundfish revenues, establishing it as an important port of landing for groundfish vessels and a primary port for the multispecies fishery. Chatham and Harwichport also serve as homeports for a significant number of multispecies vessels. In FY99 and FY00, an average of 95 multispecies vessels homeported in Chatham/Harwichport generated \$6,844,500 in revenues from multispecies. Chatham’s overall community dependence on multispecies as a percentage of total fisheries revenues from federally-permitted vessels averaged about 71% from FY99 – FY00. It is likely that at least some of the active groundfish vessels in Chatham and Harwichport are even more than 71% dependent on the multispecies fishery. At the social impact informational meeting in Chatham, a few residents of Chatham and Harwichport submitted comments reporting that they have experienced the most significant social impacts from the May closure on Georges Bank to protect cod. The majority of multispecies vessels from Chatham and Harwichport fish for Georges Bank cod and not Gulf of Maine cod. (NEFMC, Am 13 FSEIS, Section 5.6.1.3)

Amendment 13 identified eight primary groundfish ports. This section summarizes recent activity in those ports. All eight ports experienced a decline in the number of vessels with groundfish permits that landed regulated groundfish. The smallest decline was in Portland ME, which experienced a 5 percent decline in the number of permitted vessels landing regulated groundfish. Chatham/Harwichport experienced a 53 percent decline, the largest in any port over this period (FY 2001 to FY 2004). Gloucester and New Bedford/Fairhaven, two other large ports, respectively experienced a 22 percent and a 21 percent decline.

Most ports experienced a decline in total landings between FY 2001 and FY 2004, with New Bedford the sole exception. Boston, New Bedford/Fairhaven, and Pt. Judith saw an increase in total revenues, while all other ports experienced a decline. Groundfish landings declined in all ports, with Boston experiencing the least decline (8 percent) and Eastern Long Island the largest (71 percent). Groundfish landings declined 22 percent in Portland, 19 percent in Gloucester, and 23 percent in New Bedford/Fairhaven. Landings declined 59 percent in Chatham/Harwichport (FW 42 6.5.2.2.6 NEFMC).

### 3.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This EA presents two options including the proposed action and analyzes the impacts of the alternatives which are described below.

	Alternative 1 (No Action)	Alternative 2 (Preferred)
GB Cod Hook Sector Formed?	Yes	Yes
Operations Plan Implemented?	No	Yes
Number of Sector Participants?	0	37
Allocation of GB Cod?	0	Yes 10.03%

**Table 8- Summary of the management and allocation scenarios under the two alternatives**

#### 3.1 ALTERNATIVE 1 (NO ACTION)

**The No Action Alternative is no submission or approval of the Sector Operations Plan NOR any modified Operations Plan. While the Sector would be available under Alternative 1, all vessels would opt to remain in the common pool and fish under the regulations implemented in Amendment 13 and subsequent framework adjustments to the NE Multispecies FMP. Therefore, no allocation of GB cod would be made to the Sector.**

Alternative 1 assumes that no vessels elect to enter the Sector. Under this alternative, all hook and line vessels decide to remain in the common pool and be subject to current regulations. While there is a Sector (but no vessels electing to enter it), the Sector would not have an allocation of GB cod.

### **3.2 ALTERNATIVE 2 (PREFERRED ALTERNATIVE)**

**The Preferred Alternative is approval of the Operations Plan and allocation of GB cod. Sector vessels would be subject to the regulations implemented under the Operations Plan.**

As part of Amendment 13 to the Groundfish Plan, the GB Cod Hook Sector Allocation was passed unanimously by the NEFMC (14-0), as an opportunity for a self-selecting group of fishermen with valid multispecies permits to voluntarily come together and form a cooperative for the purposes of attaining an allocation.

The Sector allocation was approved by the NEFMC and implemented by NMFS as a component to Amendment 13. Now, for the fourth year, the Sector members present the Sector Operations Plan for review and approval by NMFS. The proposed Operations Plan has been deliberated by the prospective Sector members and represents the culmination of bi-weekly stakeholder meetings for over three months. The process by which the Operations Plan was developed is but one example of the social benefits of the Sector. The Operations Plan is the result of authorizing formation of a Sector that empowers stakeholders to more closely “plug in” to the management infrastructure and hold a more active role in development of appropriate regulations. The NEFMC discussed the Operations Plan at its April 12, 2007 meeting, and expressed no concerns with the proposed Operations Plan.

The 35 vessels in the Sector are typical of the traditional hook and line fleet. Vessels range in size from 23 to 42 feet and 200 to 600 horsepower. Most vessels sail from Chatham or Harwichport and return to port after 12-18 hours at sea.

The larger vessels (30-42 ft) in the fleet utilize traditional hand-baited longline gear know as tub-trawl to target cod and haddock. Longliners set their gear before slack tide and haul the gear back shortly after setting is complete. As such, “soak times” are short (2-4 hours) in the GB cod fishery. An average vessel will set between 3600 and 6000 hooks per trip. Vessels that set the higher number of hooks generally fish two tides and are generally larger. Most longline vessels have a captain and one crewman.

Jigging is the other method of harvest for the Sector. By rod and reel or handline, members traditionally target cod and occasionally pollock. These vessels are typically smaller with the captain fishing alone or with one crewman. The remaining vessels longline and jig on the same trip. Oftentimes, these vessels switch seasonally to optimize their catch and minimize their expenses.

Vessels participating in the Sector would be legally bound to uphold and abide by the Operations Plan (Appendix I) and the following Harvesting Rules (which remain the same as the 2006 Harvesting Rules):

#### **Fishing Year 2007-08 (May 2007– April 2008) GB Cod Hook Sector Operations Plan**

##### **HARVESTING RULES For Fishing Year 2007-2008**

The Members and the Participating Vessels of the Sector agree to be legally bound to follow the Harvesting Rules for the fishing year 2007 as described herein, notwithstanding those rules and regulations applicable to common pool Multispecies vessels.

1. Aggregate Sector allocation: GB cod TAC (insert poundage): The Members agree that they will not collectively harvest more GB cod than the Sector TAC and that once the annual TAC is reached no Member will fish commercially with any fishing gear capable of catching GB cod or other species managed under the Plan.
2. Monthly quota targets: Commencing May 2007, 8.33% of the Sector’s cod quota will be allocated to each month of the fishing year. Quota that is not landed during a month will be rolled over into the next month. Once the aggregate monthly quota is reached, no Participating Vessel will be authorized to use fishing gear capable of catching GB cod or other species managed under the Plan.

	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April
%	8.33	16.67	25	33.33	41.67	50	58.33	66.67	75	83.33	91.67	100

3. Days-At-Sea (“DAS”): Each participating Permit and Participating Vessel will be allocated DAS by the Regional Administrator through Amendment 13, as set forth on Exhibit B to the Agreement. This DAS allocation will be considered the Sector’s DAS allocation distributed to individual Members. Members will be required to use an “A”, “B Regular” or “B Reserve” DAS when conducting fishing operations.
4. Sector Call-In: Each Participating Vessel must call in to the Manager or his designated representative within 24 hours prior to departing from port when using fishing gear capable of catching GB cod.
5. DAS Transfer/Lease: A Participating Vessel and/or Permit may not transfer or lease DAS to any non-Sector vessel and/or permit during the fishing year in which the Participating Vessel and/or Permit is enrolled in the Sector.
6. Full retention: All legal size GB cod harvested during any fishing operation must be retained, landed and counted against the Sector’s Aggregate Allocation.
7. Species Trip Limits: There will be no species trip limit for GB cod during the 2007 fishing year. All cod harvested by Members and Participating Vessels shall be considered GB cod for the purposes of the Operations Plan and Agreement;
8. Hook Size: All hooks must be 12/0 circle hooks. For these purposes, 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.
9. GB Seasonal Closure/Spawning Season Restrictions: Participating Vessels are not required to adhere to the seasonal closure on Georges Bank (May 1 through May 31). However, Participating Vessels must continue to comply with the Spawning Season Restrictions (20 day block March 1 through May 31).
10. Closed Areas: Participating Vessels may fish in closed areas to the extent authorized by NMFS.
11. Gear Restrictions: Members and their Participating Vessels may not fish for GB cod or other species managed under the Plan with gear other than jigs, non-automated demersal longline, or handgear. Participating Vessels are exempt from the 3,600 hook limit. The Board reserves the right to prohibit other fishing activities by Members if it determines that those activities undermine or compromise the Plan and the Sector or otherwise conflict with the standards and ethics described in the bylaws and guiding principles.

12. Distribution and pooling of DAS: At the beginning of the fishing year each participating vessel will be allocated DAS identical to the individual baseline established for the vessel by Amendment 13 and subsequently reduced by framework action (FW 42). At any time during the year and subject to Board approval, a Member may request the Manager to redistribute DAS among one or more participating vessels. The Manager shall notify NMFS within 3 calendar days of any such request approved by the Board. Vessel size restrictions (10% length, 20% horsepower) do not apply to the redistribution of DAS among sector vessels. The maximum vessel characteristics are limited to the largest baseline of a Sector permit. Internal Sector redistribution will cease after March 1<sup>st</sup> of a given fishing year in order to provide for administrative action and time to fish the DAS.
13. Observer Notification Requirements in the US/CA Resource Management Area: Members are exempt from the requirement to notify the observer program at least 72 hours prior to entering the Western US/CA area, only while fishing on an A DAS. Members wishing to fish in the B regular DAS program are still required to notify NMFS 72 hours in advance. All other requirements (reporting, vessel monitoring system (VMS)) are maintained. Members electing to enter the Eastern US/CA area are still obligated to comply with the observer notification requirements.
14. Additional DAS Management Measures: Participating vessels are not subject to differential DAS counting requirement implemented through Framework 42.

\*Prorating of DAS and landings: Members and their Participating Vessels that use a DAS (including while engaged in an approved exempted fishing permit (EFP)) prior to the effective date of the Agreement under Article VIII thereof shall have such DAS usage deducted from such Members' individual DAS allocation set forth on Exhibit B hereto, for purposes of the DAS restrictions described in paragraph 3 of this Exhibit C. All GB codfish landed by said Participating Vessels shall be deducted from the Sector's Aggregate Allocation of GB cod. The Manager and/or other Sector management will consult with NMFS as to NMFS' crediting of all GB cod landings against the Sector's Aggregate Allocation.

In addition to the Operations Plan, Sector members would be subject to a legally binding Membership Agreement that would delineate the interaction of members within the Sector, including governance, enforcement, and penalties for non-compliance. The Sector would operate independent of common pool vessels that still operate under a "soft" TAC and input control measures such as DAS as the main controls for managing mortality. The self-governance and monitoring of the Sector would allow members to maintain stewardship of the resource they depend upon and it would create a sense of interconnectedness between fishermen that would encourage compliance with the Sector Membership Agreement and Operations Plan. By managing the Sector at the community level, NMFS would carry less of an enforcement burden. In addition, because community based management is flexible to annual and midseason modifications, it would be more responsive to changes in the condition of the fishery than the traditional process has been.

The table presented below identifies and compares those elements of the Operations Plan that are specific to the Sector (Preferred Alternative) to those elements of current regulations that would pertain to hook vessels in the Common Pool.

	Operations Plan (Preferred Alternative)	Common Pool
#1 – Hard TAC Allocation of GB cod.	Yes	No
#2 – Monthly Quotas	Yes	No
#3 – DAS Allocations	Yes	Yes

#4 – Sector Call-In	Yes	No
#5 – External DAS Transfer/Lease:	No	Yes
#6 – Full retention of GB Cod	Yes	No
#7 – Species Trip Limits (GB Cod)	No	1,000 lbs/day
#8 – Hook Limit (size)	Size 12 circle	Size 12 circle
#9 – GB Seasonal Closure - May	No	Yes
#10 – Closed Areas	Yes	Yes
#11 – Gear Restrictions	Hook Only	No
#11a – Hook Limit (number)	No Limit	3,600
#12 – Redistribution of DAS within sector	Yes	No
#13 – Observer Notification	W US/CA = no	Yes
#14 – Differential DAS counting	No	Yes

**Table 9- Comparison of management measures for hook vessels under the Ops Plan and common pool rules**

#### **4.0 ENVIRONMENTAL CONSEQUENCES**

##### **4.1 ALTERNATIVE 1 (NO ACTION)**

Review: While the Sector would be available through Alternative 1, all vessels would opt to remain in the common pool and fish under the regulations implemented under Amendment 13 and subsequent framework adjustments. A switch from less efficient hook gear to more-efficient gillnet gear is very likely. Therefore, no allocation of GB cod would be made to the Sector.

##### **4.1.1 BIOLOGICAL IMPACTS (ALTERNATIVE 1)**

The biological impacts of Alternative 1 have been analyzed extensively in the Amendment 13 FSEIS (the most recent FSEIS drafted under the NE Multispecies FMP).

##### **Target Species**

Alternative 1 would lead to the conversion of most longline vessels to gillnet vessels. These vessels would not have a hard TAC to constrain them and with the more efficient gillnet gear offering them a wider array of species to target, these vessels are likely to reach their 1000 pound daily GB cod limit and continue fishing, discarding all further GB cod overboard.

##### **Non-target Species/Incidental Catch**

Effects on non-target species are expected to occur under Alternative 1 as a result of the shift from longlining and jigging to gillnetting. Gillnetting has interactions with a broader range of species than longlining, creating more opportunities for incidental catch. In addition, hook gear offers fishermen the opportunity to return discarded fish to the sea alive. Table 10 shows the difference in species interaction between gear types in all areas:

<b>Year</b>	<b>Species</b>	<b>Sink/Anchor Gillnet Landings (metric tons)</b>	<b>Benthic Longline Landings (metric tons)</b>
2004	GOOSEFISH	5,240.90	19.9
2004	MACKEREL, ATLANTIC	5,083.60	n/a

2004	SKATES	2,640.50	136.8
2004	COD, ATLANTIC	2,208.00	104.8
2004	POLLOCK	1,919.00	16
2004	HAKE, WHITE	849.7	48.5
2004	SHARK, SPINY DOGFISH	434.9	16.6
2004	FLOUNDER, WINTER	223.6	3.1
2004	FLOUNDER, YELLOWTAIL	195.4	n/a
2004	HADDOCK	187.5	267.8
2004	SQUIDS	113.8	n/a
2004	SCUPS OR PORGIES	112.1	n/a
2004	LOBSTER, AMERICAN	78.2	1.2
2004	FLOUNDER, SUMMER	70.9	n/a
2004	BLUEFISH	55.4	n/a
2004	REDFISH OR OCEAN PERCH	51.5	n/a
2004	FINFISHES, UNC FOR FOOD	47.1	n/a
2004	FLOUNDER, WITCH	36.2	n/a
2004	FLOUNDER,ATLANTIC,PLAICE	29.9	n/a
2004	HAKE, SILVER	25.8	n/a
2004	WOLFFISH, ATLANTIC	21.5	1.2
2004	MENHADEN, ATLANTIC	17.4	n/a
2004	CUSK	15.2	9.2
2004	HERRING, ATLANTIC	5.9	36
2004	SEA BASS, BLACK	5.8	3.1
2004	TAUTOG	5.4	n/a
2004	SCALLOP, SEA	4.7	6.2
2004	WEAKFISH	3.3	n/a
2004	MACKEREL, SPANISH	2.2	n/a
2004	TUNA, YELLOWFIN	2.2	9.5
2004	SHARK, PORBEAGLE	2.1	n/a
2004	HAKE, ATLANTIC, RED/WHITE	2	n/a
2004	HAKE, RED	1.9	n/a
2004	BUTTERFISH	1.8	n/a
2004	FLATFISH	1.5	n/a
2004	HALIBUT, ATLANTIC	1.5	n/a
2004	BASS, STRIPED	1.2	n/a
2004	SHRIMP, MARINE, OTHER	1.1	1.8
2004	SWORDFISH	n/a	69.7
2004	CRAB, DEEPSEA RED	n/a	33.1
2004	TILEFISHES	n/a	30.7
2004	SHARK, SHORTFIN MAKO	n/a	7.2
2004	TUNA, BIGEYE	n/a	4.9
2004	DOLPHINFISH	n/a	3.8
2004	TUNA, ALBACORE	n/a	1.3
2004	TUNA, BLUEFIN	n/a	1.1

**Table 10-** List of non target species interactions by gear type for bottom longline and sink gillnets in the Northeast Region.



Information is based on a NMFS landings database query for 2004 and filtered to show those species which were caught by bottom longline and sink gillnets in amounts greater than or equal to one (1) metric ton. “n/a” appears when one gear type accumulated landings  $\geq$  1mt while the other gear type did not. This shows that with the application of this filter ( $\geq$  1mt) sink gillnets interact with 38 non target species and bottom longline interacts with 24 non target species. Gillnets interacted with 14 more species than longline.

Table 10 demonstrates the expected interactions with non-target species for both longlining and gillnetting. Of particular concern is the predictable increase in catch rates of yellowtail flounder, winter flounder, white hake, and American plaice, which would occur with any net increase in gillnetting. Each of these species is currently overfished. Skates, pollock, haddock, monkfish, and lobster catch rates may also increase.

### **Protected Species**

Alternative 1 would lead to the conversion of most longline vessels to gillnet vessels, allowing for use of a more efficient gear type to offset the effects of Framework 42 and Amendment 13. Because of the expected shift from longlining and jigging to gillnetting, Alternative 1 would have some slight impacts on protected species. Gillnetting has greater interactions with protected species than longlining. Indeed, the Northeast sink gillnet fishery is classified as a Level I fishery under the MMPA Proposed List of Fisheries (LOF) for 2006. The bottom longline fishery on Georges Bank is considered part of the Category III listing for the Northeast/Mid-Atlantic bottom longline fishery. An explanation of the classifications used in the LOF is as follows:

*Category I fishery* means a commercial fishery determined by the Assistant Administrator to have frequent incidental mortality and serious injury of marine mammals. A commercial fishery that frequently causes mortality or serious injury of marine mammals is one that is by itself responsible for the annual removal of 50 percent or more of any stock's potential biological removal level.

*Category III fishery* means a commercial fishery determined by the Assistant Administrator to have a remote likelihood of, or no known incidental mortality and serious injury of marine mammals. A commercial fishery that has a remote likelihood of causing incidental mortality and serious injury of marine mammals is one that collectively with other fisheries is responsible for the annual removal of:

- (1) Ten percent or less of any marine mammal stock's potential biological removal level,
- or
- (2) More than 10 percent of any marine mammal stock's potential biological removal level, yet that fishery by itself is responsible for the annual removal of 1 percent or less of that stock's potential biological removal 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. (50 CFR 229.2)

Table 11 shows the marine mammals known to have had interactions with sink gillnets versus those known to have interacted with bottom longlines in the GOM. Clearly, the Category I classification of the

sink gillnet fishery under the LOF and the much more extensive list of species affected show that the shift of effort from longlines to gillnets likely under Alternative 1 would have some negative impacts on protected species.

Fishery Description	Estimated # of vessels/persons	Marine mammal species and stocks incidentally killed/injured
Category I		
Northeast sink gillnet	341	Bottlenose dolphin, WNA offshore Common dolphin, WNA Fin whale, WNA Gray seal, WNA Harbor porpoise, GME/BF Harbor seal, WNA Harp seal, WNA Hooded seal, WNA Humpback whale, WNA Minke whale, Canadian east coast North Atlantic right whale, WNA Risso's dolphin, WNA White-sided dolphin, WNA
Category III		
Northeast/Mid-Atlantic bottom longline/hook-and-line	46	None documented

**Table 11 - List of marine mammals known to have interacted with the longline and gillnet fisheries in the Northeast. Excerpted from the 2006 Final LOF (Department of Commerce, 2006)**

### Biological Conclusions

Should the Sector Operations Plan not be approved and an allocation of GB cod not be made to the Sector, it is expected that a large percentage of longline vessels may convert to gillnetting and many jig vessels would be forced to sell their permits because they would not have the protection of the cod allocation and would be out-competed by more efficient vessels. While the overall biological impacts to regulated species are considered and accounted for as part of the TAC specification process, gillnetting has interactions with a broader range of species than longlining, creating more opportunity for negative interactions through incidental catch of non-target and protected species. Thus, instead of the full retention hard TAC hook fishery which would be in place under Alternative 2, Alternative 1 would likely create a conversion to a soft TAC gillnet fishery with the potential for larger amounts of GB regulatory discards.

Due to the fact that FW42 was implemented less than three months prior to the completion of this document, an analysis of the effects of the FW cannot be determined at this time. However, it is speculated that a likely result of reductions in effort could contribute to many smaller vessels relocating effort to the GOM. A benefit of Alternative 2 is the geographical limitations placed on Sector members: the Sector would maintain a traditional fishing fleet around a traditional fishing area. Under the proposed Sector Operations plan (Alternative 2), members are prohibited from fishing in the GOM and therefore cannot redirect effort onto Gulf of Maine stocks.

#### 4.1.2 PHYSICAL ENVIRONMENT AND HABITAT IMPACTS (ALTERNATIVE 1)

The EFH Final Rule identifies adverse impacts as “any impact, which reduces quality and/or quantity of EFH. Adverse effects from fishing may include physical, chemical, or biological alterations of the substrate, and loss of, or injury to, benthic organisms, prey species and their habitat, and other components of the ecosystem” (NEFMC, 1998)

The *Workshop on the Effects of Fishing Gear on Marine Habitats off the Northeastern United States*, October 23-25, 2001 found that longlines cause some low degree impacts in mud, sand and gravel habitats (Department of Commerce, 2002). As stated in the EFH final rule, the intent of EFH “is to regulate fishing gears that reduce an essential habitat's capacity to support marine resources, not practices that produce inconsequential changes in the habitat” (Department of Commerce, 2002).

## **Habitat Conclusions**

Alternative 1 is expected to have neutral habitat impacts. Alternative 1 represents a baseline condition in which the multispecies fishery would be conducted without the operation of the GB Cod Hook Sector. As such, no additional habitat impact would result that haven't already been accounted for. Habitat impacts of the existing fishery have been minimized by the establishment of the habitat closed areas and effort controls implemented through Amendment 13 and subsequent Framework Adjustments.

### **4.1.3 SOCIAL AND ECONOMIC IMPACTS (ALTERNATIVE 1)**

Alternative 1 would have negative social impacts on hook fisherman and on the Chatham/Harwich community. The imposition of a daily trip limit (1,000 lbs.), reduction in DAS (up to 40%), gear restrictions, and continued closed areas would likely combine to eliminate the centuries old hook fleet causing negative social impacts. Alternative 1 would make it unlikely that a directed GB cod fishery using longline gear would be viable (see Table 14 in Section 5.3.1). Thus, communities heavily dependent on GB cod such as Chatham and Harwichport would be disproportionately impacted. The GB Hook Sector was approved in Amendment 13 to provide an opportunity for Hook and line fishermen to continue to pursue the traditional fishery for cod and haddock.

As noted at the Social Impact Informational Meetings, “because of increased regulations in many fisheries, small vessels have lost much of their flexibility to move from one fishery to another. In Chatham, meeting participants felt that regulations have “boxed them in” to particular fisheries, making it difficult or impossible for them to maximize their opportunities and/or adjust to changing conditions. When combined with the inherent limitations of small vessels, the regulations have reduced fishing opportunities to the point that many fishermen cannot guarantee a year-round income from fishing for themselves or for their crew.” (NEFMC, Am 13 FSEIS, Appendix I)

Individuals who wish to continue commercial fishing would likely switch to gillnetting or relocate their homeport. This would cause a disruption within the principle communities (Chatham/Harwichport) for shore based businesses and could eventually lead to the loss of piers, wharfs and docks which are in high demand for residential purposes. This outcome would further diminish the possibility for these communities to reenter the fishery once stocks have rebuilt. The well-documented social ills that follow the collapse of a traditional industry are likely to be a result of implementation of Alternative 1.

In 2004, vessels targeting multispecies in Chatham/Harwichport experienced 59% decrease in landings. This resulted from a combination of increased restrictive measures (notably decreased DAS) and the overfished state of many of the groundfish resources. If the Operations Plan is not approved and an allocation of GB cod is not made to the Sector, hook and line vessels that would otherwise be part of the Sector would likely fish under common pool regulations or switch gear types to ensure the viability of their fishing businesses and attempt to offset their decrease in landings.

Amendment 13 to the NE Multispecies FMP has had severe, disproportional negative economic impacts on the GB hook fleet. Lowering of the GB trip limit from 2000 to 1000 pounds, a 40% cut in DAS, no access to Closed Area I, a 3600 hook limit and the 22 inch minimum size for cod would make hook fishing for Georges Bank cod economically untenable. Subsequent actions have mitigated some of these impacts, such as the haddock SAP authorized through FW 40A.

### **Trip Limit**

The reduction in the daily limit for cod from unlimited (Alternative 2) to 1000 pounds per day would negatively impact the potential revenue of hook fishermen when one considers that 70% of hook vessel revenue on Georges Bank results from GB cod (NEFSC, Demerest, unpublished data, 2004). The reduction in the GB cod trip limit would be devastating to the directed hook and line fleet on GB.

### **DAS Reduction / Differential Counting**

The DAS reduction in Amendment 13 had a negative economic impact on the GB hook fleet as the GB hook fleet is so heavily dependent on GB cod. "In fact, both gillnet and hook gear groups appear to be split between vessels that may experience significant revenue losses and vessels that may experience revenue gains. This disparity is likely due to differences in dependence on Georges Bank cod and Gulf of Maine cod. Because cod tends to represent such a high proportion of total fishing income for these two gear groups, revenues are very sensitive to changes in cod trip limits. Thus, while the Gulf of Maine cod trip limit would be double that of FY2001 the Georges Bank cod trip limit is more restrictive. This means that even with a 45% DAS reduction, hook and gillnet vessels with a high dependence on Gulf of Maine cod can increase total fishing income while vessels with high dependence on Georges Bank cod experience revenue losses." (NEFMC, Am 13 FSEIS, Section 5.4.4.1) Furthermore, the additional 8% DAS reduction as part of Framework 42, accelerates the disproportionately negative economic impact on the GB hook fleet.

While near 50% reduction in DAS that have occurred over the last five years have impacts on all vessels in the fishery, the hook fishery is least likely to adapt under this alternative considering the range of species available to the gear. While the gillnet fleet can switch its efforts to monkfish, skates, lobsters and other species within the multispecies complex, GB hook fishermen cannot. DAS allocated to hook fishermen would likely be leased, or used conservatively to capitalize on the current market price. Typically, the GB codfish is highest in value during the winter months. If this assumption is accurate, hook fishermen (typically in vessels >45 ft) would fish in more dangerous weather in order to compete in the market. This is a serious safety concern.

Changes to the counting of DAS would result in similar impacts to the current GB Hook Sector membership. Framework 42 implemented in August of 2006, brings with it a differential DAS counting scheme of 2:1 to the inshore fishing grounds that the GB hook fleet has traditionally operated in. Without the protection and flexibility of the Sector Operations Plan, (Alternative 2) Sector members would likely relocate effort, switch gear types or take additional risks to fish farther from port to escape the differential DAS counting areas.

### **Gear Limit**

The 3,600 hook limit that applies to common pool vessels was implemented in order to serve as an additional fishing effort control in addition to DAS, analogous to mesh size restrictions for trawl gear or gillnet limits. This hook limit prevents hook fishermen from maximizing opportunities when codfish and haddock are available for harvest in abundance, and benefits similar to a hook limit would be achieved in

the Sector through effort controls such as a hard TAC. The opportunity to fish multiple tides is prevented by regulations that prohibit setting more than 3600 hooks on a given day. By contrast, gillnets fish many tides (even when the vessel owner is home and not using a DAS) and otter trawl vessels have no limit on the number or duration of tows in a 24 hour period. This gear restriction limits the ability of hook boats to recognize sufficient revenue to justify the expense and danger of fishing. Thus, the 3600 hook limit is another factor in Alternative 1 that may drive hook vessels to gillnetting. The 3600 hook limit was introduced in the Interim Rule and fishermen have employed it since May 2002. In that time, longline and jig vessels have lost more than 40% of their income, a far greater percentage than any other gear type (NEFMC, Am 13 DSEIS, Section 9.4). The 3600 hook limit does not allow hook fishermen the flexibility to maximize their catch when cod appear in their geographical range and unnecessarily restricts the opportunity of Sector members to maximize their efficiency and revenue. With these limited revenue opportunities, longline vessel owners would be forced to look for options other than hook fishing, including leasing DAS to gillnetters and otter trawlers, selling their permits, or converting to gillnetting. Alternative 1, because it lacks approval of the Operations Plan and allocation of GB cod, would result in all vessel owners remaining outside the Sector so that they can exercise these options. The potential biological impacts of this shift are identified, characterized and analyzed in Section 5.1.1 of this EA.

## **Social and Economic Conclusions**

The cod and haddock dependent hook fishery of Georges Bank would not survive the multiple regulation changes that would result from Alternative 1. Left with fewer fishing days, a high dependence on GB cod, and a limit on the number of hooks which can be used in a given day, the hook fishery would likely experience a negative economic impact. Framework 42 created several differential DAS counting areas. These areas are designed to protect yellowtail flounder, a species which is neither targeted nor landed by Sector participants.

### **4.2 ALTERNATIVE 2 (PREFERRED ALTERNATIVE)**

The Preferred Alternative is implementation and approval of the Operations Plan. Sector vessels members would be subject to the regulations implemented under the Operations Plan. It should be noted that the number of participating vessels in 2007 (35) is similar to the number of participating vessels in 2006 (37). Additionally, the Harvesting Rules for 2007 are very similar to the Harvesting Rules for 2006. Therefore the biological, habitat, social and economic impacts would be very similar to those from 2006.

#### **4.2.1 BIOLOGICAL IMPACTS (ALTERNATIVE 2: PREFERRED ALTERNATIVE)**

Alternative 2 would have overall positive biological impacts because the Sector Operations Plan would ensure that a traditional portion of GB cod is taken by hook gear rather than more efficient gears that are known to result in greater bycatch and habitat impacts. Hook gear has been used to target cod and haddock on Georges Bank for centuries, and the biological impacts of the Sector would be predictable and minimal. In addition, the imposition of a hard TAC on the Sector would ensure that Sector members are not contributing to overfishing of GB cod. Implementation of the Operations Plan would allow a maximum number of hook vessels to remain active in the hook fishery rather than converting to gillnetting or dragging, leasing days to gillnetters or otter trawlers, or selling their permits to gillnetters or otter trawlers. As a result, the bycatch and habitat impacts common to the gillnet and otter trawl fleet would not expand. In addition, approval of the preferred alternative would prevent the transfer of effort from Georges Bank to the Gulf of Maine. The following section analyzes the impacts that implementation of the Operations Plan would have on GB cod, other species (non-target species/incidental catch), and protected species.

## Target Species

By staying within the hard TAC of GB cod allocated to the Sector (798 mt), approval of the Sector Operations Plan would not compromise groundfish mortality targets of Amendment 13 and FW 42. The Sector prevents 35 dedicated GB cod and haddock vessels from contributing to overfishing. The Sector is granted an exemption from the 3,600 hook limit. Allowance for a larger number of hooks will maximize the efficiency of hook gear, enabling fishermen to capitalize on the presence of GB cod, while still operating within the confines of a hard TAC of GB cod. The Operations Plan calls for full retention of legal sized GB cod. Thus, there would be no regulatory discards of legal sized GB cod associated with the Sector. The full retention clause as well as other stipulations of the Operations Plan such as dealer reporting, would ensure that all cod caught by Sector participants would be landed and counted against the Sector quota in real-time, assuring that the Sector and members of the Sector would not contribute to overfishing of GB cod. The GB Hook Sector would have 35 boats in FY 2007 comprising a *TBD* percentage of the GB cod TAC. 35 vessels represent the maximum number of vessels that would participate in the Sector in FY 2007. Due to the fact that a similar but slightly larger number of vessels participated in the Sector in 2006 (37), the biological impacts are expected to be very similar.

According to the Amendment 13 FEIS, the Sector allocation is consistent with the biological objectives of the Amendment, given adherence to target fishing mortality rates (NEFMC, AM 13 FSEIS, Sec 5.2.4.18). Furthermore, the Amendment 13 FSEIS concluded that the GB hook and gillnet sector alternative should be consistent with rebuilding goals and have only minor biological impacts over time. The Sector allocation assigns an appropriate share, based upon member's landings of GB cod using any gear during the eligibility period, of the resource to the participants. However, with Board and NMFS approval in 2007, Sector members would be able to redistribute DAS within the Sector and not be bound by the vessel size restrictions in the common pool. This allows the Sector members to maximize their profitability while still maintaining non-overfishing fishing effort on the GB cod stock by allowing all vessels to utilize the entire fixed pool of DAS available within the Sector while still operating under the hard TAC of GB cod. While it is possible that in a specific year the Sector may catch more than its share, this would result in reductions in following years (NEFMC, AM 13 FSEIS, Sec 5.2.4.19). The Sector Operations Plan has provisions for a 5% set aside of Sector TAC to guarantee that the Sector would not exceed the TAC in any given FY.

The exemption from the differential DAS counting requirements is necessary to allow Sector vessels the opportunity to target and catch the allocation of GB cod as well as to remain accountable for the collective impacts of the Sector. As stated previously, the target species of the Sector are GB cod and haddock. The Sector believes charging a differential DAS rate amounts to a reduction in effort to harvest their allocation of codfish and to pursue haddock. This is an unnecessary impediment which is part of FW 42 as a remedy to halt/slow down the mortality on stocks which Sector members catch incidentally and infrequently (such as yellowtail flounder, see Table 12). This exemption was implemented via FW42 and has been in use for less than three months, therefore a comprehensive analysis of the effects of the exemption cannot be performed at this time.

It is important to note that Federal regulations state;

A primary motivation for the formation of a sector is the assurance that members of the sector would not face reductions of catch or effort as a result of the actions of vessels outside of the sector (i.e., if the other vessels exceed their target TACs). The final rule is revised, based on public comment, to provide the Regional Administrator the authority to exempt members of a sector from regulations that apply to the fishery at large, if they are in conflict with a sector's approved operations plan. (22914 Federal Register / Vol. 69, No. 81 / Tuesday, April 27, 2004 / Rules and Regulations)

Several specific elements of the Operations Plan have direct impacts on target species. The elements and their impacts on target species are listed below.

- (1) The hard TAC (Operations Plan #1) sets an absolute maximum poundage of cod that the Sector can catch each year and prevents the Sector from overfishing. Should the TAC be exceeded, fishing activity would cease;
- (2) Monthly quota targets (Operations Plan #2) spread out the catch evenly throughout the year and ensure that the Sector does not harvest the Sector allocation in an overly intensive fashion to the detriment of the GB cod stock or to spawning aggregations;
- (3) Days-at-Sea allocations (Operations Plan #3) set an absolute maximum on the amount of effort the hook fleet can expend in attempting to catch the Sector allocation each year. The DAS and the hard TAC work as complementary input and output controls ensuring no overfishing of GB cod by the hook fleet;
- (4) The full retention (Operations Plan #6) clause ensures that all legal sized cod caught by Sector members would be landed and counted against the Sector quota. This would ensure that the Sector does not overfish GB cod through regulatory discards of legal sized GB cod;
- (5) Hook size limits (Operations Plan #8) mandate the size 12 circle hook which would reduce the amount of undersized cod caught, thus reducing regulatory discards of undersized cod. The circle hook requirement allows undersized fish to have better survivability and easier escapement.
- (6) The GB seasonal closure/spawning season restriction (Operations Plan #9) stipulation has minimal impacts on GB cod. Because of the monthly quota targets, only 8.33% of the Sector allocation, or 146,603 pounds (.836% of overall GB cod target TAC) of cod can be caught by the Sector during the month of May. The impact may be offset as Sector members would no longer fish in the Gulf of Maine during the month of May. In addition, Sector members would still be required to take their 20 day spawning block out of the fishery during the months of March, April, or May to protect spawning fish;
- (7) Gear restrictions (Operations Plan #11) ensure that Sector members would only pursue groundfish with hook gear. This would have a positive impact for GB cod as a maximum number of vessels would remain in the hook fishery and the likely percentage of discard mortality would remain low. Exemption from the hook limit will have minimal impacts as effort, landings, and discards are strictly controlled through previous measures (hard TAC of GB cod, layered with DAS);
- (8) Redistribution of DAS (Operations plan #12) is consistent with the intent and stated benefits of Sector Allocation at the time of Final approval of Amendment 13. This element enhances flexibility of membership with respect to their DAS allocations and allows Sector to pursue scales of efficiency to offset resource depletion and increasing overhead by allowing all vessels to utilize the entire fixed pool of DAS available within the Sector while still operating under the hard TAC of GB cod. This would maximize the opportunity of Sector members to harvest their TAC to their fullest potential while not contributing to overfishing of the GB cod stock. Exemption from the 10/20 rule on leasing of DAS within the Sector is also consistent with the stated benefits of the GB Hook Sector. This measure would result in biological accountability of the Sector with social and economic benefits;

- (9) Exemption from the observer requirement to enter Western US/CA (Operations plan #13). The traditional fishery would operate unencumbered by a requirement designed to monitor the catch of GB Yellowtail flounder. Table 12 (below) indicates negligible impact to the GB yellowtail resource;
- (10) Exemption from additional measures designed to protect SOC (yellowtail flounder, winter flounder, white hake, GOM cod, and more) such as differential counting of DAS (Operations Plan #14) would allow the Sector to pursue its allocation of GB cod in traditional fishing areas.

In order to end overfishing on Georges Bank cod, Sector members needed to ensure that landings were held under 455 metric tons for the 2005/06 fishing year. The Table 12 shows that the Sector landed approximately 125 metric tons (275,743.0 pounds) of Georges Bank cod during the 2005/06 fishing year, thereby indicating that Sector members abided by their TAC and were not contributing to overfishing.

### Non-target Species/Incidental Catch

Table 12 summarizes total landings of other species that Sector members caught in FY 2005/06. Sector members would be employing gear that has been used for decades to catch GB cod and haddock. The incidental catch of non-target species is likely to be similar to the incidental catch of non-target species during the qualifying period (1996-2001) because the Sector cod TAC would be identical to the take of Sector members during the qualifying period. A net increase in the incidental catch of non-target species is not expected.

SPECIES	2005	2004
	48 vessels / 455mt GB cod TAC (lbs)	58 vessels / 371mt GB cod TAC (lbs)
Witch Flounder	1	2
Pout, Ocean	3	203
Flounder, Yellowtail	66	7
Flounder, Witch	96	114
Halibut, Atlantic	746	314
Goosefish (tails)	906	1,171
Bluefish	1,040	n/a
Goosefish (whole)	1,466	3,016
Flounder, Winter	1,626	1,020
Skates (wings)	3,711	12,351
Wolffish, Atlantic	7,125	6,656
Redfish or Ocean Perch	11,048	11,479
Pollock	24,081	44,586
Hake, White	26,316	27,564
Cusk	35,654	39,978
Shark, Spiny Dogfish	48,094	41,821
Cod, Atlantic*	275,743	286,190
Haddock*	1,114,401	1,524,706

**Table 12- 2004-06 Georges Bank Hook Sector Landings (Pounds)**

\* target species



Several specific stipulations of the Operations Plan that have impacts on non-target species are listed below:

- (1) The hard TAC for GB cod (Operations Plan #1) stops Sector members from catching non-target species once the hard TAC is caught each year;
- (2) Monthly quota targets for GB cod (Operations Plan #2) stop the Sector from catching non-target species once the monthly quota is caught each month;
- (3) Days-at-Sea allocations (Operations Plan #3) set an absolute maximum on the amount of effort the hook fleet can expend in attempting to catch the Sector allocation of GB cod each year. DAS usage ensures that the effort of the Sector would be similar to the effort of the hook fleet during the qualifying period and puts a cap on the effort that Sector members can put into the fishery. This sets a corollary maximum on expected bycatch; this range of impacts was previously approved in Amendment 13 and two years of Sector Operation Plans;
- (4) Hook size (Operations Plan #8) requires a larger hook size, ensuring that some amount of fish with smaller mouths, such as small flounders, are not caught by Sector members. The circle hook requirement increases survivability for non-target species caught incidentally;
- (5) Gear restrictions (Operations Plan #11) ensure that Sector members would only pursue groundfish with hook gear. This would have a positive impact for GB cod by avoiding the conversion of longliners to gillnetters. In addition, Sector members would not fish in the Gulf of Maine and would therefore have no negative impacts on species in the GOM. Finally, an exemption from the 3,600 hook limit may result in increased interactions with non-target species. However, DAS are still in place to control mortality of non-GB cod species;
- (6) Exemption from additional measures designed to protect SOC (yellowtail flounder, winter flounder, and white hake) such as differential counting of DAS (Operations Plan #14) would not increase impacts on SOC. Impacts to SOC are minimized by the gear requirements (hook only) in the Sector; hook gear primarily targets cod and haddock with minimal bycatch of other species, most notably flounders. The trip limits on SOC are consistent with the proposed limits contained within Framework 42 (white hake) and in some cases they are more restrictive (yellowtail 100lb per trip, GB Winter Flounder 2000lb per trip);
- (7) It is worth noting that the assumed impacts on SOC (non-target species) are **less than** the impacts of limited access scallop vessels on groundfish SOC. Based on the available (observed) bycatch information in this fishery, the impact of hook gear is expected to be similar (white hake) or less (yellowtail flounder, GB winter flounder) than the exempted scallop fishery. (*Final framework 18 to the Scallop FMP (NEFMC) Appendix V, tables 2,3,7*)

### **Protected Species**

Table 3 in Section 3.2.6 of this document lists protected species in New England. Hook and line fishing has minimal interaction with protected species, including humpback whales, harbor seals, grey seals, barndoor skates, and thorny skates (see section 3.2.6 of this EA). Sector members would be employing gear in the same areas they have been fishing for centuries, so the effect on protected species in that area are likely to be similar to what they've been in the past: minimal.

Based on historical data, the Sector is not expected to affect marine mammals since there have been no documented interactions between any endangered marine mammals and the benthic longline fishery on

Georges Bank (there has been one documented longline interaction with a humpback whale in the Gulf of Maine).

Furthermore, the Atlantic Large Whale Take Reduction Plan (ALWTRP) does not affect the use of hook gear because this gear type is not known to seriously impact the health of large whales (e.g., right whales, humpback whales or fin whales) and is listed as a Class III fishery under the ALWTRP: “Other fisheries operating on the U.S. Atlantic Coast have a low level of historical bycatch of large whales... these fisheries include the ... groundfish (bottom) longline/hook-handline fishery...” (DOC, 2004). While ESA listed marine mammals are present in the management area, the alternatives considered in this EA would not have any significant impact on these species. With regard to non-ESA listed marine mammals, the Gulf of Maine benthic longline fishery is currently listed in Category III of the MMPA List of Fisheries. Marine mammal interactions have been recorded between longline gear, harbor seals, and gray seals.

Gilbert and Wynne (1985) studied interactions between harbor seals and commercial fishing gear in New England waters. They reported incidental takes in the groundfish gillnet, herring purse seine, halibut tub trawl (bottom longline), and lobster fisheries. However, they reported that capture of seals by tub trawl was “rare” and that the seals were all hooked through the skin and released alive. Given the general lack of interaction with marine mammals and unlikelihood of mortality due to interaction between seals and tub-trawl, the preferred action would not have significant impacts on harbor or gray seals.

Given the low occurrence of loggerheads and leatherbacks in the study area, the rarity of Green, Kemp’s ridley, and hawksbill, and no evidence of takes with benthic longline gear, it is unlikely that the proposed action would have any adverse impact on sea turtles.

Because implementation of the Operations Plan would assure that most hook vessels remain hook vessels instead of converting to gillnet vessels, this alternative would have a net positive impact on protected species as gillnets have a higher level of interaction with protected species than longline boats (see table 10 in Section 4.1.1 of this EA). Thus, this alternative would have a positive impact on protected species.

Several specific stipulations of the Operations Plan that have impacts on protected species are listed below.

- (1) The hard TAC (Operations Plan #1) stops hook fishing when the aggregate allocation of GB cod is caught ending the potential for interaction;
- (2) Monthly quota targets (Operations Plan #2) stop hook fishing when monthly quotas are caught ending the potential for interaction;
- (3) Days-at-Sea allocations (Operations Plan #3) set an absolute maximum on Sector effort each year;
- (4) Hook size (Operations Plan #8) mandate a size 12 circle hook allowing better survivability prospects for protected species;
- (5) Gear restrictions (Operations Plan #11) ensure that Sector members would only pursue groundfish with hook gear ensuring that Sector members would not use gear such as gillnet gear that has a higher possibility of impacting protected species. An exemption from the hook limit may result in an increased amount of hook gear used, however impacts on protected species will be minimal as hook gear is known for minimal interactions to begin with;

- (6) Exemption from additional measures designed to protect SOC (yellowtail flounder, winter flounder, white hake) such as differential counting of DAS (Operations Plan #14) would allow the Sector to pursue its allocation of GB cod in traditional fishing areas. This would maintain a maximum number of vessels subject to the Sector agreement to only fish with hook and line gear, which would reduce interaction with protected species for these vessels as compared to vessels that employ gear with greater known impacts to protected species.

**Biological Conclusions**

The impacts on GB cod would be positive as the Sector would harvest up to 20% (9.48 % in FY 2007) of the GB cod stock under a hard TAC ensuring that overfishing is not occurring on that portion of the population. The hard TAC (798 mt) and the requirement to use DAS would provide two mechanisms to restrict both the effort and landings of the Sector. Implementation of the Operations Plan would have a net positive effect on the target species (GB cod, GB haddock) and a minimal impact on other species.

**4.2.2 PHYSICAL ENVIRONMENT AND HABITAT IMPACTS  
(ALTERNATIVE 2: PREFERRED ALTERNATIVE)**

See section 5.1.2 for background habitat goals statement from NMFS.

Hook gear is known to have minimal impacts on habitat. By assuring that fishermen within the Sector use hook gear, Alternative 2 results in minimal or positive habitat impacts. In addition, the Sector would operate within a specific geographic area.

This excerpt from Table 135 of the Amendment 13 FEIS describes the habitat implications of sector allocation:

<b>Alternative</b>	<b>Overall Habitat Impact</b>	<b>Feature</b>	<b>Description of Essential Fish Habitat Impact</b>
Sector Allocation	Neutral Impact (0)	Approval of sector allocation proposal brought to NMFS through Council. Sector decides about movement between sectors. Allocation based on documented catch. Hard TACs by species.	As a management measure, sector allocation is not expected to have any significant habitat impacts.
<i>GB hook/gillnet sector</i>	Neutral Impact (0)	Approval of hook sector	This sector allocation program is not expected to have any significant habitat impacts, especially since hook gear has been deemed not to have adverse impacts on EFH.

**Table 13 - Habitat implications of Sector allocation as presented in the Amendment 13 FEIS. Note that this table does not contemplate every aspect of the Operations Plan. (NEFMC, Am 13 FEIS, Section 5.3.6.7)**

Implementation of the Operations Plan would entice more fishermen to opt into the Sector. Thus, more fishermen would be restricted to fishing only on GB. This would reduce habitat impacts in the Gulf of Maine because less hook fishermen would be fishing there, especially when GB is closed during the month of May, and contribute to a positive impact.

Several specific stipulations of the Operations Plan that have impacts on habitat are listed below.

- (1) The hard TAC (Operations Plan #1) ends Sector impacts on habitat when the allocation is caught each year;
- (2) Monthly quota targets (Operations Plan #2) end Sector impacts on habitat when the monthly quota is caught each month;
- (3) Days-at-Sea allocations (Operations Plan #3) set an absolute maximum on fishing effort and therefore habitat interaction for the Sector;
- (4) The GB seasonal closure/spawning season restriction (Operations Plan #9) stipulation has minimal impacts on habitat. Even though fishing on GB would occur during May, any habitat interactions would be offset by a reduction in GOM fishing effort. Furthermore, because the Sector is managed under a hard TAC, based on the catch history of Sector members, there would be no yearly net increase in habitat interactions resulting from implementation of the Operations Plan;
- (5) Gear restrictions (Operations Plan #11) ensure that Sector members would only pursue groundfish with hook gear. Without approval of the Operations Plan it is likely that longliners would decide to gillnet or lease their DAS or transfer their permits to gillnetters or otter trawlers. Transfer of hook effort to otter trawls could have negative habitat implications. The Sector is exempt from the limit on number of hooks. This is in contrast to the 3,600 hook limit put in place in the Interim Rule and maintained in Amendment 13. Allowing more hooks to be deployed by longlines would allow more gear to come into contact with the benthic habitat. This may cause a minimal disturbance, but would have a negligible impact on habitat because hook gear has been shown not to have significant habitat impacts and because the Sector would have effort controls and TAC related closures;

### **Habitat Conclusions**

Implementation of the Operations Plan would have neutral or positive habitat impacts because hook fishermen that are Sector members would remain hook fishing rather than possibly switching their effort to other gear types that have greater habitat impacts.

#### **4.2.3 SOCIAL AND ECONOMIC IMPACTS (ALTERNATIVE 2: PREFERRED ALTERNATIVE)**

Alternative 2 would provide social benefits to the Sector members as well as the Chatham/Harwichport, MA communities. Chatham/Harwichport, MA is more than 71% revenue dependent on groundfish stocks, particularly the GB cod stock. “Chatham’s overall community dependence on multispecies as a percentage of total fisheries revenues from federally-permitted vessels averaged about 71% from FY99 – FY00. It is likely that at least some of the active groundfish vessels in Chatham and Harwichport are even more than 71% dependent on the multispecies fishery”(NEFMC, AM 13 FSEIS, Sec 5.6.1.3). By allowing the Operations Plan to be implemented, fishermen at the local level would be making decisions that impact the Sector members and the larger Chatham/Harwichport community. By making collective decisions, Sector members would foster interconnectedness amongst fishermen that would allow them to become more efficient while protecting the fabric of the traditional fishing community.

The Operations Plan allows a range of management measures that would make the Sector economically viable for both longliners and jiggers. Having a mix of longliners and jiggers in the Sector maximizes cooperation between the two groups, another positive social impact.

Because hook fishing is labor intensive, the Sector would ensure that shoreside jobs such as baiting remain viable opportunities in Chatham/Harwichport. Shoreside jobs and infrastructure are identified and characterized in Section 3.4.4 of this EA. These opportunities would have benefits that trickle throughout the community.

Input controls, such as reduced GB cod trip limits and the GB closure in May, have a significant impact on the Chatham/Harwichport community. “At the social impact informational meeting in Chatham, a few residents of Chatham and Harwichport submitted comments reporting that they have experienced the most significant social impacts from the May closure on Georges Bank to protect cod. The majority of multispecies vessels from Chatham/Harwichport fish for Georges Bank cod and not Gulf of Maine cod. The measures proposed in Amendment 13 that are likely to impact this community group the most are those that modify or add nearshore area closures on Georges Bank and those that modify the Georges Bank cod trip limit.”(NEFMC, AM 13 FSEIS, Sec 5.6.1.3).

The Amendment 13 FEIS concluded that negative distributional impacts affecting Chatham/Harwichport in Amendment 13 are mitigated by Sector allocation:

The Sector allocation and SAPs were specifically designed to foster ways to target healthy stocks to mitigate some of the localized impacts resulting from groundfish management actions. The EA for the settlement agreement estimated that an average of 46.5% of groundfish activity in Chatham and Harwichport could be affected by the recently-implemented Interim Action (NEFMC, AM 13 FSEIS, Sec 5.6.1.3). The input controls of Amendment 13 increased the localized impacts experienced as a result of the Interim Rule. Furthermore, FW42 is expected to result in the following changes in revenues for the common poll vessels: -21 change in total revenue (\$ million); -15 change in groundfish revenue (\$ million); -19% change in total revenue on groundfish trips and in groundfish revenue; and -10% change in total revenue (NEFMC FW42 FSEIS 7.12.5). Sector management would allow for an offset to these costs.

Hook fishermen and the Chatham and Harwichport area are both dependent on GB cod. Revenue dependence of 71% renders the fleet subordinate to the fish. Because of this, distributional impacts of fishery management are most severely felt in Chatham/Harwichport and amongst hook fishermen when they restrict GB cod. By implementing the Operations Plan and allowing the benefits of community based management, these negative distributional impacts would be minimized or mitigated.

Allowing fishermen to take part in localized decision making, as envisioned in the Operations Plan, maximizes the opportunity for fishermen to make safety conscious decisions and potentially save lives. This community based management also allows for rapid response to changing developments on the ocean. Measures such as the monthly quota and DAS usage pulse the fishery so it does not concentrate in times of questionable weather. Having the flexibility of the DAS transfer/lease stipulation leads to cooperative fishing, allowing the most tired vessels to rest at shore and fishermen to work together to avoid bad weather instead of racing to fish. Implementation of the Operations Plan in 2007 would continue to have major safety benefits and a positive social impact for both the Sector and Chatham/Harwichport area.

Implementation of the Operations Plan and allocation of GB cod would allow Sector members the flexibility to implement management measures that promote the most efficient methods of harvesting the GB cod resource with hook gear. This would allow Sector members to remain economically viable while

adjusting to changing economic and fishing conditions. By allowing the Sector to create its own input controls while staying within a hard TAC, Sector members would be able to realize higher economic returns on their investment in the groundfishery. This is crucial, given the anticipated -6.5% in total revenue for the port of Chatham as anticipated in FW42 (NEFMC FW42 FSEIS 7.12.5).

As discussed in section 5.1.3, Chatham/Harwichport has a high degree of dependence on the groundfishery. The economic impacts of recent multispecies fishery management actions (Section 1.3) and the proposed changes in Framework 42 would be reduced in Chatham/Harwichport through implementation of the Operations Plan. The Sector implementation allows a group of vessels to adapt their fishing behavior so that they remain economically viable in the face of increasing restrictions imposed to rebuild groundfish stocks. The ability to form and operate a Sector is an important component of providing flexibility to small commercial fishing entities to mitigate the economic impacts of the Amendment 13 and subsequent framework adjustments. Further, the geographic location of the membership of this Sector provides an opportunity for their fishing communities to reduce localized economic impacts.

The Sector Operations Plan allows flexibility to develop the fishery efficiently and offset economic impacts that result from fishing restrictions required to rebuild groundfish stocks. Sector allocation is cited repeatedly as a measure to mitigate economic harm caused by Amendment 13. For instance, “other opportunities have been created to ensure a viable fishing industry. The proposed action would allow the formation of voluntary, self-selecting sectors. These sectors may be able to develop more efficient means to harvest their portion of the resource.” (NEFMC, Am 13 FSEIS, Section 7.2.10). Furthermore, “the Proposed Action contains a number of measures that would provide small entities with some degree of flexibility to be able to offset at least some portion of the estimated losses in profit. The major offsetting measures include the opportunity to use ... sector allocation...” (NEFMC, Am 13 FSEIS, Section 7.3.3.7.2).

With the increasing costs of fuel and overhead, small boat hook fishermen cannot afford the opportunity to make extended trips to sea as the larger vessels do. They therefore must capitalize on their financial opportunities during the relatively short intervals they are at sea. By fishing under a hard TAC rather than an inefficient daily trip limit, Sector members are maximizing their profitability while minimizing their business expenditures.

The Sector is a group of self-selecting fishermen that have come together voluntarily and cooperatively for the purpose of efficiently harvesting an annual allocation of GB cod. By making collective decisions, Sector members have fostered an interconnectedness amongst fishermen that has allowed them to become more efficient while continuing to protect the fabric of the traditional fishing community. This has been very evident in the 3 years of Sector operation. A quantitative analysis of the Sector indicates that the Sector has provided an opportunity for fishermen to thrive who otherwise believe that they would have been regulated out of existence. The daily presence of supportive fishermen in the Sector office is a testament to the effectiveness of this action. Additionally, the socio-economic benefits gained by the Sector have convinced a second group of fishermen to step forward and realize the potential for Sector management: the GB Cod Fixed Gear Sector. Furthermore, the NEFMC continues to receive applications for Sector management while developing Amendment 16 (which includes the concept of Sector management) and the Sector Omnibus Amendment. It is evident that Sectors are gaining a stronger foothold in the region, and can be partially attributed to the socio-economic success of the Hook Sector.

Several specific stipulations of the Operations Plan that have social and economic impacts are listed below:

- (1) The hard TAC (Operations Plan #1) sets an absolute maximum poundage of fish that the Sector can catch each year. Although there are times of the year when Sector members would not be fishing, they would have peace of mind that comes from knowing the Sector has an allocation and therefore would not contribute to overfishing. In addition, the hard TAC sets a maximum amount of revenue a fisherman or a fishing community can expect for the year. This allows individuals, businesses, and communities to prepare business plans and fishing plans, providing a degree of economic stability. Furthermore, by preventing overfishing in the Sector, the hard TAC allows the possibility of a viable economic future for the hook fleet;
- (2) Monthly quota targets (Operations Plan #2) spread out the catch evenly throughout the year ensuring opportunities for a diverse set of hook fishermen, including those who, for whatever reason, choose to codfish more intensively at one time of the year or another. This would more evenly distribute the revenues of the Sector amongst individual members as well as the community. In addition, this would ensure that revenues from groundfishing are felt year round, which would be positive for fish processors and other shoreside businesses;
- (3) Days-at-Sea allocations (Operations Plan #3) set an absolute maximum on the amount of effort the hook fleet can expend in attempting to catch the Sector allocation each year. DAS restrictions and DAS cuts and their social impacts overall are outside the scope of this EA and well documented in Amendment 13 FSEIS. The total allocation of DAS to the currently approved Hook Sector is consistent with the baseline DAS period created with Amendment 13 and subsequent Frameworks (FW 42). While additional cuts in DAS were implemented in Framework 42, the reason for these reductions is not the result of actions or impacts promulgated by the Sector Operations Plan or membership. For the purposes of this EA, usage of DAS as envisioned in the Operations Plan would serve to maintain the relative distribution of effort within the Sector. This would have positive social benefits by maintaining a social structure that is familiar to the community;
- (4) The Sector call-in provision (Operations Plan #4) allows the Manager to monitor the Sector members so as to ensure that the hard TAC and monthly quotas are not exceeded. This enforcement opportunity would provide economic security for Sector members;
- (5) The Full retention (Operations Plan #6) clause ensures that all legal sized cod caught by Sector members would be landed and counted against the Sector quota. This would prevent regulatory discards of legal sized GB cod, allowing Sector members to maximize per trip revenue. This creates an economic benefit to the Sector, as well as the community and the Nation as a whole because America's fish would not be wasted;
- (6) The GB seasonal closure/spawning season restriction (Operations Plan #9) allows Sector members to catch their monthly quota in May. This would keep from having the entire fleet out of business in May and would have a positive social impact on the community. In addition, the positive economic impact would be having hook fishermen obtain revenues throughout the year;
- (7) Gear restrictions (Operations Plan #11) ensure that Sector members would only pursue groundfish with hook gear. This would have no economic impacts for the community as a whole because fishermen would not change current practices. In addition, fishermen would not incur the cost of switching gear. Exemption from hook limits provides the flexibility for Sector members to maximize revenue by bringing in more fish when the market is better. It also allows fishermen to take advantage of temporal and seasonal opportunities to catch GB cod while avoiding bycatch of other species. Creating the flexibility to maximize revenue per trip

allows the hook fleet to maximize revenue while minimizing expenses. This would bring positive economic impacts;

- (8) The DAS redistribution (Operations Plan #12) stipulation allows Sector members to maximize efficiency within the Sector by minimizing the importance of a member's DAS allocation, thus creating a positive social benefit for the fleet and the community. Through resource sharing, the community would achieve maximum rents while minimizing effort in the short term. By using the resource cooperatively as designed in the Operations Plan, Sector members can stay in business as GB cod stocks rebuild and the fleet is rationalized. As stated earlier, this has corollary safety benefits. Allowing Sector members the necessary flexibility and means to create business plans that offer a reasonable shot at keeping them in business while GB cod rebuilds is the underlying principle of sector allocation; furthermore, exemption from the specific restrictions on inter-vessel leasing (10/20) rule is warranted due to the additional time, area and gear limitations contained within the currently approved Operations Plan. This allows all vessels to utilize the entire fixed pool of DAS available within the Sector while still operating under the hard TAC of GB cod;
- (9) Exemption from Observer notification requirements (Operations Plan #13) in the Western US/CA area allows the Sector members to prosecute their traditional fishery in a manner consistent with the intent of the Sector concept. This measure restores access to traditional fishing grounds by eliminating a restriction which is unnecessary on a fleet of hook and line vessels. Currently, members cannot accurately predict trips into the Western US/CA area 72 hours in advance. Compliance with the 72 hour requirement has resulted in a de-facto area closure for hook-and-line fishermen who traditionally day-fish in pursuit of cod and haddock. Increases in opportunity with have positive economic impacts for sector members;
- (10) Exemption from additional measures designed to protect SOC (yellowtail flounder, winter flounder, white hake) such as differential counting of DAS (Operations Plan #14) allows the Sector to pursue its allocation of GB cod in traditional fishing areas. This measure is consistent with previously stated intents of Amendment 13 in that it does not require that fishermen who are not the source of a necessary conservation measure be required to accept reductions in fishing opportunity. Faith and security in the concept of "sectors being accountable only for their actions" would be maintained.

### **Social and Economic Conclusions**

Alternative 2 would have positive social impacts especially for the GB hook fleet and the Chatham/Harwichport area. Implementation of the Operations Plan provides safety benefits as well as regulatory flexibility that would allow cooperative harvest and the maximization of economic opportunity. Changes to how DAS are counted or reductions in the allocation of A DAS can be mitigated by the ability of the Sector to distribute DAS among members (Operations Plan #12) to maximize opportunity. The Sector's ability to harvest its allocation is also protected through the ability to fish in the Western US/CA area without the burden of 72 hour notification to the Observer program. Exemption from differential DAS counting (intended to protect yellowtail and SOC) would allow the Sector to pursue its allocation of GB cod in traditional fishing areas while not undermining the conservation goals of the NE Multispecies FMP.

Implementation of the Operations Plan and allocation of GB cod would allow the Sector the flexibility it needs to maximize revenues while minimizing expenses in the short term. It would allow Chatham/Harwichport to remain in the commercial groundfish business and benefit from the rebuilding of



our groundfish resource. Distribution of DAS and cod TAC are the main ways the Sector would survive the disproportional impacts of Framework 42 on the Chatham/Harwichport community.

#### **4.3 QUALITATIVE COMPARATIVE IMPACT ASSESSMENT**

As this document describes, there would be different impacts depending on which alternative is chosen. Each alternative is expected to have a negligible impact on the biological and physical environment, thus each alternative is equal in these respects. Alternative 2 offers positive social impacts and Alternative 1 carries with it negative social impacts. In regards to economic impacts, Alternative 2 provides economic benefits to Sector members that may not be realized as compared to Alternative 1. Table 14 summarizes these impacts as well as cumulative impacts of the alternatives.

**Alternative 1 (No Action)**

	Summary Impacts	Trip Limits	DAS Cuts	Gear Restrictions	Closed Areas
<b>Biological Impacts</b>					
<b>Overall</b>	Negligible: the same as under Alternative 1	Longliners would likely convert to gillnetters	Longliners convert gear, redirect effort, or lease days	Longliners convert to gillnetters	Longliners convert to gillnetters
<b>Target Species</b>	Negligible: Longliners would convert to gillnetters with slight impacts	A slight possible increase	Positive	A slight net change in takes is possible	No net change in takes
<b>Non-target Species</b>	Negligible: Gillnets may result in more bycatch with slight impacts	A slight possible increase	Negligible	Negligible	No net change in bycatch
<b>Protected Species</b>	Negligible: Gillnets may result in more interactions	A slight possible increase	Negligible	Negligible	No net change in interactions
<b>Habitat Impacts</b>					
<b>Overall</b>	Negligible	Negligible	Regulate gillnet interactions	Reduce amount of potential interactions and protects habitat	Protect EFH
<b>Social Impacts</b>					
<b>Overall</b>	Negative: Longlining fleet would be eliminated	Limit revenues and hurts local community	Impact longliners, resulting in a less diversified community	Result in less local jobs with less longliners	Prevent hook fishing and hurt community
<b>Chatham / Harwich</b>	Negative: Results may be detrimental to shoreside communities	Place stress on community by forcing gear conversions	Force conversion of longliners to gillnetters, stresses to local communities	Force conversion of longliners to gillnetters, adding stress to local communities	Negligible
<b>Hook Sector</b>	Negative: Limited flexibility and no income certainty	Forces conversion of hook fishers to gillnetters	Forces conversion of hook fishers to gillnetters	Forces conversion of hook fishers to gillnetters	Forces conversion of hook fishers to gillnetters
<b>Economic Impacts</b>					
<b>Overall</b>	Negative: Alternative 1 would have disproportionately negative impacts on hook fleets	Reduce hook fishermen incomes and results in less jobs	Reduces hook fishermen incomes and results in less jobs	Costs of gear conversions reduces hook fishermen incomes and results in less jobs;	Negligible
<b>Chatham / Harwich</b>	Negative: Disproportionate impacts on a major sector of the fleet	Reduce the number of longliners, eliminating local jobs	Reduces the number of longliners, eliminating local jobs	Reduce the number of longliners, eliminating local jobs	Negligible
<b>Hook Sector</b>	Negative: Impacts on hook fisherman would be most severe	Limit hook fishermen revenues	Hurts hook fisherman because gear is less adaptable to different target species	Prevent hook fisherman from maximizing opportunities	Negligible
<b>Cumulative Impacts</b> -- Neutral (O): Alternative 1 would have positive biological and habitat impacts, but the social and economic impacts on longliners and Chatham/Harwich would be negative. The overall impact would be neutral.					

**Table 14- Biological, habitat, social, economic and cumulative impacts of each management measures contemplate in this EA**

**Alternative 2 – PROPOSED ACTION**

Summary Impacts	Aggregate Sector Allocation (Hard TAC)	Monthly Quota Targets	DAS Allocations	Sector Call-In	DAS Transfer /Lease	Full retention	Species Trip Limits	Hook Size	May Seasonal Closure Exemption	Closed Areas	Gear Restrictions	DAS Pooling & Redistribution	US/CA Observations/Requirements/Exemptions
<b>Biological Impacts</b>													
<b>Overall Biological Impacts</b>													
Most beneficial: Less overfishing and bycatch	Positive	Negligible	Positive	Negligible	Negligible	Positive	Negligible	Positive	Negligible	Negligible	Positive	Negligible	Negligible
<b>Target Species</b>													
Positive: Full retention and allocation ensures less overfishing	Positive: Prevents overfishing	Negligible	Positive: Protect against overfishing	Negligible	Negligible	Ensures no overfishing through discards	Negligible	Reduce undersized cod catches	Negligible: Hard TAC controlled	Negligible	Less gillnet boats and potential cod bycatch	Negligible	Negligible
<b>Non-Target Species</b>													
Positive: No net increase in catch of non-target species	Positive: Stops bycatch once TAC is met	Negligible: Temporal limit on bycatch	Positive: Identify number of possible fishing events	Negligible	Negligible	Not Applicable	Negligible	Increase survivability and escapement	Negligible: DAS limited	Negligible	Ensure use of hook gear with less bycatch	Negligible	Negligible
<b>Protected Species</b>													
Positive: No net increase and minimal impacts	Positive: No net increase and minimal impacts	Stop fishing at quota and reduces interactions	Negligible	Negligible	Negligible	Negligible: Hook fishery not considered a threat	Negligible	Increase survivability and escapement	Negligible: Hook fishery not considered a threat	Negligible	Ensure use of hook gear with less bycatch	Not Applicable	Negligible: Hook fishery not considered a threat
<b>Habitat Impacts</b>													
Positive: More hook fisherman and less habitat interactions	Positive: Ends sector impacts once TAC is met	End sector impacts once quota is met	Negligible: Gear considered low impact	Negligible	Negligible	Not Applicable	Negligible	Allow minimal disturbance	Negligible: Gear considered low impact	Negligible	Prevent conversion to gillnet gear	Not Applicable	Negligible: Gear considered low impact
<b>Social Impacts</b>													
<b>Overall Social Impacts</b>													
Positive: Maximum social benefits	Positive: Provides certainty and long range planning	Positive	Positive	Negligible	Negligible	Positive	Negligible	Not Applicable	Positive: Safety and flexibility increase	Negligible	Not Applicable	Positive	Positive: Safety flexibility increase
<b>Chatham/Harwich</b>													
Positive: Shoreside jobs would remain	Positive: Maintains low impact hook fishery	Spread catch throughout year and creates more opportunities	Positive: Continue social structure familiar to community	Negligible	Negligible	Ends regulatory discards and creates goodwill	Negligible	Not Applicable	Positive: Permits DAS to be used during safer month	Negligible	Not Applicable	Maximizes efficiency within sector	Positive: Restores spatial access to hook fishery
<b>Hook Sector</b>													
Positive: Safety benefits, more cooperation	Positive: Maintains low impact hook fishery	Spread catch throughout year and creates more opportunities	Negligible	Negligible	Negligible	Ends regulatory discards and increases efficiency	Negligible	Not Applicable	Positive: Restores temporal access to hook fishery	Negligible	Not Applicable	Maximizes efficiency within sector	Positive: Restores spatial access to hook fishery

<b>Economic Impacts</b>													
<b>Overall Economic Impacts</b>													
Positive: Most efficient measures would be utilized	Positive: Allows for planning and ensures economic stability	Positive: Evenly distribute resources throughout year	Positive	Negligible	Negligible	Positive	Negligible	Positive	Negligible: Possible benefit to members due to limited supply	Negligible	Not Applicable	Positive	Positi
<b>Chatham/Harwich</b>													
Positive: Small entity flexibility	Positive: Provides realistic expectations of economic activity	Positive: Provide groundfish to communities throughout the year	Maintain relative distribution of catches	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible: Allows segment of fleet to provide opportunity during closure	Negligible	Not Applicable	Negligible	Positi
<b>Hook Sector</b>													
Positive: Creates efficiency and stabilizes revenues	Positive: Allows for planning	Positive: Distributes catches throughout the year and creates stability	Maintain relative distribution of catches	Positive: ensures economic security for Sector members	Negligible	Prevents discards and maximizes per trip revenue	Negligible	Increase survivability and escapement	Positive: Allows portion of TAC to be fished during "good" weather month	Negligible	Create flexibility and allows fishers to maximize efficiency	Positive: Maximizes efficiency	Positi
<b>Cumulative Impacts</b> -- Positive (+): This alternative would reap the positive biological and habitat impacts of Amendment 13, while still protecting hook fishermen and the local community of Chatham/Harwich													

**Table 14 continued- Biological, habitat, social, economic and cumulative impacts of each management measures contemplate in this EA**

#### **4.4 ESSENTIAL FISH HABITAT (EFH) ASSESSMENT**

According to the Magnuson Act, EFH “means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (Department of Commerce, 1996). The EFH Final Rule identifies adverse impacts as “any impact, which reduces quality and/or quantity of EFH. Adverse effects from fishing may include physical, chemical, or biological alterations of the substrate, and loss of, or injury to, benthic organisms, prey species and their habitat, and other components of the ecosystem” (NEFMC, 1998).

The *Workshop on the Effects of Fishing Gear on Marine Habitats off the Northeastern United States*, October 23-25, 2001 had the following findings regarding the impacts of longline on marine habitats: “The panel concluded that longlines cause some low degree impacts in mud, sand and gravel habitats” (Department of Commerce, 2002). Use of longline would have “low degree impacts” to habitats. As stated in the EFH final rule, the intent of EFH “is to regulate fishing gears that reduce an essential habitat's capacity to support marine resources, not practices that produce inconsequential changes in the habitat” (Department of Commerce, 2002). Therefore, each of the alternatives in this EA would have negligible impact on EFH.

#### **5.0 CUMULATIVE IMPACTS**

Cumulative impacts are the impacts on the environment that results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. Table 14 provides an overview of the cumulative impacts of the two alternatives. Much of the cumulative effects outlined therein and related below are derivative of the detailed Environmental Impacts sections of this document (Sections 4.0 to 4.4) and the cumulative impacts discussion in the Amendment 13 FSEIS (the most recent FSEIS). The analyses that follow are qualitative in nature.

##### **5.1 GEOGRAPHIC AND TEMPORAL SCOPE**

Since Alternative 1 is a continuation of the input controls that have evolved since Amendment 5, the temporal scope of the cumulative effects assessment begins in 1994 with the implementation of the DAS system.

As mandated in Amendment 13, Sectors must submit an EA and Ops Plan to the RO on an annual basis. As such, the scope of the Ops Plan only spans one fishing year; however, due to the constantly changing regulatory environment, the EA must look forward to the reasonably foreseeable future actions of NMFS and the NEFMC and attempt to analyze the potential impacts they may have on the Sector. The temporal scope of the cumulative impacts analysis includes the current condition of the ecosystem components, with specific focus on the last three years during which the Sector has been operating and looks forward to the reasonably foreseeable future actions of NMFS and the NEFMC in an effort to analyze the potential impacts they may have on the Sector.

##### **5.1.1 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS**

Past and present, actions in the NE Multispecies fishery are described, and their impacts summarized, in Section 1.3 of this document. The cumulative impacts of the most recent actions in the NE Multispecies are summarized here.

### *Cumulative Sector Impacts following implementation of Frameworks 40A, 40B, 41 and 42*

The four recent framework adjustments (Frameworks 40A, 40B, 41, 42) resulted in minimal but positive cumulative impacts to the Sector. The Sector's ability to access the SAP has had positive impacts; the Sector would maintain a similar allocation of GB cod (10 – 13%) creating minimal impacts; and the Sector would catch approximately the same amount of haddock in FY 05 as it did in FY 04. Impacts to non-target species should remain at very low levels (>1%) due to the gear restrictions which are part of the Sector Harvest Rules (hook and line only). Continued dependence on DAS remains a vulnerability to the Sector, and continues to link the Sector to the actions of the common pool. FW 42 demonstrated this with an 8% reduction in the allocated A DAS. The measures in FW 42 are designed to have overall positive impacts on biological resources (i.e., reduce mortality on certain groundfish stocks); however, the FW 42 measures (specifically DAS reduction and trip limits) have disproportionate impacts on Sector members due to the prohibition on use of non-hook gear, restrictions on DAS leasing, and capacity of the fleet.

### *Reasonably Foreseeable Future Actions*

The NEFMC is considering initiating a Sector Omnibus Amendment to be developed by the Ad Hoc Sector Omnibus Committee. Creation of this Amendment would allow for insertion of Sector-specific language into all FMPs under the NEFMC, in an attempt to streamline future sector development and implementation.

Additionally, the NEFMC has started work on the next regulatory action: Amendment 16. The previous Amendment (13) called for a review of multispecies rebuilding progress and, if necessary, adjustments to regulations at the beginning of the 2009 FY. For several stocks, Amendment 13 calls for further reductions in fishing mortality beginning in 2009. Assessments are planned in 2008 to evaluate stock status and rebuilding targets. Amendment 16 is being initiated so that the NEFMC can react quickly to the results of those assessments in order to continue stock rebuilding and achieve optimum yield from the fishery (NEFMC).

## **5.2 ALTERNATIVE 1: NO ACTION**

No cumulative impacts have been identified for Alternative 1 that has not been analyzed by the FSEIS for Framework 42. Because Alternative 1 is a continuation of the input controls that have evolved since Amendment 5 in the 1990s, the cumulative impacts are the same as Framework 42. The cumulative impacts were analyzed in Framework 42: “The cumulative impacts of past and present management actions have resulted in substantial effort reductions in the multispecies fishery. Although this has benefited some stocks (GB haddock), rebuilding has been slow for others (GB and GOM cod, CC/GOM, GB and SNE/MA yellowtail flounder, GB and SNE/MA winter flounder and white hake). It is anticipated that new effort reductions implemented under Amendment 13 and this action will end overfishing for all stocks, while also creating new opportunities for groundfish vessels to target healthy stocks” (NEFMC FW42 Section 7.11.4).

Additionally, “The cumulative effects of this action are not likely to have a significant impact on regulated groundfish stocks (target and non-target), non-groundfish species (incidental catch and bycatch), endangered and other protected species, and habitat, including non-fishing effects. The overall reductions in fishing effort adopted by previous management actions would have a positive biological impact on groundfish and other stocks. This action would further reduce

fishing effort on many stocks in order to maintain progress in the rebuilding program. While there may be a small increase in mortality for some stocks (GB haddock) as a result of increased SAPs and the use of Category B (regular) DAS, this increase is not likely to have a significant impact. With respect to endangered and other protected species, the proposed measures would have negligible impacts. Impacts on habitat and EFH are also expected to be minimal. Therefore, the Proposed Action would not result in significant cumulative impacts to fisheries resources, habitat, and protected species. The cumulative effects of this action are likely to have a significant impact on fishing communities and the economic returns from the groundfish fishery. Additional short-term revenue losses are expected to result from the need to reduce fishing mortality on several stocks to continue stock rebuilding” (NEFMC FW42, Section 7.11.4)

While the overall cumulative impacts of Alternative 1 are considered to be neutral, the cod dependent hook fishery of Georges Bank would not survive the multiple regulation changes that apply to common pool vessels and Alternative 1. Left with fewer DAS, a high dependence on GB cod, and a limit on the number of hooks which can be used in a given day, the hook fishery would likely experience negative additive direct and indirect social and economic impacts. Furthermore, additional restrictive measures are expected in Amendment 16 if the 2008 assessments reflect the current mindset of much of the fleet, including further reductions in DAS and trip limits. The Sector Omnibus Amendment, if completed in a timely manner and implemented appropriately, may provide minimal relief.

### **5.3 ALTERNATIVE 2 (PREFERRED ALTERNATIVE)**

Alternative 2 would approve and implement the Sector Operations Plan and allocate 798 mt of GB cod to the Sector. This would have minimal or positive direct biological, habitat, social and economic benefits, as outlined in Section 4.3 of this EA, and also by the excerpt below from Table 363, Section 5.7 of the Amendment 13 FSEIS. It should be noted that this excerpt does not present cumulative impacts per se, but instead demonstrates the minimal to positive nature of the categorical impacts of sector allocation, both general and gear specific. However, it should be noted that because of the limited scope (in 2006, 37 vessels compromising 10.03% of the catch for one of 15 managed species) of the proposed management measure, the resulting cumulative impacts are minimal relative to the overall context of the NE Multispecies fishery. Implementation of the Operations Plan would allow the Sector the flexibility it needs to maximize revenues while minimizing expenses in the short term. It would allow Chatham/Harwichport to remain in the commercial groundfish business and benefit from the rebuilding of our groundfish resource. This has been very evident in the 3 years of Sector operation. A quantitative analysis of the Sector indicates that the Sector has provided an opportunity for fishermen to thrive who otherwise believe that they would have been regulated out of existence. The daily presence of supportive fishermen in the Sector office is a testament to the effectiveness of this action. Additionally, the socio-economic benefits gained by the Sector have convinced a second group of fishermen to step forward and realize the potential for Sector management: the GB Cod Fixed Gear Sector. Furthermore, the NEFMC continues to receive applications for Sector management while developing Amendment 16 (which includes the concept of Sector management) and the Sector Omnibus Amendment. It is evident that Sectors are gaining a stronger foothold in the region, and can be partially attributed to the socio-economic success of the Hook Sector.

GB has been intensively fished for decades or centuries with all manner of gear for all manner of species. Consequently, many fisheries have impacted the ecosystem found there. It is unlikely that the proposed action would interact with any other fisheries or actions to cause direct impacts on biological, physical, social, or economic resources in the GB management area that, when

considered together, would result in cumulative impacts. Rather, in the context of the groundfish fishery, the proposed action would cause some minor direct and indirect impacts.

Alternative Name	Effects on Communities	Effects on Groundfish Stocks	Effects on Protected Species	Effects on Habitat
Sector Allocation (general) (Proposed action)	(+) increased opportunity participate in regulatory process; provides autonomy to fishers	(O)	(O)	(O)
• Formation of a Sector				
• Sector Review and Approval				
o Option 1 – Streamlined Approval Process				
o Option 2 – Periodic Adjustment Process (Proposed action)				
• Movement Between Sectors				
o Option 1				
o Option 2				
o Option 3 (Proposed action)				
• Allocation of Resources				
o Option 1				
o Option 2 (Proposed action)				
• Mortality/Conservation Controls				
• Enforcement of Sector Provisions/VMS Requirements				
• Interaction of Sector with Common Pool Vessels				
Georges Bank Hook/Gillnet Sector Allocation	(+) increased opportunity to participate in regulatory process; provides autonomy to GB cod hook and gillnet sectors	(+) gear restrictions, TACs, closed seasons	(O)	(O)
• Georges Bank Cod Hook Sector (Proposed action)				
• Georges Bank Cod Gillnet Sector (Not selected)				

**Table 15- Impacts of Sector Allocation components of Amendment 13 (NEFMC, Am 13 FSEIS, Section 5.7)**

While Alternative 2 would have negligible biological and habitat implications, its combined positive social and economic impacts constitute a positive impact, mainly experienced by the GB hook fleet and the Chatham/Harwichport area. Although negligible, the biological impacts of Alternative 2 have the potential to be positive: a portion of GB cod landings would be securely constrained under the three fold protection of a hard TAC, DAS usage, and full retention. When social and economic impacts are considered, Alternative 2 would have positive cumulative impacts for the GB hook fleet and the Chatham/Harwichport area that would not be realized under Alternative 1. Because the GB cod trip limit is reduced, past actions, such as Amendment 13, and Framework 42, have a disproportionate negative impacts on communities and fleets that are most dependent on GB cod. Chatham/Harwichport and the GB hook fleet, therefore, are expected to share a disproportionate burden under the current regulatory environment. The disproportionate economic impacts of the past, present and reasonably foreseeable future actions (see Section 1.3 for a detailed description of management actions in the NE Multispecies fishery) can be mitigated through the positive direct impacts that would be experienced through implementation of the Operations Plan: “the approval of the Ho[o]k sector may mitigate these impacts to some extent” (NEFMC, Am 13 FSEIS, Executive Summary). The net positive impacts that would be derived from many factors outlined in Sections 3.2, 4.2, and 4.2.2 of this EA, include the preservation of bottom longlining as a viable business, the preservation of the infrastructure that supports it, the localized, cooperative effort that crafted the Operations Plan, and the social benefits generated by working closely within the community with the GB Cod Fixed Gear Sector. The excerpt below, relevant parts of Table 367, Section 5.7 of the Amendment 13 FSEIS, presents the cumulative impacts of the proposed action:



Alternative Name	Cumulative Effects on Communities	Cumulative Effects on Groundfish Stocks	Cumulative Effects on Protected Species	Cumulative Effects on Species	Cumulative Effects on Habitat
Georges Bank Hook/Gillnet Sector Allocation	positive for hook/gillnet sectors, extent unknown	positive, low (Georges Bank)	unknown	none	none
• Georges Bank Cod Hook Sector (selected)					

**Table 16- Relevant excerpts from the summary of impacts of Amendment 13 (NEFMC, Am 13 FSEIS, Section 5.7)**

The Amendment 13 FSEIS concluded that sector allocation had the potential to result in some level of positive cumulative impacts for fishermen and their associated communities, since it provides them with more control over specific management measures that would affect their fishing practices, lending flexibility to fishers and a greater sense of involvement in the regulatory process. Amendment 13 found cumulative effects on the resource and habitat as a result of sector allocation to be negligible (NEFMC, Am 13 FSEIS, Section 5.7.7.1). Operation of the Sector over the past three years has supported the conclusion of Amendment 13, and the economic benefits, with negligible biological impacts, are expected to continue with the approval of the Sector Operations Plan for the 2007 fishing year.

Furthermore, by creating and implementing a model for other groups to create sectors, Alternative 2 would have a positive, though unquantifiable, social cumulative impact. As groups of fishermen voluntarily come together for the purpose of securing a resource allocation in New England, the Operations Plan provides a model. By being the first fishermen in New England to voluntarily accept a hard TAC-based and community based management regime, the Sector is creating a positive example for the fleet that could translate into social and economic benefit to other fishing groups, while continuing to meet mortality objectives on groundfish stocks. Working with the local gillnet fleet to form the GB Cod Fixed Gear Sector has provided economic (cost-sharing) opportunities and social cohesiveness within the community.

Past management measures, beginning with Amendment 5 in the mid-1990's, have, over time, restricted GB hook fishermen with input controls that make hook fishing more and more inefficient. This inefficiency, as characterized in Alternative 1, would likely to force most longliners to switch to other gears, otherwise shift their effort to more efficient vessels, or relocate their businesses to the GOM. As an extension of this scenario, Framework 42 continued to reduce opportunities to harvest healthy stocks as it strives to maintain the rebuilding program initiated in Amendment 13. Amendment 16 would most likely further reduce effort and increase inefficiency in the common pool, but would compliment the Sector Omnibus Amendment and allow for pre-existing Sectors to further develop and refine their operations, maximizing the flexibility and accountability of the Sector. Alternative 2 provides an opportunity to mitigate the social and economic impacts of Framework 42 by allowing access to the target species while limiting impacts on Species of Concern (SOC). Exclusive use of hook and line gear ensures that catch of SOC is minimal (see Table 10). While GB cod is listed as a SOC, the Sector's hard TAC would control impacts on this stock. The continued use of DAS and the flexibility to redistribute these DAS onto the safest platforms insures positive social and economic impacts to the Sector. The Sector, with implementation of the Operations Plan, has a positive cumulative impact on the GB hook fleet and the Chatham/Harwichport area as it allows the fleet to counter the inefficiencies of past management actions.

### **Summary of Cumulative Impacts**

As a whole, approval and implementation of the suite of management measures contained in the Operations Plan (Alternative 2), when considered in conjunction with other past, present and reasonably foreseeable future actions, would result in minor positive social and economic cumulative impacts. It would not result in cumulative impacts to non-target species, target species, protected resources, or habitat. Each measure in the Operations Plan is designed to be a piece of a larger whole that creates an opportunity for the GB hook fleet to survive and for Chatham/Harwichport to remain an active part of the

commercial groundfish industry in New England. Alternative 1 would not provide additional social or economic benefit to Sector members, nor would it provide any additional protection or benefits to non-target species, target species, protected resources, or habitat, resulting in neutral cumulative impacts. Whereas the biological and habitat impacts of Alternative 2 are not compelling in and of themselves, when coupled with the positive social and economic impacts that Alternative 2 offers, Alternative 2 offers a positive cumulative impact.

## **6.0 LIST OF PREPARERS**

This document was prepared through the cooperative efforts of members of the staffs of the Cape Cod Commercial Hook Fishermen's Association, NOAA Fisheries Service & NEFMC

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## **7.0 LIST OF AGENCIES AND PERSONS CONSULTED**

The Northeast Regional Office (NERO) of NMFS and the NEFMC Staff were consulted in preparing this EA.

## **8.0 REGULATORY IMPACT REVIEW**

### Description of the Management Objectives

The NEFMC has authorized the formation of Sectors under Amendment 13 to the Northeast Multispecies FMP and has set forth criteria for establishing Sectors in that action. The Sector Ops Plan, approved and implemented in Amendment 13, provides the specific details for how the Sector would function and is required to finalize formation of the Sector. For specific Goals and Objectives to the Amendment, and to see specific goals for the Sector, please refer to Section 1.2.2 of the EA. Additionally, Sector objectives must take into account the requirements of multiple laws and mandates, including Magnuson Act, ESA, MMPA, National Environmental Policy Act (NEPA), Administrative Procedure Act (APA), Paperwork Reduction Act (PRA), Information Quality Act (DQA), and EOs 13132 and 13158. For further information on these laws and mandates, please refer to Section 8 of the EA.

### Description of the Fishery

The Sector is a group of 35 self-selecting, small, dayboat hook fishermen that have come together voluntarily and cooperatively for the purposes of efficiently harvesting an annual allocation of GB cod.

Each business qualifies as a Small Business under the Small Business Administration (SBA). The Sector would operate under a hard TAC of GB cod to meet the overfishing mandates of the SFA amendment to the Magnuson Act. The Sector participants target GB cod and haddock as primary species. They operate year-round, but most intensely from the late-spring to late-fall. They would operate within the GB Hook Sector Operating Area, defined in Section 2.2 in the EA, and would be legally bound to adhering to the Sector's Harvesting Rules, outlined in Section 3.2 of the EA.

#### Statement of the Problem

Amendment 13 would end overfishing and initiate rebuilding plans for stocks in the groundfish complex, as well as minimize bycatch and protect habitat. It would also bring about many positive environmental changes and increased revenue in the long-term but is likely to result in social and economic costs for the New England groundfish fleet in the short-term. Additionally, input control management measures have diminished other fleets in the Gulf of Maine and on Georges Bank. Low trip limits and a diminished GB cod stock status have severely undermined the ability of the GB hook fleet to remain economically viable.

The Sector would allow the GB hook fleet to survive and prosper as stocks rebuild. In addition, the Sector would provide a model for other New England day boat fleets that seek alternative management options. The Sector represents a heretofore unique opportunity for fishermen to lead the way in promoting conservation and stewardship of the resources on which they depend. Authorization of the Sector would provide a vehicle to mitigate many of the Amendment 13 impacts. Likewise, full implementation of the GB Cod Hook Sector Ops Plan would establish additional means to generate social, economic, and environmental efficiencies. Authorization of the Sector would initiate a viable framework for GB hook vessels to alleviate social and economic hardships while meeting the biological objectives of Amendment 13. For further analysis, please refer to Section 1.3 of the EA.

#### Description and Economic Analysis of Each Selected Alternative

Alternative 1 is a No Action Alternative: implementation of the Sector Allocation without submission or approval of neither the Operations Plan nor any modified Operations Plan. While the Sector would be available under Alternative 1, all vessels would opt to remain in the Common Pool and fish under the regulations implemented in Amendment 13 and subsequent framework adjustments to the Northeast Multispecies FMP. Therefore, no allocation of GB cod would be made to the Sector.

Alternative 1 would have negative social impacts on local hook fishermen and on the Chatham/Harwich community. The daily GB cod trip limit, in addition to a continued reduction in DAS, gear restrictions, and ever-increasing closed areas would likely eliminate the traditional, small-boat fleet, or encourage fishermen to switch to less-environmentally friendly (and more efficient) gear such as gillnets or trawls. As noted at the Social Impact Informational Meetings, "because of increased regulations in many fisheries, small vessels have lost much of their flexibility to move from one fishery to another. In Chatham, meeting participants felt that regulations have 'boxed them in' to particular fisheries, making it difficult or impossible for them to maximize their opportunities and/or adjust to changing conditions. When combined with the inherent limitations of small vessels, the regulations have reduced fishing opportunities to the point that many fishermen cannot guarantee a year-round income from fishing for themselves or for their crew" (NEFMC, Am 13 FSEIS, Appendix I). For further economic analysis, please refer to Section 5.1.3 of the EA.

Alternative 2, the Preferred Alternative, is approval of the GB Cod Hook Sector Operations Plan and receipt of an allocation of GB cod for FY2007. Sector vessels would be subject to the regulations implemented under the Harvesting Rules (please see Section 3.2 of the EA). In addition to the Ops Plan, Sector members are subject to a legally-binding Membership Agreement that delineates the interaction of members within the Sector, including governance, enforcement, and penalties for non-compliance.

Alternative 2 would provide social benefits to the Sector members as well as to the Chatham/Harwichport, MA communities, which are more than 71% revenue dependent on groundfish stocks, particularly the GB cod stock (NEFMC, AM 13 FSEIS, Sec 5.6.1.3). The Sector Ops Plan allows a range of management measures that would make the Sector economically viable for hook fishermen. The Amendment 13 FEIS concluded that negative distributional impacts affecting Chatham/Harwichport in Amendment 13 are mitigated by Sector allocation: “The proposed action does include some measures designed to mitigate these distributive impacts. The sector allocation and special access programs are specifically designed to foster ways to target healthy stocks to mitigate some of these distributional impacts. The EA for the settlement agreement estimated that an average of 46.5% of groundfish activity in Chatham and Harwichport could be affected by the recently-implemented Interim Action” (NEFMC, AM 13 FSEIS, Sec 5.6.1.3). For further economic analysis, please refer to Section 4.2.3 of the EA.

### Conclusions

Amendment 13 to the FMP, as passed by the NEFMC and approved by NMFS, is having severe, disproportional negative economic impacts on the GB hook fleet. Compared with the No Action alternative, Alternative 2 would have positive social impacts for the GB hook fleet and the Chatham/Harwichport area. Implementation of the Ops Plan provides safety benefits as well as regulatory flexibility that would allow cooperative harvest and the maximization of economic opportunity. Implementation of the Ops Plan and allocation of GB cod would allow the Sector the flexibility it needs to maximize revenues while minimizing expenses in the short term. It would allow Chatham/Harwichport to remain in the commercial groundfish business and benefit from the rebuilding of the groundfish resource. For further conclusions, please refer to Section 4.1.3 (Alternative 1), and Section 4.2.3 (Alternative 2) of the EA.

## **8.1 DETERMINATION OF SIGNIFICANCE UNDER E.O. 12866**

NMFS guidelines provide criteria to be used to evaluate whether a proposed action is significant. A “significant regulatory action” means any regulatory action that is likely to result in a rule that may:

1. *Have an annual effect on the economy of \$100 Million or more, or adversely effect in a material way the economy, a sector of the economy, productivity, competition, job, the environment, public health or safety, or State, local or tribal governments or communities;*

The proposed action would have neither an annual effect on the economy of \$100 Million, nor adversely effect, in a material way the economy, a sector of the economy, productivity, competition, the environment, public health or safety, or State, local, tribal governments or communities. The SBA defines a small business in the commercial fishing and recreational fishing sector, as a firm with receipts (gross revenues) of up to \$3.5 million. According to this definition, each member of the Sector qualifies as a small business; their cumulative effect on the economy is less than \$100 Million.

2. *Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;*

The proposed action does not create an inconsistency or otherwise interfere with an action taken or planned by another agency. The activity that would be allowed under this action was approved as part of Amendment 13 to the Northeast FMP (69 CFR 22906, April 27, 2004), authorized by the NEFMC and approved by NOAA NMFS. Therefore, there is no interference with actions taken by another agency, and no inconsistencies would be created in the management of commercial fisheries in the Northeast.

3. *Materially alter the budgetary impact of entitlements, grants, use fees, or loan programs or the rights and obligations of recipients thereof;*

The proposed action requests approval and implementation of the Sector Ops Plan during the 2007-08 fishing year. Sector members must have documented landings of GB cod during the qualifying period in order to be eligible for participation in the Sector. Sector members would be required to declare their intention to join the Sector to the NMFS RA on an annual basis. Once declared into the Sector, members would fish for groundfish solely within the Georges Bank Hook Sector area (defined earlier). Furthermore, Sector members must utilize only hook gear to target groundfish. Sector members would be legally bound by a Membership Contract that sets forth the requirements for each member as well as a schedule of penalties for violations of Sector rules. The proposed action does not materially alter the budgetary impact of entitlements, grants, use fees, or loan programs or the rights and obligations of recipients thereof.

4. *Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order;*

The proposed action is being taken pursuant to the mandates of Amendment 13 to the Northeast FMP (69 CFR 22906, April 27, 2004). Therefore, the proposed action would not be considered significant.

Because none of these criteria apply, NMFS has determined that the proposed action to approve and implement the Sector Operations Plan for 2007-2008, is not significant for the purpose of E.O. 12866.

The Regulatory Flexibility Act 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 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. The SBA defines a small business in the commercial fishing and recreational fishing sector, as a firm with receipts (gross revenues) of up to \$3.5 million

## **9.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS**

The following section provides an assessment and discussion of the potential economic impacts, as required of the RFA, of various proposed management and regulatory actions and alternatives. 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 initial RFA (IRFA) 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 37 vessels, each of which 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 mitigate the disproportionate impacts of Amendment 13 on the Chatham/Harwichport hook fleet.

A **Final Regulatory Flexibility Analysis** will be incorporated into the final rule to be published in the Federal Register, and address any public comments regarding the IRFA.

Description of the Reasons Why Action by Agency is Being Considered

The specification of hard TACs is necessary in order to limit GB cod mortality in the proposed area. Limitation of fishing mortality in this area enhances management of such stocks. The Hook Sector is the first of only two groups of fishermen fishing under a hard TAC of GB cod, ensuring that they do not contribute to overfishing of that species. Further description of the purpose and need for the TACs is contained in Section 3.0. The specification of Target TACs is necessary in order to enable the allocation of GB cod to the GB Hook Sector.

#### The Objectives and Legal Basis for the Proposed Action

The Northeast (NE) Multispecies Fishery Management Plan and promulgating regulations at 50 CFR §§ 648.85(a)(2), and (b)(3); and 648.90(a)(2) require the development and implementation of hard TACs, incidental catch TACs, and target TACs, respectively.

#### Estimate of the Number of Small Entities

Under the Small Business Administration (SBA) size standards for small fishing entities (\$3.5 million), all permitted and participating vessels in the groundfish fishery are considered to be small. Gross sales by any one entity (vessel) do not exceed this threshold. The maximum number of entities that could be affected by the proposed TAC is approximately 1,000 vessels: the approximate number of vessels in New England with limited access multispecies days-at-sea (DAS) permits and an allocation of Category A or B DAS. Realistically however, the number of vessels that would chose to fish in the Sector would be substantially less than 1,000 vessels. Therefore, those vessels subject to the restrictions associated with the TACs would be substantially less than 1,000 vessels. 35 vessels anticipate participating in the Sector in FY2007. However, this number is not likely to increase substantially in FY2008 and beyond, principally due to more restrictive management measures anticipated for that year.

#### Reporting, Recordkeeping and Other Compliance Requirements

The proposed action mandates reporting requirements that are as stringent, or more so, than current federal regulations. 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 requirements can be found in the Sector Operations Plan.

#### Duplication, Overlap or Conflict with other Federal Rules

The proposed action that would be allowed under this action was approved as part of Amendment 13 to the Northeast FMP (69 CFR 22906, April 27, 2004), authorized by the NEFMC and approved by NOAA NMFS. 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 Preferred Action would create a positive economic impact for the participating vessels because it would mitigate the harmful, disproportionate impacts of Amendment 13 and ensuing Frameworks on the Chatham/Harwichport hook fleet. At this time, due to the fact that Sector management is new to New England groundfish management, quantitative data on the precise economic impacts is not available. However, the economic impacts are qualitatively present: by coming out from under the inefficient input controls of the current management regime and by operating under both a hard TAC and DAS, Sector members would remain economically viable while adjusting to changing economic and fishing conditions. The No Action Alternative is inconsistent with the fishery management plan in both the short and long term. As such, the no action alternative would likely provide fewer economic benefits to the industry in the long term than the proposed alternative.

#### Economic Impacts on Small Entities Resulting from Proposed Action

The proposed action would affect 37 commercial fishing vessels from Chatham and Harwichport that have voluntarily joined the Sector. In FY99 and FY00, Chatham and Harwichport averaged 5,980,850 pounds of groundfish landings and \$7,254,100 in groundfish revenues, establishing it as an important port

of landing for groundfish vessels and a primary port for the multispecies fishery. In FY99 and FY00, an average of 95 multispecies vessels homeported in Chatham/Harwichport generated \$6,844,500 in revenues from multispecies. Chatham's overall community dependence on multispecies as a percentage of total fisheries revenues from federally-permitted vessels averaged about 71% from FY99 – FY00. It is likely that at least some of the active groundfish vessels in Chatham and Harwichport are even more than 71% dependent on the multispecies fishery.

The Amendment 13 FEIS concluded that negative distributional impacts affecting Chatham/Harwichport in Amendment 13 are mitigated by Sector allocation: "The proposed action does include some measures designed to mitigate these distributive impacts. The sector allocation and special access programs are specifically designed to foster ways to target healthy stocks to mitigate some of these distributional impacts. The EA for the settlement agreement estimated that an average of 46.5% of groundfish activity in Chatham and Harwichport could be affected by the recently-implemented Interim Action" (NEFMC, AM 13 FSEIS, Sec 5.6.1.3).

Sector allocation is cited repeatedly as a measure to mitigate economic harm caused by Amendment 13. For instance, "other opportunities have been created to ensure a viable fishing industry. The proposed action would allow the formation of voluntary, self-selecting sectors. These sectors may be able to develop more efficient means to harvest their portion of the resource" (NEFMC, Am 13 FSEIS, Section 7.2.10). Furthermore, "the Proposed Action contains a number of measures that would provide small entities with some degree of flexibility to be able to offset at least some portion of the estimated losses in profit. The major offsetting measures include the opportunity to use ... sector allocation..." (NEFMC, Am 13 FSEIS, Section 7.3.3.7.2). The Sector Ops Plan allows a range of management measures that would make the Sector economically viable for hook fishermen. For further economic impacts, please refer to Section 4.3 (Table 14) of the EA.

## **10.0 APPLICABLE LAW**

### **10.1 MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT**

The proposed action would comply with all elements of the MSFCMA and the NE Multispecies FMP.

### **10.2 ENDANGERED SPECIES ACT**

Section 7 of the ESA requires Federal agencies conducting, authorizing, or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species. The impacts of the proposed action on protected species are considered in section 4.2.1 of the EA and, based on the limited interaction of endangered species with hook gear (section 2.1.3), NOAA Fisheries Service has determined that there would be no direct or indirect impacts on protected resources, including endangered or threatened species or their habitat. None of the proposed exempted activities are expected to result in the additional adverse impacts that would change the basis for the determinations in previous consultations.

### **10.3 MARINE MAMMAL PROTECTION ACT**

The impacts of the proposed action on protected species are considered in section 4.2.1 of the EA and, based on the limited interaction of endangered species with hook gear (section 2.1.3), NOAA Fisheries Service has concluded that there would be no direct or indirect impacts on marine mammals, that the

proposed action is consistent with the provisions of the MMPA, and that the proposed action would not alter existing measures to protect the species likely to inhabit the management units of the subject fisheries.

#### 10.4 NATIONAL ENVIRONMENTAL POLICY ACT

##### **FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

##### **Finding of No Significant Impact for Approval of the Georges Bank Cod Hook Sector Operations Plan**

National Marine Fisheries Service

National Oceanic and Atmospheric Administration 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 Council on Environmental Quality regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant in making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ’s context and intensity criteria. These include:

1) *Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?*

Response: The proposed action would not jeopardize the sustainability of the target species (cod) affected by the action because the GB cod hook sector has a set total TAC for cod that would be adhered to on an annual basis. The biological impacts of the proposed action are analyzed in Section 4.2.1.

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-target species (Sections 4.2.1 and 2.1.2). Mortality of non-target species would be controlled within the Sector by continued use of DAS.

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 under the Magnuson Act and identified in the NE Multispecies FMP. The hook gear used by Sector members in the proposed action has minimal adverse impact on marine habitats or EFH (Sections 4.2.2 and 4.4).

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 Sector involves routine fishing operations and would not decrease safety at sea. In fact, it is expected that the centralized and local controls placed on the Sector would result in positive impacts on public health and safety. This would occur through daily monitoring



and increased communication amongst Sector members, and the ability to respond rapidly to changing developments on the ocean (Section 4.2.3).

Although NAO 216-6 refers to A “substantial impacts,” this is understood to mean “significant impacts on the environment.”

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. As discussed in Section 4.2.1, hook-and-line gear is not expected to interfere with threatened species, marine mammals, or their habitats.

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 the Operations Plan would allow a maximum number of hook vessels to remain active in the hook fishery rather than converting to gillnetting, leasing days to gillnetters or otter trawlers, or selling their permits to gillnetters or otter trawlers. As a result, the biodiversity and ecosystem impacts common to the gillnet and otter trawl fleet would not expand. Hook gear allows for select and direct removal of specific stocks while impacting habitat on a limited basis. As such, impacts to biodiversity and components of the ecosystem as a result of this action are expected to be minimal and well-controlled. Elements of the Sector Harvest Plan are intended to focus on landings of target species only (cod or haddock), which is restricted by a number of effort controls such as a hard TAC, with minimal disruption or impacts to the ecosystem as a whole (Section 4.2.2 and 4.4)

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

Response: The social and economic impacts of the proposed action are not interrelated with significant natural or physical environmental effects. While the proposed action has the potential to provide positive social and economic relief to the GB hook fleet that is disproportionately affected by Amendment 13 and Framework 42, impacts to the natural and physical environment from this action are expected to be negligible (see Sections 4.2.1 and 4.2.2 and 4.2.3).

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

Response: The implementation of the Sector was unanimously supported by the New England Fishery Management Council. During public comment, strong support was received for the sector allocation from a wide diversity of sources throughout the New England fishing community, the public, and the environmental community. The effects on the quality of the human environment caused by implementation of the Sector are likely to be positive and supported by a wide constituency of New England fishery stakeholders (Section 4.2.3). Additionally, the effects on the quality of the human environment of this action are not expected to negatively impact target species, non-target species, habitat or protected resources as described in Section 4.0.

9) *Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?*

Response: The proposed action cannot reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas because these areas are not present within the area affected by this action. The general impacts to EFH from the use of these gears would be minimal and the level of damage to the habitat overall is considered to be quite low (Section 5.2.2 of original EA- Habitat Impacts (Alternative 2: Preferred Alternative))

10) *Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

Response: The impacts on the human environment are not likely to be highly uncertain nor do they involve unique or unknown risks. This action would allow the fourth year of Sector operation the would support the participation of fishermen in localized decision making. This action would continue a sector-specific management regime that takes into account the needs of the hook fishermen on Georges Bank and results in minimal impacts to the human environment. Effects to the human environment are detailed in Section 4.2.3 of the proposed action.

11) *Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?*

Response: The proposed action is not related to other actions with individually insignificant, but cumulatively significant impacts (Section 5.0). 2007 would be the fourth year of approval of the Sector Operations Plan. The cumulative impacts of the operation of the Sector are detailed in Section 5.3 and are not expected to result in significant impacts when considered together. The Sector is one of two approved sectors of New England groundfishermen innovating novel and highly adaptive means of local decision-making, self-monitoring, and enforcement. Through the individual management measures detailed in the proposed action and the ability to adapt these measures to the fleet's constantly changing working conditions, the Sector would serve as a model for the future of sustainable fisheries in New England.

12) *Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?*

Response: The proposed action is not likely to 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 because these areas are not present in the affected environment.

13) *Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?*

Response: The proposed action cannot reasonably be expected to result in the introduction or spread of non-indigenous species because operation of the Sector is confined to a traditional fishing area, the GB Hook Sector Area (Section 2.2). Therefore, introduction or spread of non-indigenous species is minimized.

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: Amendment 13 established the precedent of Sector allocations. The proposed action is a continuation and implementation of that decision. This proposed action represents the fourth year that the Sector Operations Plan has been approved. Future decisions in principle are not at question in this proposal. However, it should be noted that while Amendment 13 established the process for Sector allocation, each sector proposal is considered individually on its own merits and expected impacts, and includes a specified process for public comment and 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.

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 5.0, impacts on resources, including groundfish and other stocks, are expected to be minimal. This proposal imposes additional restrictions on the Sector designed to further protect target and non-target species.

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## **DETERMINATION**

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for Approval of the Georges Bank Cod Hook Sector Operations Plan it is hereby determined that the Approval of the Georges Bank Cod Hook Sector Operations Plan would not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. 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.

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Assistant Administrator for Fisheries, NOAA Date  
[or Responsible Program Manager, [identify Office]]

## **10.5 ADMINISTRATIVE PROCEDURE ACT (APA)**

Section 553 of the APA establishes procedural requirements applicable to informal rulemaking by Federal agencies. The purpose of these requirements is to ensure public access to the Federal rulemaking process, and to give the public adequate notice and opportunity for comment. NMFS will be requesting an exemption from the requirement for a 30 day delay in effectiveness of the final rule associated with the Operations Plan.

## **10.6 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. This action does not propose to modify any existing collections, or to add any new collections; therefore, no review under the PRA is necessary.

## **10.7 INFORMATION QUALITY ACT (DQA) (SECTION 515)**

In accordance with the DQA (Public Law 106-554), the Office of Management and Budget directed each federal agency to issue guidelines that ensure the quality, objectivity, utility, and integrity of information disseminated by federal agencies. The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the DQA. Information must meet standards of utility, integrity, and objectivity. This section provides information that demonstrates compliance with these standards.

### ***Utility of Information Product***

A *Is the information helpful, beneficial or serviceable to the intended user?*

The Environmental Assessment contains a description of the authority for the formation of a Sector, as well as a description of the Georges Bank Cod Hook Sector and the proposed Sector agreement and Operations Plan. In addition, this EA contains specific information on the proposed number of participants in the Sector and the amount of cod TAC proposed for allocation to the Sector. Therefore, the EA contains the various information elements of interest to the public and necessary for decision makers to make informed decisions.

B *Is the data or information product an improvement over previously available information? Is it more current or detailed? Is it more useful or accessible to the public? Has it been improved based on comments from or interactions with customers?*

The proposed Sector Agreement and Operations Plan for the 2007 fishing year are different from those in effect for the 2006 fishing year. The operations plan was slightly revised, based upon the experiences of the Sector members during the 2006 fishing year. Secondly, the Operations plan, Sector Agreement, and TAC calculation have been revised to reflect proposed changes to eligibility criteria for the sector. The proposed revisions to the eligibility criteria and calculation of the TAC would broaden the range of potential participants to include vessels that have not historically fished with hook gear, and would broaden the range of data utilized for the calculation of the Sector's TAC (to include non-hook landings).

C. *What media are used in the dissemination of the information? Printed publications? CD-ROM? Internet? Is the product made available in a standard data format? Does it use consistent attribute naming and unit conventions to ensure that the information is accessible to a broad range of users with a variety of operating systems and data needs?*

The Federal Register document that requested public comment (72 FR 18940; April 16, 2007) on the proposed Operations Plan and Sector Agreement was made available in printed publication and on the Internet website for the Northeast Regional Office. Instructions for obtaining a copy of this EA were included in the Federal Register document.

### ***Integrity of Information Product***

The information product meets the following standards for integrity:

All electronic information disseminated by NOAA Fisheries Service adheres to the standards set out in Appendix III, "Security of Automated Information Resources," of Office of Management and Budget (OMB) Circular A-130; the Computer Security Act; and the Government Information Security Act. If information is confidential, it is safeguarded pursuant to the Privacy Act; Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business, and financial information); the Confidentiality of Statistics provisions of the Magnuson-Stevens Act; and NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics.

### ***Objectivity of Information***

(1) *Indicate which of the following categories of information products apply for this product:*

- Original Data
- Synthesized Products
- Interpreted Products
- Hydrometeorological, Hazardous Chemical Spill, and Space Weather Warnings, Forecasts, and Advisories
- Experimental Products
- X** Natural Resource Plans
- Corporate and General Information

(2) *Describe how this information product meets the applicable objectivity standards.*

*What published standard(s) governs the creation of the Natural Resources Plan? Does the Plan adhere to the published standards?*

The Sector Operations Plan and Sector Agreement must comply with the requirements of the Northeast Multispecies FMP, as well as the requirements of the Magnuson Act, NEPA, APA, ESA, MMPA, and EOs 12612 (Federalism), 12630 (Property Rights), 12866 (Regulatory Planning), and 13158 (Marine Protected Areas). The NMFS Administrator, Northeast Region, has authority, under 50 CFR 648.87, to approve the Operations Plan and Sector Agreement and allocate TAC to the Sector. NOAA Fisheries has made a preliminary determination that the proposed Sector Agreement and Operations Plan are consistent with the FMP and all applicable laws. In making a final decision, NOAA Fisheries will take into account comments received on the proposed rule and pertinent information that may be more current than previous information.

*Was the Plan developed using the best information available? Please explain.*

The proposed Sector Agreement and Operations Plan are based upon currently available information, and the proposed TAC is based upon the best scientific information available, including Amendment 13 and FW42

*Has a clear distinction been drawn between policy choices and the supporting science upon which they are based? Have all supporting materials, information, data and analyses used within the Plan been properly reference to ensure transparency?*

The policy choices that are proposed are supported by the available scientific information. The overall GB cod target TAC from which the proposed GB cod hard TAC for the Sector is derived was based upon Amendment 13 data as well as the 2005 GARM II data, in accordance with the process described in the FMP. The supporting materials and analyses used to develop the TAC are contained in readily available documents. The process utilized to develop the Sector TAC is described in the FMP.

*Describe the review process of the Plan by technically qualified individuals to ensure that the Plan is valid, complete, unbiased, objective and relevant. For example, internal review by staff who were not involved in the development of the Plan to formal, independent, external peer review. The level of review should be commensurate with the importance of the Plan and the constraints imposed by legally enforceable deadlines.*

The NMFS Administrator, Northeast Region made a preliminary determination that the proposed Sector Operations Plan, Sector Agreement, and proposed Sector TAC are consistent with the FMP and applicable laws. Staff from the Sustainable Fisheries Division and Fishery Statistics Division, as well as staff responsible for implementation of NEPA reviewed the pertinent information. Establishment of the overall GB cod target TAC involved scientists with specialties in population dynamics, stock assessment methods, and demersal resources. In accordance with the FMP regulations, the Regional Administrator would make a final determination after obtaining public comment.

## **10.8 E.O. 13132 (FEDERALISM)**

This E.O. established nine fundamental federalism principles for Federal agencies to follow when developing and implementing actions with federalism implications. The E.O. also lists a series of policy making criteria to which Federal agencies must adhere when formulating and implementing policies that have federalism implications. However, no federalism issues or implications have been identified relative to the measures proposed in the Approval of the Georges Bank Cod Hook Sector Operations Plan. This action does not contain policies with federalism implications sufficient to warrant preparation of an assessment under E.O. 13132. The affected states were closely involved in the original development and approval of the Sector through their representation on the Council (all affected states are represented as voting members of at least one Regional Fishery Management Council). No comments were received from any state officials relative to any federalism implications that may be associated with this action.

## **10.9 E.O. 13158 (MARINE PROTECTED AREAS (MPAS))**

The Executive Order on MPAs requires Federal agencies whose actions affect the natural or cultural resources that are protected by an MPA to identify such actions and, to the extent permitted by law and to the maximum extent practicable, in taking such actions, avoid harm to the natural and cultural resources that are protected by an MPA. The E.O. directs Federal agencies to refer to the MPAs identified in a list developed and maintained by the Departments of Commerce and Interior. As of the date of submission of this document, however, the List of MPAs has not yet been developed. No further guidance related to this E.O. is available at this time.

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## **12.0 GLOSSARY OF ACRONYMS AND TERMS**

**ALWTRP** Atlantic Large Whale Take Reduction Plan



<b>APA</b>	Administrative Procedure Act
<b>BMSY</b>	Biomass That Produces the Maximum Sustainable Yield
<b>BTHRESHOLD</b>	Biomass Threshold
<b>CA I</b>	Georges Bank Closed Area I
<b>CC</b>	Cape Cod
<b>CCCHFA</b>	Cape Cod Commercial Hook Fishermen's Association
<b>Council</b>	New England Fishery Management Council
<b>DAS</b>	Days-at-Sea
<b>DFO</b>	Department of Fisheries and Oceans
<b>DPS</b>	Distinct Population Segment
<b>DQA</b>	Information Quality Act
<b>EA</b>	Environmental Assessment
<b>EFH</b>	Essential Fish Habitat
<b>EFP</b>	Exempted Fishing Permit
<b>EO</b>	Executive Order
<b>ESA</b>	Endangered Species Act of 1973
<b>F</b>	Mortality
<b>FMAX</b>	Fishing Mortality Corresponding to Maximum Yield Per Recruit
<b>FMP</b>	Fishery Management Plan
<b>FMSY</b>	Mortality That Produces the Maximum Sustainable Yield
<b>FONSI</b>	Finding of No Significant Impact
<b>FREBUILD</b>	Rebuilding Mortality
<b>FSEIS</b>	Final Supplemental Environmental Impact Statement
<b>FTHRESHOLD</b>	Mortality Threshold
<b>FW40A</b>	Framework Adjustment 40A
<b>FW40B</b>	Framework Adjustment 40B
<b>FW41</b>	Framework Adjustment 41
<b>FW42</b>	Framework Adjustment 42
<b>FY</b>	Fishing Year
<b>GARM</b>	Groundfish Assessment Review Meeting
<b>GB</b>	Georges Bank
<b>GB Cod</b>	Georges Bank Cod
<b>GB Haddock</b>	Georges Bank Haddock
<b>GBCHSA</b>	Georges Bank Cod Hook Sector Area
<b>GOM</b>	Gulf of Maine
<b>Handline</b>	Hook gear employed by hand (jig)
<b>IRFA</b>	Initial Regulatory Flexibility Analysis
<b>Jig</b>	Hook gear employed by hand or rod
<b>Jigger</b>	Fisherman or vessel which employs rod and reel and/or handline
<b>Longline</b>	Demersal longline or tub trawl
<b>LOF</b>	List of Fisheries
<b>MA</b>	Massachusetts
<b>Magnuson Act</b>	Magnuson-Stevens Fishery Conservation and Management Act of 1996
<b>Manager</b>	Individual employed by the Sector to manage the Sector
<b>MARFIN</b>	Marine Fisheries Initiative
<b>MMPA</b>	Marine Mammal Protection Act of 1972
<b>MPA</b>	Marine Protected Area
<b>mt</b>	Metric Ton
<b>MSY</b>	Maximum Sustainable Yield
<b>NE</b>	New England
<b>NEFMC</b>	New England Fishery Management Council

<b>NEFSC</b>	Northeast Fisheries Science Center
<b>NEPA</b>	National Environmental Policy Act
<b>NERO</b>	Northeast Regional Office
<b>NMFS</b>	National Marine Fisheries Service
<b>NOAA Fisheries</b>	National Marine Fisheries Service
<b>NOAA</b>	National Oceanographic and Atmospheric Administration
<b>OMB</b>	Office of Management and Budget
<b>Operations Plan</b>	Georges Bank Cod Hook Sector Allocation Operations Plan
<b>Ops Plan</b>	Georges Bank Cod Hook Sector Allocation Operations Plan
<b>OY</b>	Optimum Yield
<b>PDT</b>	Plan Development Team
<b>PRA</b>	Paperwork Reduction Act
<b>RA</b>	Regional Administrator
<b>RFAA</b>	Regulatory Flexibility Act Analysis
<b>SAP</b>	Special Access Program
<b>SARC</b>	Stock Assessment Review Committee
<b>SAW</b>	Stock Assessment Workshop
<b>SBA</b>	Small Business Administration
<b>Sector</b>	Georges Bank Cod Hook Sector Allocation
<b>Sector Area</b>	Georges Bank Cod Hook Sector Area
<b>SFA</b>	1996 Sustainable Fisheries Act Amendment to the Magnuson-Stevens Fishery Conservation and Management Act
<b>SEIS</b>	Supplemental Environmental Impact Statement
<b>SNE</b>	Southern New England
<b>SOC</b>	Species of Concern
<b>SSB</b>	Spawning Stock Biomass
<b>SSBREBUILD</b>	Rebuilding Trajectory for Spawning Stock Biomass
<b>TAC</b>	Total Allowable Catch
<b>VMS</b>	Vessel Monitoring System
<b>VPA</b>	Virtual Population Analysis
<b>WGOM</b>	Western Gulf of Maine Closed Area
<b>YT</b>	Yellowtail Flounder