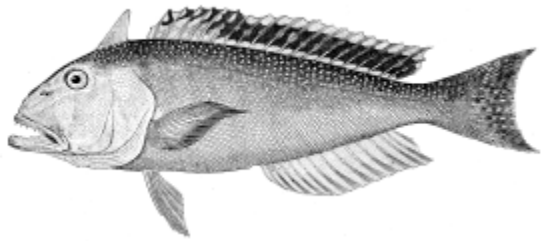
AMENDMENT 1
TO THE TILEFISH
FISHERY MANAGEMENT PLAN

(Includes Final Environmental Impact Statement, Preliminary Regulatory Economic Evaluation and Essential Fish Habitat Assessment)



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1.0 EXECUTIVE SUMMARY

This amendment document and final environmental impact statement (FEIS) presents and evaluates management alternatives and measures to achieve specific goals and objectives for the tilefish fishery (see section 4.0). This document was prepared by the Mid-Atlantic Fishery Management Council (Council) in consultation with the National Marine Fisheries Service (NMFS). This amendment is being developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA or Magnuson-Stevens Act) and the National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ). In 1996, Congress passed the Sustainable Fisheries Act (SFA), which amended and reauthorized the MSFCMA and included a new emphasis on precautionary fisheries management. New provisions mandated by the SFA require managers to end overfishing and rebuild overfished fisheries within specified time frames, minimize bycatch and bycatch mortality to the extent practicable, and identify and protect essential fish habitat (EFH). The 2006 reauthorization of the MSFCMA mandates the use of annual catch limits and accountability measures to end overfishing provides for widespread market-based fishery management through limited access programs, and calls for increased international cooperation. With regards to the Limited Access Privilege (LAP) programs, the Act defines individual fishing quotas as a type of limited access privilege. In addition, the Act provides tools and guidance for fishery managers to develop LAP programs.[1]

Although this Fishery Management Plan (FMP) amendment has been prepared primarily in response to the requirements of the MSFCMA and NEPA, it also addresses the requirements of the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). When preparing a FMP or FMP amendment, the Council also must comply with the requirements of the Regulatory Flexibility Act (RFA), the Administrative Procedure Act (APA), the Paperwork Reduction Act (PRA), the Coastal Zone Management Act (CZMA), the Information Quality Act (IQA), Executive Orders 13132 (Federalism), 12898 (Environmental Justice), 12866 (Regulatory Planning), and 13158 (Marine Protected Areas). These other applicable laws and executive orders help ensure that in developing an FMP/amendment, the Council considers the full range of alternatives and their expected impacts on the marine environment, living marine resources, and the affected human communities. This integrated document contains all required elements of the FMP amendment, including a FEIS as required by NEPA and information to ensure consistency with other applicable laws and executive orders.

The range of alternatives considered by the Council is described in section 5.0. These alternatives are evaluated to address issues and problems that have been identified since the FMP was first implemented. These alternatives are considered as means to achieve the management objectives of the FMP as outlined in section 4.0, as well as to evaluate and consider the implementation of an individual fishing quota (IFQ) program, new reporting requirements, gear modifications, recreational fishing issues, and review the

[1] A brief summary of LAP provisions in 2006 Magnuson Stevens Act reauthorization is presented in Appendix A.

EFH components of the FMP. This amendment would implement an IFQ program for the tilefish commercial fishery. The purpose of the IFQ program proposed in this amendment is to reduce overcapacity in the commercial fishery and to eliminate, to the extent possible, the problems associated with derby fishing, in order to assist the Council in achieving optimum yield (OY). The proposed IFQ system would eliminate derby style fishing and associated race for the fish that exists under the current management system. Fishermen would not have to go to sea during unsafe weather conditions in order to compete with someone else for a share of the quota. Fishermen could decide when it is better for them to harvest quota share taking into consideration weather conditions and price at the dock. In fact, the full-time tier 2 category closed early in 2005 and 2006 and the part-time category had early closures in 2002, 2004, 2005, and 2006. It is possible that implementing and IFQ program for tier 2 and part-time categories could improve management of the fishery (i.e., avoid early closures and maximize performance). The proposed action under this amendment could: 1) implement an IFQ program/allocation; 2) establish IFQ permanent transferability of ownership; 3) establish IFQ temporary transferability of ownership; 4) establish IFQ share accumulation guidelines or limitations; 5) implement commercial trip limits in the part-time category; 6) address fees and cost recovery; 7) establish flexibility to revise/adjust the IFQ program; 8) establish IFQ reporting requirements; 9) modify the Interactive Voice Response (IVR) reporting requirements; 10) revise commercial vessel logbook reports; 11) address hook size restrictions in the commercial fishery; 12) implement recreational party/charter permits and reporting requirements; 13) implement recreational bag-size limits; 14) improve monitoring of tilefish commercial landings; 15) expand the list of management measures that can be adjusted via the framework adjustment process; 16) modify EFH designation; 17) modify HAPC (habitat areas of particular concern) designation; 18) implement measures to reduce gear impacts on EFH; and 19) establish methods for collecting royalties under a Tilefish IFQ system.

At its June 2007 meeting in Hampton, VA, the Council identified several of its preferred alternatives for the draft version of Amendment 1. Following approval of the draft document, and subsequent review by NMFS Northeast Regional Office (NERO), a Notice of Availability (NOA) for the draft document (DEIS) was published in the Federal Register [Vol. 72, No. 248/December 28, 2007, Page 73799] by the Environmental Protection Agency (EPA). Publication of the NOA initiated the Public Comment Period during which the Council accepted written and verbal comments. Verbal comments were accepted at four public hearings that were announced through the Federal Register [Vol. 73, No. 9/Monday, January 14, 2008, Page 2225] as well as through mass mailing. The public hearings were held in Hampton, VA (January 30, 2008); Riverhead, NY (February 4, 2008); Warwick, RI (February 5, 2008); and Toms River, NJ (February 6, 2008). The Council's deadline for the receipt of public comments was set as February 11, 2008. All comments (written and verbal) were presented to the Council at the April 2008 meeting. At that meeting, the Council selected the final suite of preferred alternatives to be included in the FIES. This document contains the final suite of recommendations to be presented to the National Marine Fisheries Service for implementation via rulemaking under the authority of the Secretary of Commerce. All of the written comments received

during the Public Comment Period are provided in Appendix J. Summaries of the public hearings and responses to comments are also provided in that Appendix.

The following summary lists the specific management measures under consideration, indicates the basis for their inclusion, the Council's preferred alternatives (when applicable) and its rationale, and a brief review of the likely meaningful impacts of the management alternatives:

1 IFQ ALLOCATION

Alternatives: There are 20 alternatives considered for the purpose of initial IFQ allocation. A detailed description of each alternative is presented in section 5.1 and the analysis of impacts is presented in section 7.1. A brief description of these alternatives is presented in Table ES-1. The IFQ allocation alternatives range from implementing an IFQ system for full-time tier 1 permit holders only (alternative set 1B) to implementing an IFQ system for all limited access permit holders (alternative sets 1D and 1E). Alternative 1F would not restrict the initial eligibility for the IFQ ownership, and as such, anyone could obtain IFQ allocation. The status quo alternative (1A) would maintain the current management system for tilefish. The initial apportionment of the IFQ shares to qualifying permit holders would be based on historical landings from one of three proposed sets of time periods.

Problem Statement: The implementation of an IFQ system to manage the tilefish fishery is being considered as a means to reduce overcapacity in the commercial fishery and to eliminate, to the extent possible, the problems associated with derby fishing, in order to assist the Council in achieving optimum yield (OY).

The Tilefish FMP implemented a limited entry program and a tiered commercial quota allocation of the TAL. The original FMP does not address how the quota is to be distributed among vessels within each of the three fishing categories. However, individuals in the full-time tier 1 category have developed a system to further allocate the overall tier 1 allocation to vessels within that category. According to stakeholders, this "cooperative understanding" allowed the full-time tier 1 participants to spread landings throughout the year to maximize their performance. More specifically, under this "cooperative understanding," tier 1 participants decide at the vessel level when to fish, how much to fish, and when to land the fish harvested in order to maximize ex-vessel price (by avoiding market gluts and spreading landings throughout the year). Full-time tier 1 stakeholders would like to explore the possibility of implementing an IFQ program that would further stabilize the fishery and formalize their cooperative agreement. According to stakeholders, individuals participating in the full-time tier 2 and part-time categories have not implemented a "cooperative understanding" such as the one developed by full-time tier 1 participants. In fact, the full-time tier 2 category closed early in 2005 and 2006 and the part-time category had early closures in 2002, 2004, 2005, and 2006. It is possible that implementing and IFQ program for tier 2 and part-time categories could improve management of the fishery (i.e., avoid early closures and maximize performance).

This action is being considered as a means to promote flexibility for the fishermen in their fishing operations. More specifically, the implementation of an IFQ program would allow for the distribution of the overall TAL among the full-time and part-time vessel categories currently permitted to participate in the fishery and thus allow participants to better plan fishing activities.

Council Recommendation: The Council chose 1E as its preferred alternative because it will allow for the greatest flexibility to develop an IFQ system. Under alternative 1E any combination of historical landings periods proposed for allocation purposes (i.e., average landings for years 1988-1998, average landings for years 2001-2005, or average landings for the best five years from 1997-2005) can be used to allocate IFQ shares to any combination of limited access permit categories (i.e., full-time tier 1, full-time tier 2, and/or part-time). At the April 2008 meeting, the Council chose to use average landings for the 2001-2005 period to allocate IFQ shares to full-time tier 1 and 2 vessels. For part-time vessels, an equal allocation for vessels that landed tilefish during the 2001-2005 period was used to allocate IFQ shares to that permit category.

Impact Analysis: A detailed analysis of the impacts of the IFQ allocations alternatives discussed in this document is presented in section 7.1. Alternative 1A is the no action alternative. The existing permit limitation program (alternative 1A) in the tilefish fishery does not address overcapitalization and the derby style fishing practices that exist in the fishery.

Since this fishery is already operating under a hard TAL system, and the TAL is being fully harvested, it is not expected that the implementation of an IFQ program would negatively impact fishing mortality rates as the IFQ program would only be dividing and assigning the current quota to individual fishermen. However, the proposed IFQ system could provide biological benefits by potentially reducing discards and waste, especially for those permit categories that have been experiencing early closures (see section 4.2), relative to the no action alternative (1A).

Relative to the no action alternative (1A) presented in this document, none of the proposed IFQ allocations are expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species. In addition, none of the proposed IFQ allocations presented in this document are expected to result in positive or negative impacts to habitat or endangered or protected species relative to the no action alternative (1A).

If the management regime under the current system were to continue (alternative 1A), tier 2 and part-time fishing vessels would continue to employ higher than necessary levels of capital investment and operating costs, and shorter fishing seasons. In addition, these vessels would also continue to face lower ex-vessel value due to market gluts. Furthermore, the current system would not motivate fishermen to limit fishing practices during unsafe conditions. It is not expected that the overall sustained participation of

fishing communities in the tilefish fishery will change under an IFQ system when compared to the existing limited access program (alternative 1A). It is also expected that reduction in fishing capacity in excess of the needed capacity to efficiently harvest the commercial TAL would result in a more profitable fishery under an IFQ system.

It is expected that an IFQ program that involves all permitted fishing categories (alternative sets 1D and 1E) would reduce capacity in the fishery more than alternatives that implement an IFQ program for only full-time tier 1 permit holders (alternative set 1B) or for only full-time tier 1 and tier 2 permit holders (alternative set 1C). Within these alternative sets, alternatives that use more current years for allocation purposes (2001-2005) would further reduce capacity as a smaller number of vessels (i.e., that is vessels that have recently been active in the fishery) would benefit from initial IFQ allocation. Although it is expected that an IFQ program would reduce overcapacity in the fishery, there are factors that can limit the speed of such transformation. Examples of these activities include, but are not limited to, adopted transferability rules (alternatives 2 and 3 below), employment opportunities in other fisheries or economic sectors, the initial amount of allocated quota, capital availability and flexibility, credit availability, and skipper and crew experience. In general terms, by reducing fishing capacity, IFQ programs can limit employment opportunities in fisheries where the program is implemented. This can result in trickle down effects on small fishing communities where job opportunities are scarce or skills of displaced fishermen are low.

Alternative 1E (preferred alternative) would allow for the maximum flexibility to develop an IFQ program as it allows for an IFQ system to be established for any combination of limited entry permit categories (i.e. full-time tier 1, full-time tier 2, part-time). The IFQ allocation to each individual permit class group (i.e. full-time tier 1, full-time tier 2, part-time) under alternative 1E would be based on historical landings for any of the three proposed sets of time periods.

The proposed IFQ system would eliminate derby style fishing and associated race for the fish that exists under the current management system. Fishermen would not have to go to sea during unsafe weather conditions in order to compete with someone else for a share of the quota. Fishermen could decide when it is better for them to harvest quota share taking into consideration weather conditions and price at the dock.

Eligibility for the initial allocation of quota shares is one of the most controversial aspects of the implementation phase of the IFQ program. Many people are concerned about the fairness of the initial allocation and potential windfall profits that could be generated by a few vessels. In addition, concerns regarding employment reduction for vessel crew, potential share consolidation in the hands of a few individuals, and potential costs that new fishermen would have to pay in order to enter the fishery are other concerns associated with the implementation of IFQ systems. However, most concerns regarding IFQ share consolidation can be addressed through individual program design as discussed below.

Table ES-1. Brief description of the IFQ allocation alternatives included in this amendment. "Status" refers to whether an alternative is proposed or has been considered but rejected for further analysis in this FEIS. Detailed descriptions of each alternative are provided in section 5.1.

Issue	Alternative	Status of Alternative	Description (see section 5.0)	Impacts Discussion
IFQ Allocation	1A	Proposed (No Action)	Maintain status quo management system for tilefish	section 7.1
	1B1	Proposed	Full-time tier 1 permit holders only. Avg. landings 1988-1998	section 7.1
	1B2	Proposed	Full-time tier 1 permit holders only. Avg. landings 2001-2005	section 7.1
	1B3	Proposed	Full-time tier 1 permit holders only. Avg. landings best five years from 1997-2005	section 7.1
	1B4	Proposed	Full-time tier 1 permit holders only. Equal allocation	section 7.1
	1C1	Proposed	Full-time tier 1 & 2 permit holders only. Avg. landings 1988-1998	section 7.1
	1C2	Proposed	Full-time tier 1 & 2 permit holders only. Avg. landings 2001-2005	section 7.1
	1C2A	Proposed	Full-time tier 1 & 2 permit holders only. Equal category allocation based on 1C2	section 7.1
	1C3	Proposed	Full-time tier 1 & 2 permit holders only. Avg. landings best five years from 1997-2005	section 7.1
	1C3A	Proposed	Full-time tier 1 & 2 permit holders only. Equal category allocation based on 1C3	section 7.1
	1C4	Proposed	Full-time tier 1 & 2 permit holders only. Equal category allocation	section 7.1
	1D1	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Avg. landings 1988-1998	section 7.1
	1D1A	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Equal category allocation based on 1D1	section 7.1
	1D2	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Avg. landings 2001-2005	section 7.1
	1D2A	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Equal category allocation based on 1D2	section 7.1
	1D3	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Avg. landings best five years from 1997-2005	section 7.1
	1D3A	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Equal category allocation based on 1D3	section 7.1
	1D4	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Equal category allocation	section 7.1
	1E	**Preferred**	**Full-time tier 1, full-time tier 2, and/or part-time permit holders. Avg. landings for years 1988-1998, 2001-2005, or best five years from 1997-2005. Allocations based on %s associated with landings and/or equal division among all qualifying vessels**	section 7.1
	1F	Considered but Rejected[a]	Do not restrict initial eligibility for the IFQ ownership	section 7.1

[a] Considered but rejected for further analysis. Basic consideration was given to impacts of the alternative; however, it was not considered a reasonable solution to the issue and was not given further consideration in the document beyond justification for rejection in section 5.1.F.

2 PERMANENT IFQ TRANSFERABILITY OF OWNERSHIP

Alternatives:

2A: No Action (IFQ shares would not be transferable)

2B: IFQ shares may be transferable among any interested party [Preferred Alternative]

2C: IFQ shares may only be transferred among IFQ share holders during the first five years of the IFQ program and other individuals thereafter

2D: IFQ shares may only be transferred among IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit

2E: IFQ shares may only be transferred among IFQ shareholders, other vessels maintaining a valid limited access commercial tilefish permit, or established tilefish fishermen (i.e., captains, mates, and deckhands)

A detailed description of each alternative is presented in section 5.2 and the analysis of impacts is presented in section 7.2.

Problem Statement: Transferability of quota shares is a crucial aspect of any IFQ program in achieving its economic objectives. In general terms, IFQ shares and annual allocations can be transferred to other people for sale, lease, gifting, or general transfer (e.g., to other family member(s)). Transferability of ownership can range from temporary (e.g., leasing, within fishing year or fishing season) to permanent (e.g., sale). IFQ leasing (temporary transfer of ownership) is addressed in the next section.

In general terms, the fewer restrictions placed on transfer of shares, the more effective an IFQ program may become in realizing its objectives. Nevertheless, transfer restrictions are generally used to address concerns that implementing the IFQ program will result in drastic and rapid changes to the fisheries' status quo.

Council Recommendation: The Council chose 2B as its preferred alternative because it places the less restrictions on IFQ transferability of ownership and would likely achieve program objectives more rapidly. This alternative recognizes tilefish as a public resource as soon as the IFQ program is implemented and allows individuals not receiving initial allocations to participate in the fishery if they wish as long as they meet the requirements under the reauthorized MSFCMA. Lastly, among the alternatives allowing for transferability (2B-2E), alternative 2B would place the least amount of transferability restrictions in the event that IFQ shares needed to be transferred due to death of an IFQ share holder, or sale of IFQ shares due to retirement and/or sale of vessel/fishing permits.

Impact Analysis: It is expected that the transfer eligibility requirements for IFQ shares would have no direct impact on tilefish mortality rates. However, it is possible that alternative 2B (preferred alternative) could potentially have positive biological impacts compared to alternative 2A (and 2C, 2D, and 2E) as it does not restrict the IFQ shares from being purchased by individuals not intending to use them for fishing. If shares were

to be purchased for a purpose other than fishing, directed effort in the fishery would decrease and the amount of directed catch would be below the quota, thus, producing positive biological impacts when compared to the no action alternative (2A).

Relative to the no action alternative (2A) presented in this document, none of the proposed transfer eligibility requirements for IFQ shares are expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species. In addition, none of the proposed transfer eligibility requirements for IFQ shares presented in this document are expected to result in positive or negative impacts to habitat or endangered or protected species relative to the no action alternative (2A).

Alternative 2A would prohibit the permanent transfer of IFQ shares. Hence, the buying or selling of quota shares would not be possible under this alternative. This alternative would not benefit people wishing to sell their shares or to buy shares to enter the fishery or expand fishing operations. The lack of efficient quota redistribution to more efficient harvesters and thus the reduction of fishing capacity would be unlikely under alternative 2A. Alternative 2B would not place any constraints on the permanent transfer of shares. This may be beneficial to anyone without history in the fishery to enter the fishery. With free quota share transferability, more buyers are involved and sellers would likely derive relatively good prices for their shares. However, it is possible that if IFQ shares were to be bought by individuals not wishing to fish for tilefish in order to protect the species from harvest, then OY would not be attained. Alternative 2C would only allow for the transfer of shares among individuals that received IFQ shares only during the first five years of the program implementation. This alternative would benefit IFQ participants that received small quota shares when the program is first implemented as they could be the only people allowed to purchase additional quota shares during the first five years of the program implementation. This alternative is considered to be equitable because it initially favors the commercial tilefish fishermen, who have invested time and resources into the fishery, but ultimately recognizes tilefish as a public resource and allows other individuals to participate in the fishery as long as they meet the requirements under the reauthorized MSFCMA. In the first five years of the program, alternative 2C would limit the number of people eligible to sell shares to and thus the price for selling shares would be kept at a lower cost. Therefore, this may not be beneficial to individuals wishing to sell their shares. After five years of program implementation, alternative 2C would have similar impacts as compared to alternative 2B. Alternatives 2D and 2E restrict the transfer of shares to people participating in the fishery only. Alternative 2D is similar to alternative 2C during the first five years of the program, except it allows for shares to be transferred to vessels maintaining a valid limited access commercial tilefish permit in addition to IFQ shareholders. Alternative 2E is similar to alternative 2D except that it allows for shares to be transferred to established (i.e., captains, mates, and deckhands) tilefish fishermen in addition to IFQ shareholders and other vessels maintaining a valid limited access commercial tilefish permit. The impacts of alternative 2E are similar to those under alternative 2D. However, it may be difficult to determine who is an establish fishermen. The cost of shares under alternatives 2D and 2E are expected to be lower than under the alternatives with fewer restrictions on the number of individuals that would be

allowed to obtain quota shares. Alternatives 2D and 2E would not result in drastic and rapid changes to the fisheries' status quo.

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3 IFQ LEASING (Temporary Transferability of Ownership)

Alternatives:

3A: No Action (Annual IFQ allocations would not be leased)

3B: Annual IFQ allocations may be leased among any interested party [Preferred Alternative]

3C: Only tilefish IFQ shareholders would be permitted to lease annual IFQ allocations during the first five years of the IFQ program and other individuals thereafter

3D: Only tilefish IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit would be permitted to lease annual IFQ allocations

3E: Only tilefish permit holders (IFQ shareholders or limited access permit holders) or established tilefish fishermen (i.e., captain, mates, and deckhands) would be permitted to lease annual IFQ allocations

A detailed description of each alternative is presented in section 5.3 and the analysis of impacts is presented in section 7.3.

Problem Statement: The problem statement described under alternative 2 above also apply here.

Council Recommendation: The Council chose 3B as its preferred alternative because it would allow the greatest degree of flexibility to fishery operations as they could expand and contract fishing capabilities as soon as the program is implemented. It would also allow people not receiving initial IFQ allocation to fish for tilefish (via IFQ leasing) before making a commitment to get into the fishery via permanent transferability of ownership as long as they meet the requirements under the reauthorized MSFCMA.

Impact Analysis: It is expected that the IFQ leasing requirements for annual IFQ allocations would have no direct impact on tilefish mortality rates. However, it is possible that alternative 3B (preferred alternative) could potentially have positive biological impacts compared to alternative 3A (and 3C, 3D, and 3E) as it does not restrict the annual IFQ allocations from being leased by individuals not intending to use them for fishing. If shares were to be leased for a purpose other than fishing, directed effort in the fishery would decrease and the amount of directed catch would be below the quota, thus, producing positive biological impacts when compared to the no action alternative (3A).

Relative to the no action alternative (3A) presented in this document, none of the proposed leasing requirements for annual IFQ allocations are expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species. In addition, none of the proposed leasing requirements for annual IFQ allocations presented in this document are expected to result in positive or negative impacts to habitat or endangered or protected species relative to the no action alternative (3A).

As indicated above, alternative 3A would prohibit the leasing of annual IFQ allocations. Hence, the leasing of quota shares would not be possible under this alternative. The lack of efficient quota redistribution to more efficient harvesters and thus the reduction of fishing capacity would be unlikely under alternative 3A. Alternative 3B would allow for annual IFQ allocations to be freely leased by any interested party as long as they meet the requirements under the reauthorized MSFCMA. This alternative would provide considerable flexibility to fishing tilefish operations as fishermen would be allowed to expand or contract fishing capabilities by leasing annual IFQ allocations. The premium received for private transactions of annual IFQ allocations will likely be higher under this alternative than any of the other evaluated IFQ leasing alternative. However, it is possible that if IFQ shares were to be leased by individuals not wishing to fish for tilefish in order to protect the species from harvest, then OY would not be attained. Alternative 3C would only allow for the temporary transfer of shares among individuals that received IFQ shares only during the first five years of the program implementation. This alternative is believed to be equitable because it initially favors commercial tilefish fishermen, who have invested time and resources into the fishery, but ultimately recognizes tilefish as a public resource and allows other individuals to participate in the fishery as long as they meet the requirements under the reauthorized MSFCMA. Alternatives 3D and 3E restrict the leasing of shares to people participating in the fishery only. Alternative 3D is similar to alternative 3C during the first five years of the program, except it allows for shares to be leased to vessels maintaining a valid limited access commercial tilefish permit in addition to IFQ shareholders. Alternative 3E is similar to alternative 3D except that it allows for shares to be leased to established (i.e., captains, mates, and deckhands) tilefish fishermen in addition to IFQ shareholders and other vessels maintaining a valid limited access commercial tilefish permit. The impacts of alternative 3E are similar to those under alternative 3D. However, it may be difficult to determine who is an establish fishermen. The cost of shares under alternatives 3D and 3E are expected to be lower than under the alternatives with fewer restrictions on the number of individuals that would be allowed to lease quota shares. Alternatives 3D and 3E would not result in drastic and rapid changes to the fisheries' status quo.

It is important to mention that IFQ sub-leasing will not be allowed under the proposed IFQ system. That is, an IFQ allocation can not be leased more than once during a fishing year. The Regional Administrator (March 24, 2008 letter from Pat Kurkul to Pete Jensen) has indicated that sub-leasing may require a new management system that may be administratively prohibitive. Furthermore, the Regional Administrator has indicated that she would "support a provision that would allow a lease to be voided in the event an emergency renders a lessee unable to fish, but only in the case where no allocation was fished pursuant to the lease." In addition, at the April 2008 Council meting, some industry members indicated that they did not see the prohibition of sub-leasing as an issue that would impede the functioning of an IFQ system for the tilefish fishery. Nevertheless, the Council believes that if new management systems that are not administratively prohibitive become available in the future, and the Council finds it necessary to implement sub-leasing in the tilefish fishery in order to improve the management of the IFQ system, then this could be addressed via the framework adjustment process (i.e., transferability rules).

4 IFQ SHARE ACCUMULATION

Alternatives:

4A: No Action (IFQ share accumulation would not be limited)
4B: Limit IFQ share accumulation to 49 percent of the TAL [Preferred Alternative]
4C: Limit IFQ share accumulation to 37 percent of the TAL
4D: Limit IFQ share accumulation to 25 percent of the TAL
4E: Limit IFQ share accumulation to 16.5 percent of the TAL

A detailed description of each alternative is presented in section 5.4 and the analysis of impacts is presented in section 7.4. In addition, alternative 4F (limit IFQ share accumulation to 66, 15, and 19 percent of the TAL for full-time tier 1, full-time tier 2, and part-time IFQ permit holders, respectively) was considered but rejected for further analysis. Since alternative 4F may result in excessive share accumulation that surpasses per vessel landings historical highs, it was not given further consideration in the document beyond justification for rejection in section 5.4.F. This alternative would require an excessive IFQ share to be defined in the FMP.

Problem Statement: Consolidation occurs when the shares needed to harvest fish become concentrated in the hands of fewer and fewer participants. Consolidation could lead to positive economic development and may be considered a rational outcome when a resource can be sold. Nevertheless, it might result in only a few participants enjoying the benefits of this public resource, as the price of shares goes up and smaller operators may not be able to afford to buy their way into the fishery. It is possible that in some cases, these smaller operators might lease shares and become economically dependent on absentee owners.

An excessive share limit can only be defined in the context of a well defined problem which is related to the amount of quota share owned or controlled by a single entity, or by the number of operating entities. The excessive share limit is defined as that limit which prevents the problem from occurring or keeps it at an acceptable level. The most obvious problem is market power in the sale of fish. This is likely not to be much of a problem, given the number of substitute products for tilefish in the market place.

Council Recommendation: The Council chose alternative 4B as the preferred alternative. That is, the IFQ share accumulation limit would be set at 49% of the TAL (adjusted). In selecting this alternative, the Council considered the potential market power impact that a specific entity could have when accumulation tilefish IFQ shares and historical fishing practices. The Council did not believe that a 49% IFQ share cap would allow harvesters to control the market price for tilefish. In fact, the Council does not believe that even a 100% IFQ share cap in the tilefish fishery would allow a single harvester control the market price for tilefish due to the large number of substitutes for tilefish available in the market place. In addition, the Council took into consideration historical landings and participation when selecting this alternative. For example, during the open access fishery, one vessel landed approximately 36% and 37% of the overall tilefish landings during the 1989 and 1990 years, respectively. The Council thought that

setting a 49% IFQ share accumulation limit would provide tilefish vessels with an opportunity to accumulate shares above what some specific vessels had landed in recent history in order to potentially allow for the most efficient operations to harvest the quota. Furthermore, the Council was also concerned that if the overall TAL level goes down substantially, then full-time tier 1 and tier 2 vessels may not be able to fish at efficient levels and may require buying/leasing additional shares from other vessels in order to continue to participate full-time in the fishery. The vessels that qualified for tier 1 and tier 2 when the FMP was first developed had more than enough capacity to harvest the current quota level. In fact, in 1997, three full-time tier 1 vessels landed between 706 and 811 thousand pounds of tilefish.

Impact Analysis: Relative to the no action alternative (4A) presented in this document, none of the proposed alternatives for share accumulation caps are expected to result in changes in tilefish mortality rates, discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species. In addition, none of the proposed share accumulation measures presented in this document is expected to result in positive or negative impacts to habitat or endangered or protected species relative to the no action alternative (4A).

The absence of any ownership cap, as in alternative 4A would provide fertile ground for consolidation of fishing operations. Consolidations leads to efficiency in the fishery as fishermen would attempt to maximize profits by reducing production costs and improving efficiency (better fishing and handling methods). Alternatives 4B (preferred alternative) through 4E would limit specific percentages of the total TAL (i.e. after adjustments for incidental catch, research asset-aside, and/or overages have been made) allocated to the IFQ program participants. Ownership caps (alternatives 4B through 4E) limit consolidation and potentially the achievement of the most efficient operations to harvest the quota. Although consolidation is important in terms of economic efficiency, concentration of shares in the hands of a relatively small number of individuals or entities could also lead to excessive market power for just a few entities. The concentration of market power could affect working conditions, process, and wages paid to crew, and could potentially harm some participants in the fishery. However, as indicated in the previous section, the Council believes that concentration of market power in the tilefish fishery is unlikely given the number of substitute products for tilefish in the market place.

If the initial IFQ share allocation for any given person or entity is higher than the selected percent accumulation cap, then the excess shares associated with the initial allocation must be divested within 180 days after the implementation of the IFQ system. It is important to mention that forcing IFQ shareholders to sell excess shares within 180 days may produce undesirable dynamics in share price depending on demand.

5 COMMERCIAL TRIP LIMITS

Alternatives: **5A: No Action (Maintain status quo management regarding trip limits) [Preferred Alternative]**
5B: If an IFQ system is not implemented for the part-time permit category, then a 15,000 pounds tilefish trip limit would be implemented for that permit category

A detailed description of each alternative is presented in section 5.5 and the analysis of impacts is presented in section 7.5.

Problem Statement: Under the current management system, trip limits are only imposed in the incidental permit category (open access) to achieve a "target" or soft quota. Stakeholders in the part-time category have indicated that they would like to see a trip limit implemented for their permit category if an IFQ system is not implemented for the part-time category to avoid early closures. The part-time category closed early in 2002, 2004, 2005, and 2006.

Council Recommendation: The Council chose 5A as its preferred alternative because a 15,000 pound trip limit would not likely assist in substantially extending the tilefish season for the part-time permit category. In addition, the implementation of a trip limit for the part-time permit category could change fishing practices which could impact the stock assessment. The tilefish stock assessment relies on commercial CPUE (catch-per-unit effort) data as an index of abundance. How trip limits may change fishing practices, and therefore catch rates, are an important consideration for stocks which used commercial CPUE data as a measure of relative abundance. Furthermore, as indicated above, the Council recommended the implementation of an IFQ system for all permit categories, as such, there is n need to implement a trip limit for the directed fishery.

Impact Analysis: Alternative 5A (preferred alternative) would maintain the status quo trip limit system. That is, the previously established 300 pounds per trip for the incidental category would continue and trip limits would not be implemented for non-incidental tilefish permit holders. Alternative 5B would implement a 15,000 pound trip limit for the part-time category in the event that an IFQ system is not implemented for the part-time category. The trip limit under alternative 5B may be adjusted, downward or upward, at any time, outside of a quota specification or framework process by the Regional Administrator if the trip limit is prohibiting the fishery from operating efficiently. Alternative 5B would likely help to avoid potential early closures for that component of the fishery. Part-time category stakeholders have indicated that a 15,000 pound limit would allow them to continue to fish at a profitable level without saturating the market with product, and at the same time extending the fishing season. However, a threshold analysis indicated that it is not likely that a 15,000 pound trip limit would assist in substantially extending the fishing season for part-time permit category vessels. Under alternative 5B, the Regional Administrator would have the flexibility to reduce the tilefish trip limits under rulemaking consistent with the Administrative Procedures Act if 80 percent of the quota for the category is attained or forecasted to be attained. This

alternative would provide a useful tool that can be exercised at the discretion of the Regional Administrator in order to prevent potential overages and early closures in the part-time permit category.

It is not anticipated that the implementation of alternative 5B would result in direct biological impacts (positive or negative) to the stock or other fisheries when compared to alternative 5A. However, it is possible that the implementation of alternative 5B may hinder the ability to measure relative population abundance through commercial catch per unit effort. A fishery independent measure of abundance does not exist for tilefish. The tilefish stock assessment relies on commercial CPUE data as an index of abundance. How trip limits may change fishing practices, and therefore catch rates, are an important consideration for stocks which used commercial CPUE data as a measure of relative abundance.

Alternative 5B is not expected to result in changes to the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species, and it is not expected to result in positive or negative impacts to habitat or endangered or protected species relative to the no action alternative (5A).

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6 FEES AND COST RECOVERY

Alternatives: 6A: No Action (Fees and cost recovery would not be collected if an IFQ program is implemented)
6B: IFQ shareholder directly pays [Preferred Alternative]
6C: IFQ shareholder pays via a federally permitted dealer

A detailed description of each alternative is presented in section 5.6 and the analysis of impacts is presented in section 7.6.

Problem Statement: NMFS is required under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to collect fees to recover the costs directly related to the management, enforcement, and data collection and analysis of IFQ programs. Under section 304(d)(2)(A) of the Act, the Secretary is authorized to collect a fee to recover these costs. The fee shall not exceed 3-percent of the ex-vessel value of the fish harvested.

Council Recommendation: The Council chose 6B as the preferred alternative. That is, the IFQ permit holder would be responsible for self-collecting his or her own fee liability for all his or her IFQ tilefish landings. The IFQ permit holder would be responsible for submitting this payment to NMFS.

The Council was concerned that under alternative 6C, there was a possibility that a dealer that has collected associated cost recovery fee payments from IFQ tilefish landings could potentially go out of business, and then, the money could not be forwarded to the Service (even though it has been collected form fishermen that have landed tilefish under the IFQ system.

Impact Analysis: Under the No Action alternative (6A) fees and cost recovery would not be implemented if an IFQ program is put in place for the commercial tilefish fishery. This alternative would be contrary to the Congressional mandate to collect fees for IFQ programs as specified in the Magnuson-Stevens Act. In general terms, under alternative 6B (preferred alternative), the IFQ shareholder directly pays fees and under alternative 6C, IFQ shareholder pays via a federally permitted dealer.

Hypothetical Fee Calculation (Alternatives 6B and 6C)

Based on a TAL of 1.995 million pounds of tilefish, a 2005 coastwide average ex-vessel price for all market categories of $2.48 per pound, and the maximum fee level of 3-percent; the total fee expected to be collected in the first year of the program would be $141,066 under the implementation of an IFQ program for all permit categories. Preliminary analyses show that management, enforcement, and data collection cost would be approximately $94,000 (the equivalent of a 2-percent fee), thus for the purpose of discussion a 2-percent fee is compared to the default 3-percent fee. Given the same assumptions and a 2-percent fee level, the total fee expected to be collected in the first year of the program would be $94,044 under the implementation of an IFQ program for all permit categories. Producer surplus would be reduced by the amount of the fee plus

any other costs associated with paying the fee. Those costs would include time and materials required for completing the paperwork and paying the fee. This is an administrative action and no impacts to the natural resources are expected.

Assuming 2005 tilefish landings and ex-vessel price, the potential cost to fishermen associated with the cost recovery fee of 3-percent of ex-vessel value could range from approximately $12,800 to $29,200 for full-time tier 1 vessels. For part-time vessels the costs associated with a 3-percent cost recovery fee could range from approximately $10 to $6,300. The potential cost to fishermen associated with the cost recovery fee of 2-percent of ex-vessel value could range from approximately $8,500 to $19,500 for full-time tier 1 vessels. For part-time vessels the costs associated with a 2-percent cost recovery fee could range from approximately $7 to $4,200. Fees and cost recovery values associated full-time tier 2 vessels are not included for confidentiality issues.

It is important to mention that while alternatives 6B and 6C would impose an initial default fee and cost recovery rate of 3-percent, this rate may change in subsequent years if the fee and cost recovery is lower than initially assessed.

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7 IFQ PROGRAM REVIEW PROCESS

Alternatives: 7A: No Action (Review of the IFQ program during a specific timeframe period would not be implemented)
7B: Allow for a formal and detailed review of the IFQ program five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years) [Preferred Alternative]

A detailed description of each alternative is presented in section 5.7 and the analysis of impacts is presented in section 7.7. In addition, alternative 7C (develop a system for review of the IFQ program such as fixed-term, cascading entitlements) was considered but rejected for further analysis. This alternative would allow for a review of the IFQ system comparable to the drop-through system approach proposed in the New South Wales fishery (Australia) that creates a cascade of fixed-term privileges for quota shareholders to allow the introduction of new management measures if necessary. Since this alternative is considered to be too complicated and tedious for managers and stakeholders to implement, it was not given further consideration in the document beyond justification for rejection in section 5.7.C.

Problem Statement: The reauthorized Magnuson-Stevens Act of 2006 requires a formal program review five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years).

Council Recommendation: The Council chose 7B as its preferred alternative because it will allow for a timely review and evaluation of the IFQ program as required by the reauthorized MSFCMA.

Impact Analysis: Under alternative 7A, a formal review process would not be required if an IFQ program is put in place for the commercial tilefish fishery. Alternative 7A would be in violation of the MSFCMA. Alternative 7B (preferred alternative) would provide for an enforceable provision for regular review and evaluation of the performance of the IFQ program. While it is not possible to anticipate the potential management costs associated with alternative 7B, they are likely to be higher than those associated with alternative 7A. Costs will depend on the complexity and scope of the review process. However, it is possible that if the IFQ program encounters significant problems that need to be addressed before the initial 5-year review period, addressing those problems will likely increase unanticipated management costs. This is an administrative action and no impacts to the natural resources are expected.

8 IFQ REPORTING REQUIREMENTS

Alternatives: 8A: No Action (Maintain status quo reporting requirements)
8B: Facilitation of an IFQ system administration if an IFQ program is implemented [Preferred Alternative]

A detailed description of each alternative is presented in section 5.8 and the analysis of impacts is presented in section 7.8.

Problem Statement: This action is being considered as a means to facilitate IFQ reporting requirements under an IFQ program. Under a new IFQ program, it would be necessary to make changes to the current data base system to support IFQ reporting requirements. Items may include trip identification required on dealer reports, IVR, and VTR (vessel trip report) submissions, documentation of all business entities in which the IFQ owner has an interest (for the monitoring of ownership concentration), documentation of U.S. citizenship or permanent resident alien, items facilitating the recovery of IFQ management, enforcement, and data collection costs, and other documents to verify IFQ ownership eligibility.

Council Recommendation: The Council chose 8B as its preferred alternative because it will allow for the facilitation of an IFQ system administration. This alternative would ensure that amounts of tilefish landed and prices are properly recorded for quota monitoring purposes and the calculation of IFQ fees.

Impact Analysis: Under alternative 8A, reporting requirements for the tilefish fishery would remain as they are currently. Alternative 8A would continue to use the same reporting system currently in use to mange the limited access fishery for managing the fishery under an IFQ system. Alternative 8B (preferred alternative) would modify the current reporting system to include additional requirements to identify landings under an IFQ system in a more efficient manner. Under alternative 8B, a trip identifier would be mandatory in order to match all reported IVR landings to the dealer repots. This would allow for all IVR data to match dealer (weighout) data on a trip-by-trip basis. In addition, the dealer number would also need to be recorded into the IVR to have vessels report pounds by dealer on the IVR. This would ensure that amounts of tilefish landed and prices are properly recorded for quota monitoring purposes and the calculation of IFQ fees. The implementation of these reported requirements will not have positive or negative social impacts. This is an administrative action and no impacts to the natural resources are expected.

9 IVR REPORTING REQUIREMENTS

Alternatives: 9A: No Action (Maintain the status quo reporting of tilefish landings under the current IVR system)
9B: The owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 48 hours after offloading fish [Preferred Alternative]

A detailed description of each alternative is presented in section 5.9 and the analysis of impacts is presented in section 7.9.

Problem Statement: This action is being considered in order to improve the IVR record keeping system. The current Tilefish FMP requires that the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 24 hours after returning to port and offloading as required by the Regional Administrator. According to industry members, not all landings are reported within the 24 hour period as required under current regulations. Some stakeholders have commented that they should only report landings via IVR once they know for sure how much fish they have in the hold and this can only be reported accurately once the fish has been packed out. In addition, industry members have also indicated that if they report landings after reaching port but before the fish has been packed-out, the catch estimates can be off by as much as 1,500 pounds.

Council Recommendation: The Council chose 9B as its preferred alternative because it will accommodate more accurate timing of commercial tilefish landings. Under alternative 9B, the time required for owners or operators of limited access tilefish vessels to submit catch reports via the IVR system after offloading tilefish changes from 24 to 48 hours.

Impact Analysis: Alternative 9A would maintain the status quo IVR reporting requirements. Under alternative 9B (preferred alternative), the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 48 hours after offloading fish. It is anticipated that increasing the time allowed for IVR reporting from 24 hours to 48 hours would allow for tilefish catch reports to be more accurate. The changes to the IVR reporting system under alternative 9B are considered administrative in nature and no impacts to the natural resources are expected. However, indirect positive impacts may occur as tilefish landings are expected to be more accurate under alternative 9B than under the current management system (alternative 9A).

10 COMMERCIAL VESSEL LOGBOOK REPORTS [considered but rejected for further analysis]

There are no proposed alternatives as two alternatives to the current status quo logbook reporting system were considered (10B and 10C) but rejected for further consideration. More specifically, alternative 10B (exempt longline tilefish vessels from current logbook record keeping requirements (VTR) and implement a specific logbook system for those longline vessels) and alternative 10C (implement an electronic reporting system for commercial landings) were not given further consideration in the document beyond the justification for rejection in section 5.10.B and 5.10.C, respectively, because alternative 10B may be too burdensome to implement for all parties involved and currently there are no management system capabilities to implement alternative 10C.

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11 HOOK SIZE RESTRICTIONS [considered but rejected for further analysis]

One alternative was considered (11A; implement minimum hook size restriction in the commercial fishery) but rejected for further consideration in the document beyond the justification for rejection in section 5.11.A because currently there is no quantifiable scientific study data available to support this assertion.

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12 RECREATIONAL PARTY/CHARTER PERMITS AND REPORTING REQUIREMENTS

Alternatives: 12A: No Action (Maintain the status quo permit and reporting requirements for party/charter vessels and operators)
12B: Establish a party/charter tilefish vessel permit and party/charter vessel reporting requirements [Preferred Alternative]

A detailed description of each alternative is presented in section 5.12 and the analysis of impacts is presented in section 7.12.

Problem Statement: The current tilefish FMP does not contain management measures for the recreational fishery. The FMP regulations allow for tilefish to be harvested by the recreational sector. When the FMP was first developed, the recreational participation in this fishery was very small and there was not a substantial directed recreational fishery. However, some Council members have indicated that they have seen an increase in recreational tilefish landings and would like to readdress this sector of the fishery. Currently, it is thought that much of the catch by the recreational sector is not captured through federal reporting requirements. The issuance of a permit is an essential ingredient in the management of fishery resources. The purpose and use of the party/charter permits is to: register fishermen and fishing vessels; list the characteristics of fishing vessels; exercise influence over compliance (e.g. withhold issuance pending collection of unpaid penalties); provide a mailing list for the dissemination of important information to the industry; and, provide a universe for data collection purposes.

Council Recommendation: The Council chose 12B as its preferred alternative because it will allow for collection of data that is likely to enhance the understanding of the for hire recreational participation in this fishery.

Impact Analysis: Alternative 12A (no action alternative) would not implement permit and reporting requirements for party/charter vessels and operators. Alternative 12B (preferred alternative) would implement party/charter vessel. In addition, alternative 12B would require that any vessel fishing recreationally with a party/charter boat permit must have on board at least one operator who holds a permit. These alternatives are purely administrative in nature as it deals with vessel permit, operator permit, and reporting requirements for party/charter vessels. As such, no impacts to the natural resources are expected. However, the permit and reporting requirements for party/charter vessels (alternative 12B) will allow for collection of better data on this sector of the fishery. Better data would allow for a better understanding of the overall recreational participation in this fishery. According to NMFS VTR data, 32 vessels have landed tilefish from 1996 through 2005. It is expected that all of these vessels will apply for a party/charter vessel permit in order to maintain flexibility in their operations. It is estimated that all party/charter vessels participating in the tilefish fishery hold one or more permits for fisheries that require logbook submission (e.g., multispecies, summer flounder, black sea bass, scup, etc.). As such, these vessels are only required to submit one report to meet the reporting requirement for these fisheries. Therefore, no additional reporting is anticipated by the addition of tilefish to the list.

13 RECREATIONAL BAG-SIZE LIMITS

Alternatives:

13A: No Action (Maintain status quo recreational bag-size limits)

13B: Establish an 8-fish recreational bag-size limit per person per trip [Preferred Alternative]

13C: Establish a 4-fish recreational bag-size limit per person per trip

13D: Establish a 2-fish recreational bag-size limit per person per trip

13E: Establish a 1-fish recreational bag-size limit per person per trip

13F: Establish a tilefish recreational bag-size limit of 1-fish per person per trip if future recreational landings go up to 4-percent of the total TAL

A detailed description of each alternative is presented in section 5.13 and the analysis of impacts is presented in section 7.13.

Problem Statement: The current FMP regulations allow for tilefish to be harvested by the recreational sector. When the FMP was first developed, the recreational participation in this fishery was very small and there was not a substantial directed recreational fishery. As such, the original FMP does not contain management measures for the recreational fishery. However, some Council members and stakeholders have indicated that they have seen an increase in recreational tilefish landings and would like to readdress this sector of the fishery. Currently, it is thought that much of the catch by the recreational sector is not captured through federal reporting requirements. Since the catch data for this sector is not fully known, no quota is set aside for the recreational fishing sector, nor is catch counted towards the total allowable landings for the fishery. Implementing caps on the number of fish that recreational anglers are allowed to land may be needed in order to limit the intake of tilefish by the recreational fishery and thus meet the management and recovery objectives of the FMP.

Council Recommendation: The Council chose 13B as the preferred alternative. Alternative 13B would implement an 8-fish recreational bag-size limit per person per trip. This is the largest recreational bag-limit among the evaluated alternatives implementing recreational bag-size limits (alternatives 13B-13F). An 8-fish recreational bag-size limit corresponds to the highest angler mean effort for the 1996 through 2005 period.

The Council aggress that it is likely that the number of recreational fishing trips targeting tilefish is limited due to weather and sea conditions as the fish are found offshore in deep water. As such, recreational participation is likely to be already very limited. Nevertheless, the Council is concern that it appears to be that recreational participation is on the rise and limits on the amount of recreational landings need to be addressed. The Council anticipates that as additional information is collected for this segment of the

industry, adjustments to the recreational bag-size limit could be implemented via the framework adjustment process.

Impact Analysis: It is important to address the recent increase of recreational participation in the tilefish fishery. While the FMP does not prohibit tilefish to be harvested by the recreational sector, it is important to consider recreational management measures that limit the landings of tilefish by recreational anglers in order to meet the management and recovery objective of the FMP. Alternative 13A would not implement a bag-limit in the tilefish fishery. Alternative 13B (preferred alternative) would establish the largest recreational bag-limit limit (8-fish per angler per trip) followed by alternatives 13C (4-fish per angler per trip), 13D (2-fish per angler per trip), and 13E (1-fish per angler per trip). Finally, alternative 13F would implement a tilefish recreational bag-size limit of 1-fish per person per trip if future recreational landings go up to 4-percent of the total TAL. The proposed limits under alternatives 13B, 13C, and 13E are associated with the highest, medium, and lowest angler mean effort for the 1996 through 2005 period. Alternative 13D would set a bag-limit slightly higher than the lower range (alternative 13E) of the mean effort seen in the last 10 years.

Alternatives 13B through 13F are expected to limit the amount of recreational tilefish landings when compared to alternative 13A. As previously stated, the recreational catch is not counted towards the total allowable landings for the fishery. Therefore, large increases in recreational landings could potentially impact the recovery of the stock. These alternatives are likely to produce positive biological impacts to the stock when compared to alternative 13A.

The number of tilefish discarded by recreational anglers is low. According to VTR data, on average, approximately two fish per year were discarded by party/charter recreational anglers for the 1996 through 2005 period. The discard level of tilefish in the directed commercial fishery is low due to the poor survival rate of discarded fish. Commercial tilefish fishermen have indicated that they do not discard tilefish at all because they would die. It is possible that the low discard rate reported by party/charter boats in the VTR data is also related to the overall low survival rate of discarded fish. Relative to the no action alternative (13A) presented in this document, none of the proposed recreational bag-size limits are expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species. In addition, none of the proposed recreational bag-size limits presented in this document are expected to result in positive or negative impacts to habitat or endangered or protected species relative to the no action alternative (13A).

There is very little information available to empirically estimate how sensitive the affected anglers might be to the proposed recreational bag-size limits (alternatives 13B-13F). It is possible that the proposed management measures could restrict the recreational fishery and cause some decrease in recreational satisfaction (i.e., low bag limit). However, due to lack of data, these effects cannot be quantified. It is likely that the proposed measures with a lower bag-size limit (alternatives 13E and F) would affect recreational satisfaction to a greater extent than measures with larger bag-size limits

(alternative 13B and C). Even though the proposed management measures could affect the demand for trips for tilefish, it is not expected that they would negatively affect the overall number of recreational fishing trips in the North and mid-Atlantic regions.

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14 IMPROVE MONITORING OF GOLDEN TILEFISH LANDINGS CAUGHT IN THE MID-ATLANTIC REGION

Alternatives: 14A: No Action (Maintain the status quo management regarding the catch and reporting of tilefish)
14B: Implement measures that would allow for golden tilefish caught in the management unit to be landed in the management unit only [Preferred Alternative]

A detailed description of each alternative is presented in section 5.14 and the analysis of impacts is presented in section 7.14.

Problem Statement: The management unit for this FMP is defined as all golden tilefish under United States jurisdiction in the Atlantic Ocean north of the Virginia/North Carolina border. Tilefish south of the Virginia/North Carolina border are currently managed as part of the Fishery Management Plan for the Snapper-Grouper Fishery managed by the South Atlantic Fishery Management Council. This action is being considered in order to improve the monitoring of tilefish landings in the mid-Atlantic region. According to stakeholders, fisherman holding a tilefish Federal permit and a snapper/grouper Federal permit could potentially fish for golden tilefish in the mid-Atlantic and for southern tilefish (south of the Virginia/North Carolina border) on the same trip. If tilefish landings are not properly reported indicating where they came from, the recovery of the stock could potentially be adversely affected. If the amount of golden tilefish is mistakenly underreported on trips where tilefish from both regions are landed, this could adversely affect the recovery strategy for this species as not all golden tilefish landings may be properly reported. On the other hand, if the amount of golden tilefish is mistakenly over reported on trips where tilefish from both regions are landed, this could result in the golden tilefish fishery being closed too early.

Council Recommendation: The Council chose 14B as its preferred alternative because it would allow for better monitoring of tilefish landings in the management unit. This alternative would likely ensure that golden tilefish landings from Maine through Virginia are properly deducted from the overall golden tilefish TAL. As tilefish landings are properly reported indicating where they came from, the management of the tilefish stock will be enhanced.

Impact Analysis: Alternative 14A would maintain the existing reporting requirements for golden tilefish in the mid-Atlantic region. Alternative 14B (preferred alternative) would require that vessels landing tilefish caught from this management unit must land tilefish in the northeast/mid-Atlantic states of Maine through Virginia and prohibit combination trips in which vessels fish in both management units on the same trip. It is expected that alternative 14B will have positive biological impacts as tilefish landings are expected to be more accurately reported when compared to alternative 14A (status quo).

Relative to the no action alternative (14A) presented in this document, alternative 14B is not expected to result in changes in the discarding rate of tilefish when targeted,

discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species. In addition, alternative 14B is not expected to result in positive or negative impacts to habitat or endangered or protected species, or socioeconomic aspects of the fishery relative to the no action alternative (14A).

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15 FRAMEWORK ADJUSTMENT PROCESS

Alternatives: 15A: No Action (Maintain the status quo measures that can be added or modified via the framework adjustment process)
15B: Expand the list of management measures identified to be added or modified via the framework adjustment process to include recreational measures and measures that facilitate the periodic review of the IFQ program [Preferred Alternative]

A detailed description of each alternative is presented in section 5.15 and the analysis of impacts is presented in section 7.15.

Problem Statement: The FMP implemented a framework adjustment procedure that allows the Council to add or modify management measures through a streamlined public review process. Since the recreational participation in the fishery was very small and there was not a substantial directed recreational fishery when the FMP was fist developed, the FMP does not contain management measures for the recreational fishery. However, the FMP regulations allow for tilefish to be harvested by the recreational sector. Some Council members have indicated that they have seen an increase in recreational tilefish landings and would like to have tools at hand that can be used to facilitate the management of the recreational component of the fishery. The implementation of this action would allow the Council to address potential changes in the tilefish recreational fishery through the framework process in a timely manner. The recreational management measures that would be added to the list are: recreational bag-size limit, fish size limit, and seasons; and recreational gear restrictions or prohibitions. This action is needed as a means to add or modify recreational measures through a framework adjustment procedure.

In addition, as indicated under section 7 above, the reauthorized Magnuson-Stevens Act of 2006 requires a formal program review five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years). The implementation of this action would allow the Council to facilitate the periodic review of the IFQ program. In order to facilitate any necessary modifications of the IFQ program (if needed), the Council recommends adding specific IFQ measures to the list of management actions that could be implemented via the framework adjustment process. The IFQ measures that would be added to the list are: capacity reduction, safety at sea issues, transferability rules, ownership concentration caps, permit and reporting requirements, and fee and cost recovery issues. This action is needed as a means to address specific IFQ measures through a framework adjustment procedure.

Council Recommendation: The Council chose 15B as its preferred alternative because it would facilitate the timely management of the Tilefish FMP. This alternative would expand the list of management measures that can be modified and/or addressed via the framework adjustment process. Alternative 15B would allow for recreational measures

and measures to facilitate the periodic review of the IFQ program to be addressed via framework adjustment process.

Impact Analysis: Alternative 15A would maintain the current status quo alternatives, and as such, the list of management measure that can be added or modified through a streamlined public review process would not change. Alternative 15B (preferred alternative) would allow for the expansion of the list of management measures that have been identified in the plan that can be implemented or adjusted at any time during the year. Alternative 15B is purely administrative in nature as it deals with the expansion of the list of management measures that can be addressed under the framework adjustment process. This is an administrative action and no impacts to the natural resources are expected.

The inclusion of these measures to the list of measures that can be addressed via the framework adjustment process would provide flexibility to managers to address potential changes in the fishery in a timely manner. The inclusion of these management measures to the list of measures that can be addressed via the framework adjustment process would incorporate into the FMP mechanisms to control and address potential future increases in tilefish recreational landings and/or modifications to the IFQ system.

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16 ESSENTIAL FISH HABITAT (EFH) DESIGNATION

Alternatives: 16A: No Action (Maintain status quo EFH designation)
16B: Modify current EFH designation [Preferred Alternative]

A detailed description of each alternative is presented in section 5.16 and the analysis of impacts is presented in section 7.16. In addition, alternative 16C (GIS analysis of substrate and temperature) was considered but rejected for further analysis, on the basis that data does not support such an analysis. No further consideration was given to alternative 16C in the documents beyond justification for rejection in section 5.16.C.

Problem Statement: The FMP which initiated the management for this species became effective November 1, 2001. The FMP contains EFH designations for tilefish for various life stages. In 50 CFR Part 600.815 (a)(11), it is stated that Councils and NMFS should periodically review the EFH components of FMPs, including an update of the fishing impacts assessment. This action is being considered in order to review and, if necessary, modify the tilefish EFH designations for all tilefish life stages. The revised EFH designations are based on new information and a re-examination of information that was available when the original designations were developed.

Council Recommendation: The Council chose 16B as its preferred alternative because it would allow for more narrowly defined designations of EFH for tilefish. For juveniles and adults, the updated descriptions of EFH under alternative 16B define narrower bands of bottom temperature and depth, and describe essential substrate features on the outer continental shelf and slope in more detail than the current descriptions. The revised designations are expected to provide the basis for more effective management measures to reduce the impacts of fishing on tilefish EFH in a smaller area of the outer continental shelf and slope.

Impact Analysis: Alternative 16A would maintain the existing EFH designations established under the FMP. That is: *Eggs and Larvae*: Tilefish eggs and larvae have EFH identified as the water column between the 250 and 1200 ft isobaths, from the U.S./Canadian boundary to the Virginia/North Carolina boundary. Tilefish eggs and larvae are generally found in water temperatures from 46°F to 66°F (7.8^{o}C to 18.9^{o}C). *Juveniles and Adults*: Tilefish juveniles and adults have EFH identified as benthic waters and substrate between the 250 and 1200 ft isobaths, from the U.S./Canadian boundary to the Virginia/North Carolina boundary. Tilefish are generally found in rough bottom, small burrows and sheltered areas in water temperatures from 46°F to 64°F (7.8^{o}C to 17.8^{o}C).

Alternative 16B (preferred alternative) would revise the current EFH designations for tilefish by modifying the ranges of temperature and depth and including more detailed information on essential substrate characteristics. The revised EFH designations under alternative 16B are: *Eggs and Larvae*: EFH for tilefish eggs and larvae is the water column on the outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary in mean water column temperatures between 7.5°C

and 17.5°C (45.5°F to 63.5°F). *Juveniles and Adults*: EFH for tilefish juveniles and adults is semi-lithified clay substrate on the outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary in bottom water temperatures between 9°C and 14°C (48.2°F to 57.2°F), which generally occur in depths between 100 and 300 m (328 to 984 ft). Tilefish create horizontal or vertical burrows in semi-lithified clay sediments, a substrate type with cohesive properties that allow the burrows to maintain their shape. Tilefish may also utilize rocks, boulders, scour depressions beneath boulders, and exposed rock ledges as shelter.

The new descriptions of EFH under alternative 16B include narrower temperature and depth ranges and use meters and degrees Centigrade, as well as feet and degrees Fahrenheit, to define them. The new juvenile and adult EFH designations also include detailed descriptions of sediment types required for burrowing and other benthic habitat features that provide shelter for tilefish. The temperature and depth ranges used in the action alternative fall within the ranges identified in the status quo descriptions. Relative to the no action alternative 16A, the impacts of implementing alternative 16B on the managed resource and habitat would be neutral, but could be positive if more specific designation in a smaller area leads to more effective management measures that have the added benefit of increasing resource productivity. There may also be positive socioeconomic impacts since human activities may not be unnecessarily constrained in areas no longer considered "essential" as tilefish habitat. In addition, this alternative (16B) is not expected to affect non-target, endangered, or protected species.

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17 HAPC DESIGNATION

Alternatives: 17A: No Action (Maintain the status quo HAPC designation)
17B: Status quo HAPC with modified depth range
17C: Designate HAPC in a specified depth range within four canyons [Preferred Alternative]
17D: Designate HAPC as thirteen canyons (in a specified depth range)

A detailed description of each alternative is presented in section 5.17 and the analysis of impacts is presented in section 7.17. The number of alternatives that can be selected for HAPC designation is not limited to one. Therefore, there are 8 possible HAPC designations based on individual alternatives or combinations of alternatives. These are 17A only; 17A+17C; 17A+17D; 17B only; 17B+17C; 17B+17D; 17C only; and 17D only. Alternatives 17C and 17D are mutually exclusive. Alternative 17C (only) is the preferred alternative.

Problem Statement: The FMP which initiated the management for this species became effective November 1, 2001. The FMP contains EFH and HAPC designations for tilefish for various life stages. In 50 CFR Part 600.815 (a)(11), it is stated that Councils and NMFS should periodically review the EFH components of FMPs, including an update of the fishing impacts assessment. This action is being considered in order to review and, if necessary, modify the tilefish HAPC designation for all tilefish life stages. New information and re-examination of information that was available when the original designations were developed are used to revise existing HAPC designations and develop new alternatives for juvenile and adult tilefish.

Council Recommendation: The Council chose 17C as its preferred HAPC alternative because it designates four canyons on the outer continental shelf and slope that are known to have clay outcrop/pueblo habitats,[2] a habitat type that is particularly sensitive to fishing impacts. Under alternative 17C, portions of Norfolk, Veatch, Lydonia, and Oceanographer canyons within the depth range identified in the selected EFH designation (100 and 300 meters in preferred alternative 16B) would be designated as HAPC for juvenile and adult tilefish.

Impact Analysis: Alternative 17A would maintain the existing HAPC designation established under the FMP. "The MAFMC recommended in the Tilefish FMP that the substrate between the 250 and 1200 ft isobath, from U.S./Canadian boundary to the Virginia/North Carolina boundary within statistical areas 616 and 537 be designated as HAPC for juvenile and adult tilefish" (MAFMC 2000).

Alternative 17B would modify the current HAPC designation for juvenile and adult tilefish, described above in alternative 17A (no action), and redefine HAPC for juvenile

[2] The complex of burrows in clay outcrops along the slopes and walls of submarine canyons, and elsewhere on the outer continental shelf, have been called **"pueblo habitat"**, because of their similarity to human structures in the southwestern United States (Cooper and Uzmann 1977).

and adult tilefish to be clay outcrop/pueblo habitats in an area of the outer continental shelf and slope bounded by 70°W and 39°N in depths of 100 to 300 meters (328 to 984 ft). This modification would define the tilefish juvenile and adult HAPC designation as the substrate type within the revised EFH designation (alternative 16B) that is the most vulnerable to fishing gear impacts (see section 6.3.2). The HAPC identified in this alternative (and in the status quo designation) includes portions of three of the 13 canyons – Hudson, Block, and Atlantis – that are listed in alternative 17D. None of these three canyons are known to include clay outcrop/pueblo village tilefish habitats, but only one of them (Hudson) has been surveyed.

Alternative 17C (preferred alternative) would define HAPC for juvenile and adult tilefish to be clay outcrop/pueblo habitats in an area of the outer continental shelf and slope within Norfolk, Veatch, Lydonia, and Oceanographer canyons at the depth range specified for tilefish EFH (100 - 300 meters). Under this alternative, only canyons with known pueblo habitats and/or clay outcropping areas would be designated as HAPC.

Alternative 17D would define HAPC for juvenile and adult tilefish to be clay outcrop/pueblo habitats in an area of the outer continental shelf and slope within Norfolk, Washington, Baltimore, Wilmington, Hudson, Block, Atlantis, Veatch, Hydrographer, Oceanographer, Gilbert, Lydonia, and Heezen canyons at the depth range specified for tilefish EFH (100 - 300 meters). Under this alternative, canyons that are known to have pueblo habitats, clay outcroppings, or sufficient slope (in the canyon walls) to potentially contain clay outcrops would be designated as HAPC.

The proposed alternatives to the existing HAPC designation (alternatives 17B-D or any combination of 17A or B with 17C or D) are based on new information and a re-examination of information that was available when the original HAPC designation was made. Redefining HAPC for tilefish to correspond with current information regarding habitat requirements for this species would allow for more effective conservation of habitat type that is vulnerable to damage by fishing and/or non-fishing activities. It is important to mention that HAPCs do not need to be designated in order for the Council to take action to minimize the adverse impacts of fishing on EFH, and that designation of an area as an HAPC does not automatically mean that management measures are needed to protect EFH within the HAPC. However, since clay outcrop/pueblo habitat within tilefish EFH has been determined to be vulnerable to impacts from mobile, bottom-tending fishing gear, management measures to minimize those impacts are considered in this document under alternatives 18B and C (discussed below).

No direct impacts to non-target species or endangered and protected species are expected under the action alternatives (17B-17D). The social and economic impacts of the action alternatives relative to no action would be neutral unless a re-designation causes resource managers to shift their attention to EFH protection measures within a narrower depth range and specific substrate type on the outer continental shelf (alternative 17B) or in one or more of the canyons (17C and 17D). If that happens, fishing activities that might have been constrained in EFH areas that are no longer considered to be high priority for protection would continue.

18 MEASURES TO REDUCE GEAR IMPACT ON EFH

Alternatives: 18A: No Action (No GRAs)
18B: GRAs within statistical areas 616 and 537
18C: GRAs within canyons [Preferred Alternative]

A detailed description of each alternative is presented in section 5.18 and the analysis of impacts is presented in section 7.18. Because the results of the gear effects analysis performed for this amendment (Appendix E) show that there are more than minimal adverse impacts of bottom trawling on EFH for juvenile and adult tilefish, the Council must take some practicable action in this amendment to minimize those impacts. In addition, alternative 18D which would create an EEZ GRA that would prohibit fishing with bottom otter trawl in the EEZ was considered but rejected from further analysis (see section 5.18.D for additional discussion).

Problem Statement: The Magnuson-Stevens Act requires that Councils evaluate potential adverse effects of fishing activities on EFH and include in FMPs management measures necessary to minimize adverse effects to the extent practicable. Specifically for tilefish, clay outcroppings (pueblo habitats) in canyons on the continental slope have been determined to be highly vulnerable to permanent disturbance by bottom otter trawls (see Appendix E and Table 6.39 in Appendix G). Therefore, several gear restricted areas (GRAs) are proposed to minimize impacts on this vulnerable habitat type by bottom otter trawls. This restriction on the use of bottom otter trawls would apply to all federally-managed/federally permitted fisheries.

Council Recommendation: The Council chose alternative 18C as its preferred alternative and defined gear restricted areas in four canyons (Lydonia, Oceanographer, Veatch, and Norfolk) which are known to have clay outcrop tilefish habitats. These GRAs will be closed to all vessels using bottom trawls. The GRAs also include deeper areas in the canyons (>300 meters, beyond the maximum depth of tilefish EFH) to make them more enforceable. The Council also revised the areas associated with the GRAs from what was initially provided in the document. The proposed GRAs in these canyons (revised four canyon areas) are shown in Executive Summary Figures ES-1 through ES-3 and in Appendix E (Figures A20a for Oceanographer and Lydonia, A22a for Veatch, and A36a for Norfolk). In addition, coordinates for the associated closures are shown in Table 2 (section 5.18.C of this EIS). The revised four canyons areas were chosen to minimize adverse economic impact on fishermen while providing protection to areas that are known to have clay outcrop/pueblo habitats. A practicability analysis (see section 7.18.6) concluded that alternative 18B would not be practicable because it does not contain any known areas of highly vulnerable tilefish habitat and it has a high economic value as a bottom trawling area. Two of the canyon GRAs included as options in alternative 18C would also not be practicable. Four canyons GRA areas in this alternative (these are the four canyons selected for GRAs by the Council) are ranked as practicable (high) and seven as practicable (low). Habitat management measures applied to these four canyons would be more effective in terms of the amount of vulnerable tilefish EFH that would be protected relative to the area being managed.

As indicated above, the Council selected GRAs around the mouth of the four canyons on the outer continental shelf and slope that are known to have clay outcrop/pueblo habitats (Norfolk, Veatch, Lydonia, and Oceanographer). The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons (Appendix E Figures A20 for Oceanographer and Lydonia, A22 for Veatch, and A36 for Norfolk) could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat and have large adverse economic impacts.

Impact Analysis: Under alternative 18A (no action) no measures specifically intended to reduce gear impacts on juvenile or adult tilefish EFH would be implemented. Alternative 18B would prohibit the use of bottom trawls in tilefish HAPC within statistical areas 616 and 537. Based on the preferred EFH designation alternative (16B), the closure would extend from 100 to 300 meters. Alternative 18C (preferred alternative) would close portions of one, some, or all of the following 13 canyons at depths between 100 and 300 meters (328 to 943 ft) to bottom trawling: Norfolk, Veatch, Lydonia, Oceanographer, Washington, Baltimore, Wilmington, Hudson, Block, Atlantis, Hydrographer, Gilbert, and Heezen canyons. Norfolk, Veatch, and Lydonia canyons are noted as having tilefish "pueblo burrows" which are formed in exposed clay outcroppings in the canyon walls and the presence of clay outcroppings has also been noted in Oceanographer Canyon. The remaining nine canyons are steep enough to expose clay outcrops which could be utilized as pueblo habitat for tilefish (Washington, Baltimore, Wilmington, Hudson, Block, Atlantis, Hydrographer, Gilbert, and Heezen canyons), but to date there is no evidence that this habitat type exists in any of them. Only one of them (Hudson) has been surveyed.

The action alternatives would prevent damage (from either current or future trawling activity) to vulnerable tilefish habitat types in the closed areas and would result in potentially positive impacts for tilefish EFH, as well as EFH for other managed species within the GRAs. Decreased fishery encounters with the managed resource, non-target species, and protected and endangered species could also be expected in the closed areas. In general, the magnitude of any of these benefits is related to the size of the closed area. However, positive impacts in the closed areas would be partially or totally offset by shifts in bottom trawling activity to open areas. Closing tilefish HAPC within statistical areas 616 and 537 (alternative 18B) would represent the largest of all the GRA alternatives. However, none of the canyons noted as having exposed clay outcroppings (i.e., Norfolk, Veatch, Lydonia, and Oceanographer canyons) are within these two statistical areas. One canyon (Hudson) in statistical area 616 and two canyons (Block and Atlantis) in statistical area 537 are steep enough to expose clay outcrops that could be utilized as pueblo habitat for tilefish, but they have not been observed in any of these three canyons. Alternative 18C (preferred alternative) would close a smaller area than alternative 18B even if all 13 canyon areas are selected for closure, but has the potential to close specific canyon areas where pueblo habitats or clay outcroppings are known or suspected to be present. Therefore, it may provide substantial protection to tilefish EFH despite the small size of each GRA. It is possible that given that relatively small areas would be closed within these canyons (at the required depths), it may be difficult to enforce such closures.

The expected adverse economic impacts of alternative 18C would be smaller than those of alternative 18B because only two of the canyon areas support any substantial trawling activity. While no adverse economic impacts would occur under the no action alternative (18A) in the short-term, there may be negative adverse impacts in the long-term if fishing intensity/effort changes and impacts on vulnerable tilefish habitat increase. This could translate to increased impacts on the managed resource and reduced fishery yields.

Due to its potentially high economic and social impacts, alternative 18B is not considered practicable. It would only minimize the adverse impacts of fishing on tilefish EFH in three canyon areas that are not known to contain clay outcrops. It is not practicable to close two of the canyon areas included in alternative 18C (Wilmington and Hudson) because of their relatively high economic value as bottom trawling areas and there is no indication that Hudson Canyon includes any clay outcrops; no survey data are available for Wilmington Canyon. Of the remaining 11 canyon areas that are included as options in alternative 18C, it is highly practicable to prohibit bottom trawling in the four canyon areas that are known to contain clay outcrops/pueblo habitats (Norfolk, Veatch, Lydonia, and Oceanographer). It would also be practicable to establish GRAs in the other seven canyons that are not known to have this type of vulnerable tilefish habitat, but they might be less effective.

As indicated above, the Council chose 18C as its preferred alternative and closed Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The proposed GRAs in these canyons (revised four canyon areas) are shown in Executive Summary Figures ES-1 through ES-3 and in Appendix E (Figures A20a for Oceanographer and Lydonia, A22a for Veatch, and A36a for Norfolk). In addition, coordinates for the associated closures are shown in Table 2 (section 5.18.C of this EIS). The practicability analysis indicates that prohibiting bottom trawling in the four canyon areas that are known to contain clay outcrops/pueblo habitats is highly practicable. The proposed closed areas (revised canyon areas) under the chosen preferred alternative are smaller than those first analyzed under the practicability analysis (see section 7.18.6). As such, it is expected that changes in ex-revenues associated with the proposed closures would be the same or smaller than those described under the practicability analysis.

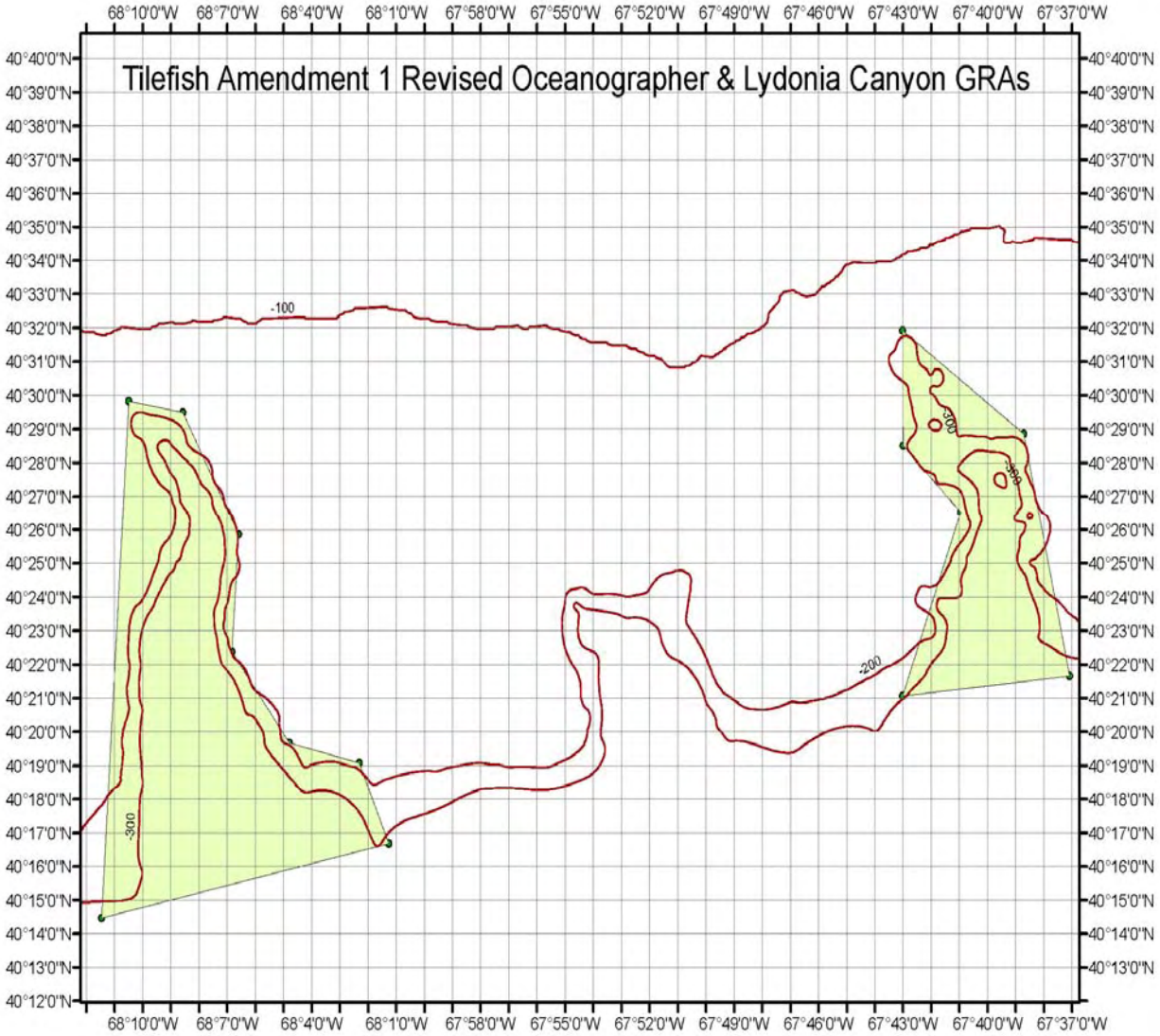

Figure ES-1 (Figure A20a in Appendix E). Revised (modified closed areas) Oceanographer and Lydonia Canyon GRAs from left to right.

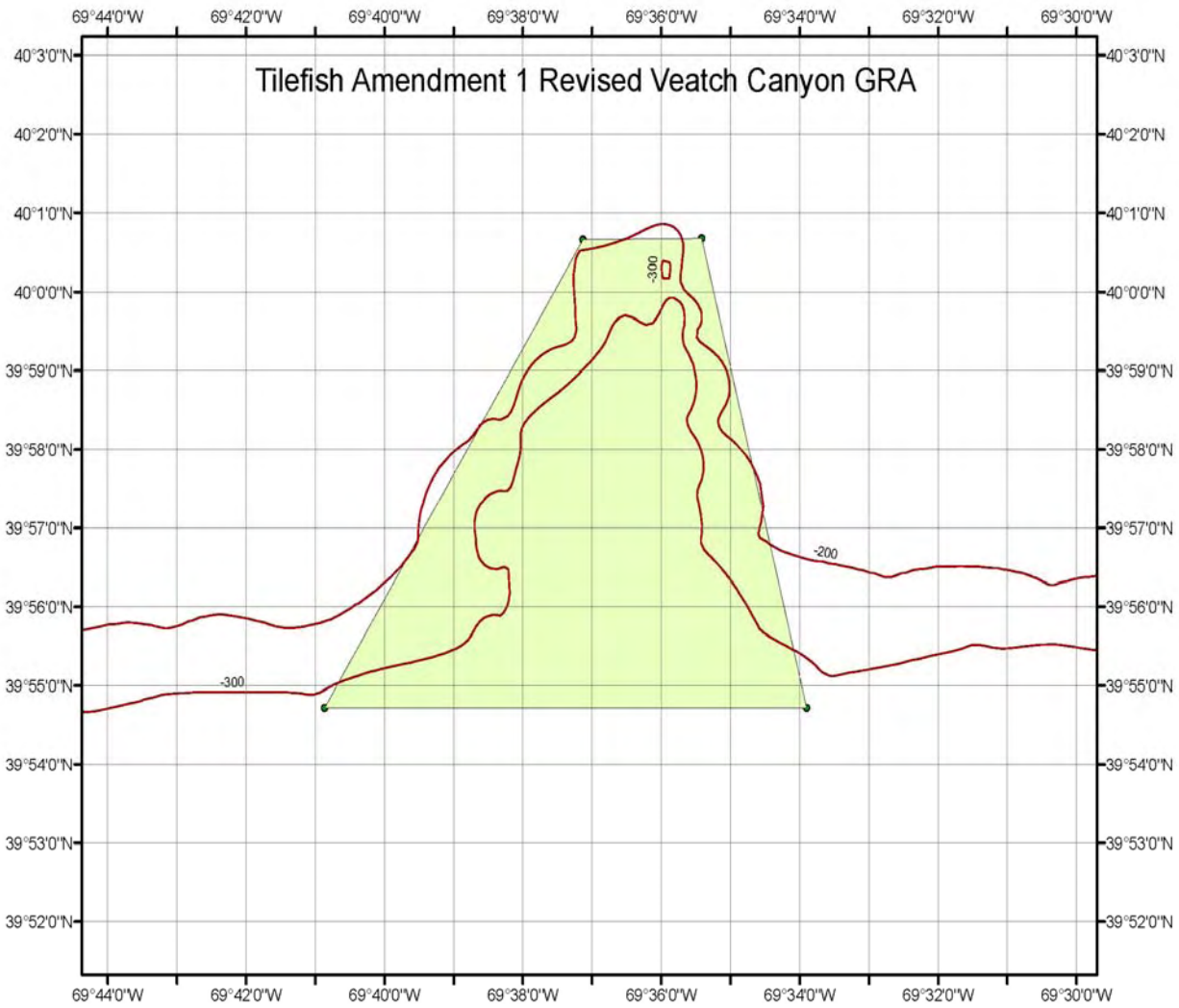

Figure ES-2 (Figure A22a in Appendix E). Revised (modified closed areas) Veatch Canyon GRA.

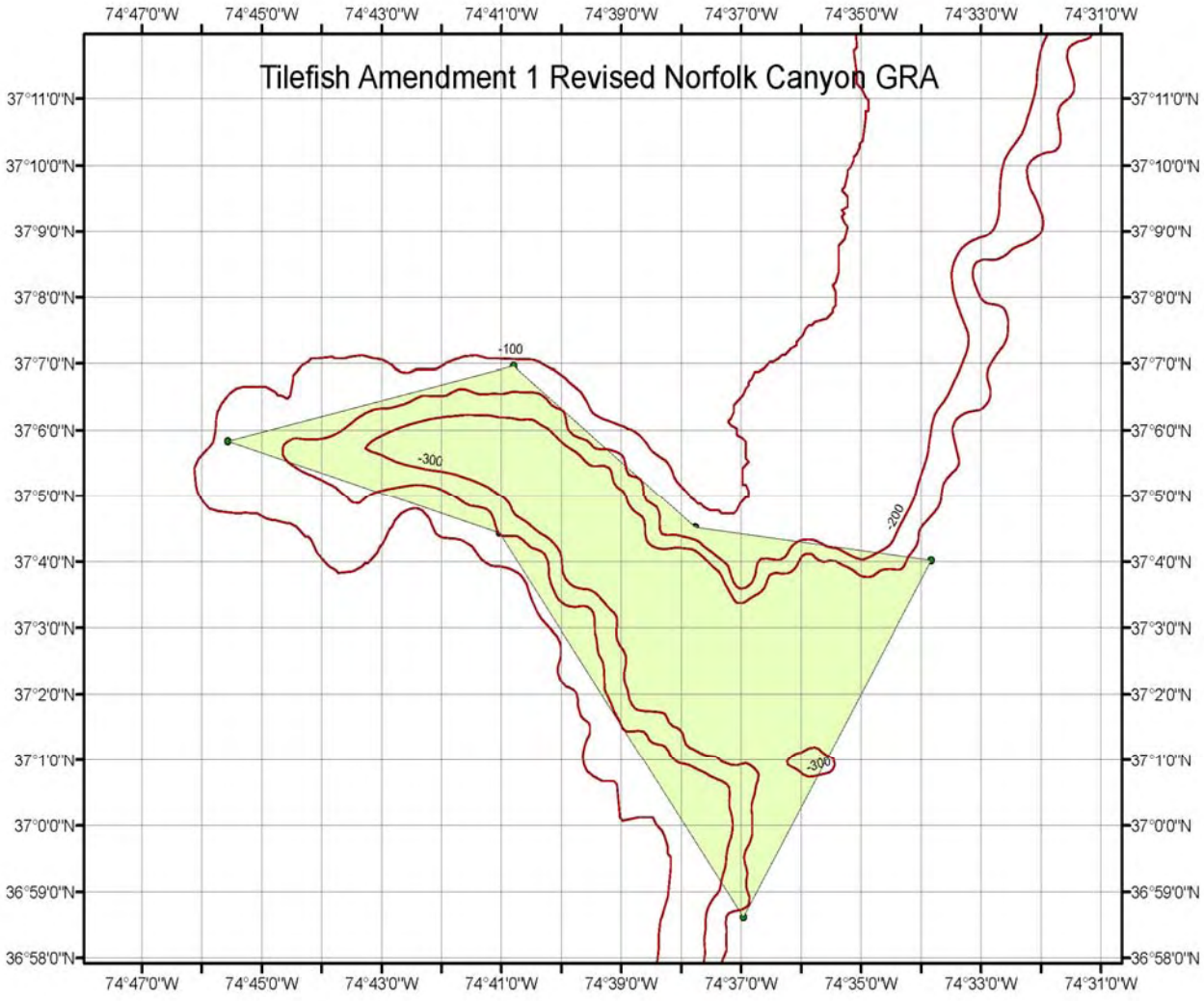

Figure ES-3 (Figure A36a in Appendix E). Revised (modified closed areas) Norfolk Canyon GRA.

19 MANAGEMENT MEASURES FOR COLLECTING ROYALTIES

Alternatives: **19A: No Action (Collection of royalties would not be implemented for the initial, or any subsequent, distribution of allocations in the tilefish IFQ program) [Preferred Alternative]**
19B: A per-unit fee would be assessed on tilefish IFQ allocations if an IFQ program is put in place for the commercial tilefish fishery. IFQ shareholder directly pays
19C: A percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder directly pays
19D: A Percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder pays via a federally permitted dealer

The Council considered three mechanisms to collect royalties in the tilefish fishery. One method is to auction off the initial quota allocation (among the IFQ permit holders), another is assessing a per-unit fee on IFQ allocations, and a third method is to assess a percentage fee based on the landed value of harvest.

A detailed description of each alternative is presented in section 5.19 and the analysis of impacts is presented in section 7.19. In addition, alternative 19E which would implement an auction system for the collection of royalties if an IFQ program is put in place for the commercial tilefish fishery was considered but rejected for further analysis. Alternative 19D was rejected from further analysis because the Council considered that given the nature of the tilefish fishery (limited number of fishery participants, small number of ports of landings, and small overall quota) potential collusion among fishery participants could occur. This will in turn not allow for efficient price discovery and could potential limit the amount of royalties collected to a level below the administrative cost of implementing the royalty collection system. Lastly, the Council was concern that an auction system could prevent the participation of individuals with limited access to capital. No further consideration was given to alternative 18D in the document beyond justification for rejection in section 5.19.D.

Problem Statement: Section 303A(d) of the reauthorized MSFMCA states that "In establishing a limited access privilege program, a Council shall consider, and may provide, if appropriate, an auction system or other program to collect royalties for the initial, or any subsequent, distribution of allocations in a limited access privilege program if— (1) the system or program is administered in such a way that the resulting distribution of limited access privilege shares meets the program requirements of this section; and (2) revenues generated through such a royalty program are deposited in the Limited Access System Administration Fund established by section 305(h)(5)(B) and available subject to annual appropriations."

The current MSFMCA requires Councils to consider an auction system to simultaneously allocate limited access fishing privileges and to collect royalties. The collection of royalties is different from cost recovery. The principle of cost recovery is that participants in an IFQ fishery should pay some or all of the costs directly related to management, data collection and analysis, and enforcement of the IFQ program. The principle associated with royalty collection is to transfer some of the financial gains earned from the use of the public resource to the general government coffers (NMFS 2007).

Council Recommendation: The Council chose 19A as the preferred alternative. As such, they recommended that royalties would not be collected if an IFQ program is put in place for the commercial tilefish fishery.

Most Council members were concerned that we do have sufficient economic data (e.g., production cost data, fishery profit levels) to make an informed decision regarding the implementation of a royalty collection system. Council members were concerned that implementing a royalty system without adequate information could negatively affect the fishery. For example, under the per-unit fee royalty collection system, managers were concerned that imposing a fee too high could force IFQ permit holder to cease fishing. Under the percentage fee assessed on the landed value of harvest collection system, managers were concerned that additional burden would be place on fishermen as this system would collect royalties in a similar fashion as the system developed to collect cost recovery fees.

Impact Analysis:

19.B.0 Alternative 19B

Alternative 19B would collect royalties in the tilefish fishery by implementing a per-unit fee assessed on IFQ allocations. An IFQ permit holder would incur a royalty fee liability for every pound of IFQ tilefish that he or she receives at the beginning of the fishing season (i.e., when share allocations are made at the beginning of each fishing year). The IFQ permit holder would be responsible for self-collecting his or her own fee liability for all his or her IFQ share allocation. The IFQ permit holder would be responsible for submitting this payment to NMFS in order to receive their annual IFQ permit. The dollar amount of the fee due would be determined by multiplying the royalty fee (per-unit fee on IFQ shares) by the number of IFQ shares allocated to a permit. Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. The level of the fee to be paid could be based on a specific revenue target.

When an allocation is transferred permanently, then the individual purchasing the IFQ shares would be responsible for paying a royalty fee liability for every pound of IFQ tilefish that he or she purchases before that individual commences to harvest tilefish. The dollar amount of the fee would be determined as described below.

The fees to be collected under alternative 19B thought 19D would be collected in a manner similar to those under cost recovery (alternative 6 above). Detailed collection procedures are presented in section 5.19 of this document.

The overall fee to be paid by commercial tilefish fishermen would depend on how many permit categories are managed via IFQ system, the royalty percent fee on landed value of harvested fish, and the amount of fish harvested by IFQ permit holders. Based on a TAL of 1.995 million pounds of tilefish, a 2005 coastwide average ex-vessel price for all market categories of $2.48 per pound, and a royalty fee of 2-percent; the total annual fee expected to be collected by the program would be $94,004 under an IFQ system for all permit categories (assuming that the entire tilefish quota is landed).

Assuming 2005 tilefish landings and ex-vessel price, the potential cost to fishermen associated with the royalty system under alternatives 19C and 19D could range from approximately $8,500 to $19,500 for full-time tier 1 vessels. For part-time vessels the costs associated with a 2-percent royalty fee could range from approximately $7 to $4,200. Fees associated full-time tier 2 vessels are not included for confidentiality issues. The overall net cost per vessel associated with a tilefish royalty collection program would depend on the royalty fee implemented, the amount and value of tilefish landed, and any other potential costs associated with paying the fee (e.g., time to compile information and complete paperwork associated with payment of fees). It is expected that producer surplus would decrease by the amount of fee plus any other potential costs associated with paying the fee (e.g., time and materials required for completing the paperwork and paying the fee).

Assuming a per-unit fee of $0.05 (pound of IFQ allocation) for illustrative purposes, the royalty collected under alternative 19B would be near similar to that described under alternative 19C and 19D above.

Alternatives 19B through 19D are expected to have negative socioeconomic impacts compared to alternative 6A as fishermen revenues could potentially decrease by the royalty fee collected by the NMFS. The royalty fees used in this section are for illustrative purposes only. Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. The level of the fee to be paid could be based on a specific revenue target, a percentage of the value of the fishing privilege, or a fee level equal to a percentage of the average value of harvested fish over some historical time period. Regardless of the methodology used to collect fees under a per-unit fee collection strategy, the larger the amount of fishing privileges a fishery participant holds, the higher the overall royalty payment for that participant. Conversely, the higher the amount of fish harvested and ex-vessel prices, the larger the overall amount of royalty collected under a royalty fee assessed on the landed value of harvested fish.

Overall Impacts of all Alternatives

Regardless of the uncertainty, at present, as to which actions will be implemented through this amendment, it is expected that the overall long-term impacts should be positive for all aspects of the human environment. This is because, barring some unexpected natural or human-induced catastrophe, the regulatory mandates under which Federal fishery management operates require that management actions be taken in a manner that will optimize the long-term condition of managed resources, non-target species, habitat, protected species, and human communities. Consistent with NEPA, the SFA requires that management actions be taken only after consideration of impacts to the biological, physical, economic, and social dimensions of the human environment. This document functions to identify the likely outcomes of various management alternatives. Any alternative that would compromise resource sustainability would be in contradiction with the mandates of the MSFCMA/SFA and would not be expected to be implemented. Additional scrutiny of the management alternatives during the upcoming public hearings for this amendment will serve to further characterize the potential costs and benefits associated with the various alternatives.

Table ES-2 is provided below in order to list all of the management alternatives and qualitatively summarize the anticipated impacts of each of the management alternatives.

A cumulative effects assessment (CEA) was conducted for this document. The information from that assessment is provided in section 8.0. Table ES-3 contains a qualitative summary of the cumulative effects from that assessment.

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Table ES-2. Management alternatives under consideration in Amendment 1 and overall qualitative summary of expected impacts on the "valued ecosystem components" (VECs). A minus sign signifies an expected negative impact, a plus sign signifies a positive impact, a zero is used for null impact, and (?) indicates uncertainty associated with a given impact (S=short-term, L=long-term). The Council's preferred alternatives (where applicable) are bolded.

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
IFQ Allocation (Alternatives 1A through 1F)	Alternative 1A: No Action (Maintain status quo management system for tilefish)	No Impact. However, potential future problems with discard and waste for sectors experiencing early closures (-?)	No Impact - would not increase or decrease mortality	No Impact - not expected to change fishing effort using bottom longline/hook-and-line gear thus direct impacts to habitat are expected to be null	No Impact - not expected to change fishing effort, thus no additional or fewer protected species interactions are expected	Maintain short-term employment opportunities (+); Maintain high capital investment (-)/Maintain overcapitalization (-); Maintain vessel production costs (-); Maintain low ex-vessel prices (part-time category) (-); Continue derby fishing practices (part-time category) (-); Short fishing season (part-time category) (-); Maintain fluctuating market supply (part-time category) (-)
	Alternative Set 1B: Alternatives 1B1 to 1B4 (see Table ES-1 for description of alternatives)	No Impact. However may promote conservation ethic (+)	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Less overcapitalization (L +; the more recent the landings history used for allocation purposes, the greater the reduction in overcapitalization); Potential employment losses (L -); Windfall for some individuals (+); Increase efficiency (L +); Lower vessel production costs (L+?); Employment losses (L -); Litigation over initial share allocation (-?); Improve safety (+?); High ex-vessel prices (+?); If equal allocation among participants is used, less successful harvesters rewarded (-)

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
IFQ Allocation (Alternatives 1A through 1F)	Alternative Set 1C: Alternatives 1C1 to 1C4 (see Table ES-1 for description of alternatives)	No Impact. However, may promote conservation ethic (+); Fewer quota overruns (+)	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Less overcapitalization (L +; the more recent the landings history used for allocation purposes, the greater the reduction in overcapitalization); Potential employment losses (L -); Windfall for some individuals (+); Increase efficiency (L +); Lower vessel production costs (L+?); Employment losses (L -); Litigation over initial share allocation (- ?); Improve safety (+); High ex-vessel prices (+)
	Alternative Set 1D: Alternatives 1D1 to 1D4 (see Table ES-1 for description of alternatives)	Potential reduction of discards and waste for sectors experiencing early closures (+); may promote conservation ethic (+); Fewer quota overruns (+)	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Less overcapitalization (L +; the more recent the landings history used for allocation purposes, the greater the reduction in overcapitalization). Overcapitalization may be the lowest as the number of permit categories in the IFQ system increases; Potential employment losses (L -); Windfall for some individuals (+); Increase efficiency (L +); Lower vessel production costs (L+?); Employment losses (L -); Litigation over initial share allocation (- ?); Improve safety (+); High ex-vessel prices (+)

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
IFQ Allocation (Alternatives 1A through 1F)	**Alternative 1E (see Table ES-1 for description of alternative)**	Potential reduction of discards and waste for sectors experiencing early closures (+); may promote conservation ethic (+); Fewer quota overruns (+)	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	More flexible allocation process as different landings histories can be use to allocate IFQ for each permit category (+); Less overcapitalization (L+; the more recent the landings history used for allocation purposes, the greater the reduction in overcapitalization). Overcapitalization may be the lowest as the number of permit categories in the IFQ system increases; Potential employment losses (L-); Windfall for some individuals (+); Increase efficiency (L+); Lower vessel production costs (L+?); Employment losses (L-); Litigation over initial share allocation (-?); Improve safety (+); High ex-vessel prices (+)
	Alternative 1F: Considered but rejected for further analysis - Do not restrict initial eligibility for the IFQ ownership	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 1F in the document beyond justification for rejection in section 5.1.F.				

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Permanent IFQ Transferability of Ownership (Alternatives 2A through 2E)	Alternative 2A: No Action (IFQ shares would not be transferable)	No Impact - would not change overall landings	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Buying or selling of quotas is prohibited (-); New entrants not allow (-); Cannot expand or contract fishing operations (-); Lower rents (-)
	Alternative 2B: IFQ shares may be transferable among any interested party	No Impact. However, potential positive impacts if shares not used for fishing as stock would rebuilt more rapidly (+?); In addition, possible potential for regulatory discards if less efficient fishermen participate (-?)	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Buying or selling of quotas is allowed (+); New entrants are allowed (+); Can expand or contract fishing operations (+); Higher rents (+)
	Alternative 2C: IFQ shares may only be transferred among IFQ shareholders during the first five years of the IFQ program and other individuals thereafter	**No Impact -** same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Buying or selling of quotas is allowed (+); New entrants are allowed (+); Can expand or contract fishing operations (+); Limited number of people eligible to buy shares (S-); Lower rents (S-); Lower windfall profits and sale prices in first five years (-); Maintain existing fleet characteristics for short-term (+)
	Alternative 2D: IFQ shares may only be transferred among IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Buying or selling of quotas is allowed to tilefish limited access permit holders and IFQ shareholders only (L-); New entrants are allowed but restricted to tilefish limited access permit holders (L-); More difficult to expand or contract fishing operations (L-); Limited number of people eligible to buy shares (S/L-); Lower rents (S/L-); Lower windfall profits and sale prices (-); Maintain the traditional social structure and participation (S+; L+/-?)

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Permanent IFQ Transferability of Ownership (Alternatives 2A through 2E)	Alternative 2E: IFQ shares may only be transferred among IFQ shareholders, other vessels maintaining a valid limited access commercial tilefish permit, or established tilefish fishermen (i.e., captains, mates, and deckhands)	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Buying or selling of quotas is allowed to tilefish limited access permit holders, IFQ shareholders, or establish tilefish fishermen only (L-); New entrants are allowed but restricted to tilefish limited access permit holders and established tilefish fishermen (L-); More difficult to expand or contract fishing operations (L-); Limited number of people eligible to buy shares (S/L-); Lower rents (S/L-); Difficulty in determining what constitutes an established fisherman (-); Maintain the traditional social structure and participation (S+; L+/-?)
IFQ Leasing (Alternatives 3A through 3E)	Alternative 3A: No Action (Annual IFQ allocations would not be leased)	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Leasing quotas is prohibited (-); New entrants not allow (-); Cannot expand or contract fishing operations (-); Lower rents (S-)
	Alternative 3B: Annual IFQ allocations may be leased among any interested party	No Impact. However, potential positive impacts if leased shares not used as stock would rebuilt more rapidly (+?); In addition, possible potential for regulatory discards if less efficient fishermen participate (-?)	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Leasing of quotas is allowed (+); New entrants are allowed (+); Can expand or contract fishing operations (+); Higher rents (+)

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
IFQ Leasing (Alternatives 3A through 3E)	Alternative 3C: Only tilefish IFQ shareholders would be permitted to lease annual IFQ allocations during the first five years of the IFQ program and other individuals thereafter	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Only IFQ shareholders can lease (-); New entrants are not allowed (-); Harder to expand or contract fishing operations (-); Limited number of people eligible to lease shares (-); Lower rents (-); Lower lease prices (-); Maintain the traditional social structure and participation (S+; L+/-?)
	Alternative 3D: Only tilefish IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit would be permitted to lease annual IFQ allocations	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Leasing is allowed to tilefish limited access permit holders and IFQ shareholders only (L-); New entrants are allowed but restricted to tilefish limited access permit holders (L-); More difficult to expand or contract fishing operations (L-); Limited number of people eligible to lease shares (S/L-); Lower rents (S/L-); Lower lease prices (-); Maintain the traditional social structure and participation (S+; L+/-?)

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
IFQ Leasing (Alternatives 3A through 3E)	Alternative 3E: Only tilefish permit holders (IFQ shareholders or limited access permit holders) or established tilefish fishermen (i.e., captain, mates, and deckhands) would be permitted to lease annual IFQ allocations	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Leasing of IFQ quotas is allowed to tilefish limited access permit holders, IFQ shareholders, or establish tilefish fishermen only (L-); New entrants are allowed but restricted to tilefish limited access permit holders and established tilefish fishermen (L-); More difficult to expand or contract fishing operations (L-); Limited number of people eligible to lease shares (S/L-); Lower rents (S/L-); Difficulty in determining what constitutes an established fisherman (-); Maintain the traditional social structure and participation (S+; L+/-?)
IFQ Share Accumulation (Alternatives 4A through 4F)	Alternative 4A: No Action (IFQ share accumulation would not be limited)	No Impact- same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Concentration of market power (-); Increase efficiency (+); Worse working conditions (-?); Reduce crew wages (-?); Reduce small scale operations (-?);
	Alternative 4B: Limit IFQ share accumulation to 49 percent of the TAL	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Allows for share accumulation larger than yearly landings by any individual tilefish vessel for the 1988 through 1998 period (+/-?); Concentration of market power (-?); Increase efficiency (+); Worse working conditions (-?); Reduce crew wages (-?); Reduce small scale operations (-?);

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
IFQ Share Accumulation (Alternatives 4A through 4F)	Alternative 4C: Limit IFQ share accumulation to 37 percent of the TAL	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Allows for share accumulation equal to the largest yearly landings by an individual tilefish vessel for the 1988 through 1998 period (+/-?); Concentration of market power (-?); Increase efficiency (+); Worse working conditions (-?); Reduce crew wages (-?); Reduce small scale operations (-?);
	Alternative 4D: Limit IFQ share accumulation to 25 percent of the TAL	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Concentration of market power decreases as cap size decreases (+); Better working conditions (+?); Maintain or increase crew wages (+?); Allow for small scale operators (+)
	Alternative 4E: Limit IFQ share accumulation to 16.5 percent of the TAL	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Concentration of market power decreases as cap size decreases (+); Better working conditions (+?); Maintain or increase crew wages (+?); Allow for small scale operators (+)
	Alternative 4F: Considered but rejected for further analysis - Limit IFQ share accumulation to 66, 15, and 19 percent of the TAL for full-time tier 1, full-time tier 2, and part-time IFQ permit holders, respectively	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 4F in the document beyond justification for rejection in section 5.4.F				

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Commercial Trip Limit (Alternatives 5A through 5B)	**Alternative 5A: No Action (Maintain status quo management regarding trip limits)**	No Impact - same as 2A	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	No Impact
	Alternative 5B: If an IFQ system is not implemented for the part-time permit category, then a 15,000 pounds tilefish trip limit would be implemented for that permit category	No Impact. However, it is possible that the implementation of trip limits may hinder the ability to measure relative population abundance through commercial catch per unit effort. Thus, impacting stock assessment results	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	Slight increase in fishing season (+?)

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Fees and Cost Recovery (Alternatives 6A through 6C)	Alternative 6A: No Action (Fees and cost recovery would not be collected if an IFQ program is implemented)	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	NMFS pays all administrative costs of the IFQ program; Violation of the MSFCMA
	Alternative 6B: IFQ shareholder directly pays	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	IFQ shareholders pay for cost recovery (-); Increased administrative cost to shareholders (-); Reduce producer surplus (-); Proportion of the fees and recovered costs (up to 25%) go into fund to facilitate the participation of future entrants (+)
	Alternative 6C: IFQ shareholder pays via a federally permitted dealer	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	IFQ shareholders pay for cost recovery (-); Dealer collects fess (-); Increased administrative cost to shareholders (-); Increased administrative cost to dealers (-); Reduce producer surplus (-); Proportion of the fees and recovered costs (up to 25%) go into fund to facilitate the participation of future entrants (+)

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
IFQ Review Process (Alternatives 7A through 7C)	Alternative 7A: No Action (Review of the IFQ program during a specific timeframe period would not be implemented)	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	Violation of the MSFCMA; Does not allow for the flexibility to review program and modify if needed (-);
	Alternative 7B: Allow for a formal and detailed review of the IFQ program five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years)	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	Allows for the flexibility to review program and modify if needed (+); Increase management costs due to review process (-)
	Alternative 7C: Considered but rejected for further analysis - Develop a system for review of the IFQ program such as fixed-term, cascading entitlements	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 7C in the document beyond justification for rejection in section 5.7.C.				

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
IFQ Reporting Requirements (Alternatives 8A through 8B)	8A: No Action (Maintain status quo reporting requirements)	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact
	8B: Facilitation of an IFQ system administration if an IFQ program is implemented	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact. However, increase landings accountability for quota monitoring purposes
IVR Reporting Requirements (Alternatives 9A through 9B)	Alternative 9A: No Action (Maintain the status quo reporting of tilefish landings under the current IVR system)	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative
	Alternative 9B: The owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 48 hours after offloading fish	No Impact. However, indirect positive impacts are expected as more accurate and timely landings are expected	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact. However, indirect positive impacts are expected as fishermen would be able to more accurately report landings in a timely manner
Commercial Vessel Logbook Reports (Alternatives 10A through 10C)	Alternative 10A: No Action (Maintain the status quo reporting of tilefish landings under the current logbook record keeping system)	This alternative is no longer relevant as two alternatives to the current system were considered but rejected for further analysis (see 10B and 10C below).				

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Commercial Vessel Logbook Reports (Alternatives 10A through 10C)	Alternative 10B: Considered but rejected for further analysis - Exempt longline tilefish vessels from current logbook record keeping requirements (VTR) and implement a specific logbook system for those longline vessels	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 10B in the document beyond justification for rejection in section 5.10.B.				
	Alternative 10C: Considered but rejected for further analysis - Implement an electronic reporting system for commercial landings	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 10C in the document beyond justification for rejection in section 5.10.C.				
Hook Size Restrictions (Alternative 11A)	Alternative 11A: Considered but rejected for further analysis - Implement minimum hook size restriction in the commercial fishery	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 11A in the document beyond justification for rejection in section 5.11.A.				
Recreational Party/Charter Permits and Reporting Requirements (Alternatives 12A through 12B)	Alternative 12A: No Action (Maintain the status quo permit and reporting requirements for party/charter vessels and operators)	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative
	Alternative 12B: Establish a party/charter tilefish vessel permit and party/charter vessel reporting requirements	No Impact. However, indirect positive impacts are expected as the alternative allows for the collection of better data for this sector of the fishery	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact as it is expected that all the party/charter vessels that have recently participated in the fishery already hold permits for other fisheries, and as such, no additional licensing or reporting costs are expected (+)

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Recreational Bag-Size Limits (Alternatives 13A through 13F)	Alternative 13A: No Action (Maintain status quo recreational bag-size limits)	No Impact - would not change overall landings	No Impact - would not increase or decrease mortality	No Impact - not expected to change fishing effort using bottom longline/hook -and-line gear thus direct impacts to habitat are expected to be null	No Impact - not expected to change fishing effort, thus no additional or fewer protected species interactions are expected	No Impact - not expected to change demand for fishing trips
	Alternative 13B: Establish an 8-fish recreational bag-size limit per person per trip	No Impact. However, indirect positive impacts if recreational landings were to substantially increase	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A
	Alternative 13C: Establish a 4-fish recreational bag-size limit per person per trip	No Impact. However, indirect positive impacts if recreational landings were to substantially increase	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A
	Alternative 13D: Establish a 2-fish recreational bag-size limit per person per trip	No Impact. However, indirect positive impacts if recreational landings were to substantially increase	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A
	Alternative 13E: Establish a 1-fish recreational bag-size limit per person per trip	No Impact. However, indirect positive impacts if recreational landings were to substantially increase	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A
	Alternative 13F: Establish a tilefish recreational bag-size limit of 1-fish per person per trip if future recreational landings go up to 4-percent of the total TAL	No Impact. However, indirect positive impacts if recreational landings were to substantially increase	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A	No Impact - same as 13A

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Improve Monitoring of Golden Tilefish Landings Caught in the Mid-Atlantic Region (Alternatives 14A through 14B)	Alternative 14A: No Action (Maintain the status quo management regarding the catch and reporting of tilefish)	No Impact. However, indirect negative impacts as not all tilefish landings may be accurately reported	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	No Impact
	Alternative 14B: Implement measures that would allow for golden tilefish caught in the management unit to be landed in the management unit only	Positive impacts as landings are expected to be more accurately reported	No Impact - same as 1A	No Impact - same as 1A	No Impact - same as 1A	No Impact
Framework Adjustment Process (Alternatives 15A through 15B)	Alternative 15A: No Action (Maintain the status quo measures that can be added or modified via the framework adjustment process)	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative
	Alternative 15B: Expand the list of management measures identified to be added or modified via the framework adjustment process to include recreational measures and measures that facilitate the periodic review of the IFQ program	No Impact. However, indirect positive impacts may occur as additional tools are in place for management purposes	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact. However, indirect positive impacts may occur as managers have flexibility to address potential changes in the fishery in a timely manner

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
EFH Designation (Alternatives 16A through 16C)	Alternative 16A: No Action (Maintain status quo EFH designation)	Neutral	Neutral	Neutral	Neutral	Neutral
	Alternative 16B: Modify current EFH designation	Neutral, but potentially positive if habitat management measures in smaller EFH area more effectively reduce habitat impacts and increase resource productivity	Neutral	Neutral, but potentially positive if smaller EFH area leads to more effective management to reduce habitat impacts of fishing	Neutral	Positive as human activities may not be unnecessarily constrained in areas not "essential" as tilefish habitat; reduced limitations on activities in these areas
	Alternative 16C: Considered but rejected for further analysis - GIS analysis of substrate and temperature	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 16C in the document beyond justification for rejection in section 5.16.C				
HAPC Designation (Alternatives 17A through 17D)	Alternative 17A: No Action (maintain the status quo outer continental shelf/slope HAPC designation)	Neutral	Neutral	Neutral	Neutral	Neutral
	Alternative 17B: Modified status quo outer continental shelf/slope HAPC	Neutral, but potentially positive if actions are taken that reduce EFH impacts within smaller HAPC that more effectively increase resource productivity	Neutral	Neutral, but potentially positive if management actions are taken to protect EFH inside a smaller HAPC that are more effective	Neutral	Neutral, but potentially positive as human activities may not be unnecessarily constrained in areas not considered HAPC; reduced limitations on activities in these areas

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
HAPC Designation (Alternatives 17A through 17D)	**Alternative 17C: HAPC within four canyons (with known clay outcrop/pueblo habitat)**	Neutral, but potentially positive impacts if habitat management actions are taken to protect most vulnerable tilefish habitat in these canyons and they increase resource productivity	Neutral	Neutral to potentially positive impacts if these areas are managed to protect vulnerable habitat areas and their ecological function	Neutral	Neutral, but potentially positive as human activities may not be unnecessarily constrained in areas not considered HAPC; reduced limitations on activities in these areas
	Alternative 17D: HAPC within thirteen canyons known or suspected to have clay outcrop/pueblo habitat	Neutral, but potentially positive impacts if habitat management actions are taken to protect most vulnerable tilefish habitat in these canyons and they increase resource productivity	Neutral	Neutral to potentially positive impacts if these areas are managed to protect vulnerable habitat areas and their ecological function	Neutral	Neutral, but potentially positive as human activities may not be unnecessarily constrained in areas not considered HAPC; reduced limitations on activities in these areas

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Measures to Reduce Gear Impact on EFH (Alternatives 18A through 18D)	Alternative 18A: No Action (No GRA)	Neutral, but potentially negative if opportunity to increase resource productivity is lost because all tilefish EFH area remains open to bottom trawling	Neutral	Negative impacts since it affords no protection for vulnerable tilefish habitat from adverse impacts of current or future bottom trawling	Neutral	Neutral (S); Neutral to potentially negative (L); potential for long-term negative impacts on tilefish productivity and associated fishery yields, particularly if fishing intensity or distribution shifts into new areas (canyons) with vulnerable tilefish EFH
	Alternative 18B: HAPC GRA on the outer continental shelf/slope	Neutral impacts because fishing for tilefish with longlines will continue inside the GRA, so no increase in resource productivity is expected	Neutral; reduced harvest of non- target species in GRA, but large potential for effort displacement	Neutral to potentially positive if there are clay outcrop habitats in the HAPC (not known); indirect positive impacts for EFH of other managed species in GRA	Neutral; fewer encounters with protected species in GRA, but large potential for effort displacement	Negative (S); Potentially positive (L); short-term reduction in fishery yields because bottom trawling activity will be prohibited in large area, but partially compensated by effort displacement; potential long-term positive impacts on resource productivity and associated fishery yields for many species
	Alternative 18C: GRAs within canyons	Neutral to potentially positive impacts if protection of vulnerable tilefish EFH in closed areas increases resource productivity	Neutral; no expected change in catch of non-target species	Positive impacts; more effective protection of highly vulnerable tilefish EFH and indirect benefits for other managed species and highly sensitive benthic organisms (e.g., corals) within canyon areas	Neutral; may result in fewer encounters with protected species in GRAs, but more in open areas due to shifts in effort	Neutral to potentially negative (S); Potentially positive (L); short-term potential for some reduction in fishery yields, but high potential for effort displacement; potential long-term positive impacts on resource productivity and associated fishery yields by protecting tilefish EFH, as well as EFH for other species in canyon areas
	Alternative 18D: Considered but rejected for further analysis - EEZ GRA	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 18D in the document beyond justification for rejection in section 5.18.D				

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Royalty Collection System (Alternatives 19A through 19E)	**Alternative 19A: No Action (Collection of royalties would not be implemented for the initial, or any subsequent, distribution of allocations in the tilefish IFQ program)**	No Impact - administrative	No Impact - administrative	No Impact - administrative	No Impact - administrative	Producer surplus would not be reduced(+); Poor harvest levels or depressed prices could make royalty exceed industry revenue (-)
	Alternative 19B: A per-unit fee would be assessed on tilefish IFQ allocations if an IFQ program is put in place for the commercial tilefish fishery. IFQ shareholder directly pays	No Impact - administrative. However, If the royalty fee is set too high privilege holders might choose not to fish at all. As such, indirect potential positive impacts as stock would rebuild more rapidly (+?)	No Impact - administrative	No Impact - administrative	No Impact - administrative	Increased administrative cost to shareholders (-); Reduce producer surplus (-); If the royalty fee is set too high privilege holders might choose not to fish at all (-); No guarantee that funds collected through royalties will be appropriated for use in the fishery (-); The establishment of the fee could be perceived as arbitrary since there is little data on which to base the percentage fee of the landed harvest (-); Poor harvest levels or depressed prices could make royalty exceed industry revenue (-);

Table ES-2 (continued).

Issue/Management Measure		VECs				
		Managed Resource	**Non-target Species**	**Habitat Including EFH**	**Protected Resources**	**Human Communities**
Royalty Collection System (Alternatives 19A through 19E)	Alternative 19C: A percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder directly pays	No Impact - administrative. However, If the royalty fee is set too high privilege holders might choose not to fish at all. As such, indirect potential positive impacts as stock would rebuild more rapidly (+?)	No Impact - administrative	No Impact - administrative	No Impact - administrative	Increased administrative cost to shareholders (-); Reduce producer surplus (-); If the royalty fee is set too high privilege holders might choose not to fish at all (-); No guarantee that funds collected through royalties will be appropriated for use in the fishery (-); The establishment of the fee could be perceived as arbitrary since there is little data on which to base the percentage fee of the landed harvest (-); Poor harvest levels or depressed prices could make royalty exceed industry revenue (-);
	Alternative 19D: A Percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder pays via a federally permitted dealer	No Impact - administrative. However, If the royalty fee is set too high privilege holders might choose not to fish at all. As such, indirect potential positive impacts as stock would rebuild more rapidly (+?)	No Impact - administrative	No Impact - administrative	No Impact - administrative	Reduce producer surplus (-); If the royalty fee is set too high privilege holders might choose not to fish at all (-); No guarantee that funds collected through royalties will be appropriated for use in the fishery (-); Although the collection of rent is a separate source of federal revenue, this system mirrors the cost recovery methodology and could thus prove confusing to the industry, and may be overly burdensome if paid along with the cost recovery fees at the time of landing (-); The establishment of the fee could be perceived as arbitrary since there is little data on which to base the percentage fee of the landed harvest (-); Potentially high administrative cost (-); Poor harvest levels or depressed prices could make royalty exceed industry revenue (-); Increased administrative cost to dealers (-);
	Alternative 19E: Considered but rejected for further analysis - Implement an auction system for the collection of royalties if an IFQ program is put in place for the commercial tilefish fishery	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 19E in the document beyond justification for rejection in section 5.19.E				

Table ES-3. Summary comparison of cumulative effects for Amendment 1 alternatives. (See section 5.0 for a complete description of each alternative.)

Valued Ecosystem Components (VEC)		Managed Resources	Non-Target Species	Habitat	Protected Species	Human Communities
Baseline Effects without Amendment 1 (includes effects of past, present and reasonably foreseeable future actions)		**Positive in short-term term-** stock is not overfished, overfishing is not occurring **Positive in long-term-** sustainable stock size	**Positive in long-term-** improved bycatch accounting, improved habitat quality	**Positive-** reduced habitat disturbance by fishing gear (NEFMC EFH Omnibus Amend 2) and non-fishing actions	**Neutral to Positive-** reduced gear encounters through Sea Turtle Strategy; improved habitat quality	**Short-term negative-** lower revenues would continue until stock is fully rebuilt **Long-term positive-** sustainable resources should support viable communities and economies
Alt #	**Management Measure/Alternative**	**Relative Incremental Effect Contribution of Amendment 1 Alternatives to Overall Cumulative Effect of Baseline**				
IFQ Allocation (Alternatives 1A through 1F)						
1A	No Action (Maintain status quo management system for tilefish)	0/--	0	0	0	0/--
Set 1B (1B1 to 1B4)	Full-time tier 1 permit holders only. (Avg. landings 1988-1998; Avg. landings for 2001-2005; Avg. landings best five years from 1997-2005; and/or equal allocation)	0/<+	0	0	0	<+
Set 1C (1C1 to 1C4)	Full-time tier 1 & 2 permit holders only. (Avg. landings 1988-1998; Avg. landings for 2001-2005; Avg. landings best five years from 1997-2005; and/or equal allocation)	0/<+	0	0	0	+

Table ES-3 (continued).

Set 1D (1D1 to 1D4)	Full-time tier 1 & 2 and part-time permit holders only. (Avg. landings 1988-1998; Avg. landings for 2001-2005; Avg. landings best five years from 1997-2005; and/or equal allocation)	0/<+	0	0	0	+
1E*	**Full-time tier 1, full-time tier 2, and/or part-time permit holders. Avg. landings for years 1988-1998, 2001-2005, or best five years from 1997-2005. Allocations based on %s associated with landings and/or equal division among all qualifying vessels**	0/<+	0	0	0	+
1F	Considered but Rejected - Do not restrict initial eligibility for the IFQ ownership	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 1F in the document beyond justification for rejection in section 5.1.F.				
Permanent IFQ Transferability of Ownership						
2A	No Action (IFQ shares would not be transferable)	0	0	0	0	--
2B*	**IFQ shares may be transferable among any interested party**	0/+	0	0	0	+
2C	IFQ shares may only be transferred among IFQ shareholders during the first five years of the IFQ program and other individuals thereafter	0	0	0	0	--(S)/+(L)
2D	IFQ shares may only be transferred among IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit	0	0	0	0	--
2E	IFQ shares may only be transferred among IFQ shareholders/other vessels with a valid limited access commercial tilefish permit/established tilefish fishermen	0	0	0	0	--

Table ES-3 (continued).

IFQ Leasing						
3A	No Action (Annual IFQ allocations would not be leased)	0	0	0	0	--
3B*	**Annual IFQ allocations may be leased among any interested party**	0/+	0	0	0	+
3C	Only tilefish IFQ shareholders would be permitted to lease annual IFQ allocations during the first five years of the IFQ program and other individuals thereafter	0	0	0	0	+
3D	Only tilefish IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit would be permitted to lease annual IFQ allocations	0	0	0	0	<--
3E	Only tilefish permit holders (IFQ shareholders or limited access permit holders)/established tilefish fishermen would be permitted to lease annual IFQ allocations	0	0	0	0	<--
IFQ Share Accumulation						
4A	No Action (IFQ share accumulation would not be limited)	0	0	0	0	<--/<+
4B*	**Limit IFQ share accumulation to 49 percent of the TAL**	0	0	0	0	<--/<+
4C	Limit IFQ share accumulation to 37 percent of the TAL	0	0	0	0	<--/<+
4D	Limit IFQ share accumulation to 25 percent of the TAL	0	0	0	0	<--/<+
4E	Limit IFQ share accumulation to 16.5 percent of the TAL	0	0	0	0	<--/<+

Table ES-3 (continued).

4F	Considered but rejected for further analysis - Limit IFQ share accumulation to 66/15/19 percent of the TAL for full-time tier 1/full-time tier 2/part-time IFQ permit holders, respectively	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 4F in the document beyond justification for rejection in section 5.4.F				
Commercial Trip Limit						
5A*	**No Action (Maintain status quo management regarding trip limits)**	0	0	0	0	0
5B	If an IFQ system is not implemented for the part-time permit category, then a 15,000 pounds tilefish trip limit would be implemented for that permit category	0/<--	0	0	0	0/<+
Fees and Cost Recovery						
6A	No Action (Fees and cost recovery would not be collected if an IFQ program is implemented)	0	0	0	0	0
6B*	**IFQ shareholder directly pays**	0	0	0	0	--
6C	IFQ shareholder pays via a federally permitted dealer	0	0	0	0	--
IFQ Review Process						
7A	No Action (Review of the IFQ program during a specific timeframe period would not be implemented)	0	0	0	0	--
7B*	**Allow for a formal and detailed review of the IFQ program**	0	0	0	0	+
7C	Considered but rejected for further analysis - Develop a system for review of the IFQ program such as fixed-term, cascading entitlements	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 7C in the document beyond justification for rejection in section 5.7.C.				
IFQ Reporting Requirements						
8A	No Action (Maintain status quo reporting requirements)	0	0	0	0	0

Table ES-3 (continued).

8B*	**Facilitation of an IFQ system administration if an IFQ program is implemented**	0	0	0	0	0/+
IVR Reporting Requirements						
9A	No Action (Maintain the status quo reporting of tilefish landings under the current IVR system)	0	0	0	0	0
9B*	**IVR reporting must be made 48 hours after offloading fish**	0/<+	0	0	0	0/<+
Commercial Vessel Logbook Reports						
10A	No Action (Maintain the status quo reporting of tilefish landings under the current logbook record keeping system)	This alternative is no longer relevant as two alternatives to the current system were considered but rejected for further analysis (see 10B and 10C below).				
10B	Considered but rejected for further analysis - Exempt longline tilefish vessels from current logbook record keeping requirements (VTR) and implement a specific logbook system for those longline vessels	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 10B in the document beyond justification for rejection in section 5.10.B.				
10C	Considered but rejected for further analysis - Implement an electronic reporting system for commercial landings	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 10C in the document beyond justification for rejection in section 5.10.C.				
Hook Size Restrictions						
11A	Considered but rejected for further analysis - Implement minimum hook size restriction in the commercial fishery	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 11A in the document beyond justification for rejection in section 5.11.A.				
Recreational Party/Charter Permits and Reporting Requirements						
12A	No Action (Maintain the status quo permit and reporting requirements for party/charter vessels and operators)	0	0	0	0	0
12B*	**Establish a P/C tilefish vessel permit and P/C vessel reporting requirements**	0/<+	0	0	0	0

Table ES-3 (continued).						
Recreational Bag-Size Limit						
13A	No Action (Maintain status quo recreational bag-size limits)	0	0	0	0	0
13B*	**Establish an 8-fish recreational bag-size limit per person per trip**	0/<+	0	0	0	0
13C	Establish a 4-fish recreational bag-size limit per person per trip	0/<+	0	0	0	0
13D	Establish a 2-fish recreational bag-size limit per person per trip	0/<+	0	0	0	0
13E	Establish a 1-fish recreational bag-size limit per person per trip	0/<+	0	0	0	0
13F	Establish a tilefish recreational bag-size limit of 1-fish per person per trip if future recreational landings go up to 4-percent of the total TAL	0/<+	0	0	0	0
Improve Monitoring of Golden Tilefish Landings Caught in the Mid-Atlantic Region						
14A	No Action (Maintain the status quo management regarding the catch and reporting of tilefish)	0/--	0	0	0	0
14B*	**Implement measures that would allow for golden tilefish caught in the management unit to be landed in the management unit only**	+	0	0	0	0/+
Framework Adjustment Process						
15A	No Action (Maintain the status quo measures that can be added or modified via the framework adjustment process)	0	0	0	0	0
15B*	**Expand the list of management measures identified to be added or modified via the framework adjustment process to include recreational measures and measures that facilitate the periodic review of the IFQ program**	0/<+	0	0	0	0/<+

Table ES-3 (continued).

EFH Designation						
16A	No Action (Maintain status quo EFH designation)	0	0	0	0	0
16B*	**Modify current EFH designation**	0/+	0	0/+	0	+
16C	Considered but rejected for further analysis - GIS analysis of substrate and temperature	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 16C in the document beyond justification for rejection in section 5.16.C				
HAPC Designation						
17A	No Action (Maintain the status quo HAPC designation)	0	0	0	0	0
17B	Designate HAPC as statistical areas with modified depth	0/+	0	0/+	0	0/+
17C*	**Designate HAPC as four canyons**	0/+	0	0/+	0	0/+
17D	Designate HAPC as thirteen canyons	0/+	0	0/+	0	0/+
Measures to Reduce Gear Impact on EFH						
18A	No Action (No GRAs)	0/--	0	--	0	0(S)/--(L)
18B	GRAs within statistical areas 616 and 537	0	0	0/+	0	--(S)/+(L)
18C	GRAs within canyons	0/+	0	+	0	0/--(S); +(L)
18D	Considered but rejected for further analysis - EEZ GRA	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 18D in the document beyond justification for rejection in section 5.18.D				
Royalty Collection System						
19A*	**No Action (Collection of royalties would not be implemented for the initial, or any subsequent, distribution of allocations in the tilefish IFQ program)**	0	0	0	0	0/+

Table ES-3 (continued).

19B	A per-unit fee would be assessed on tilefish IFQ allocations if an IFQ program is put in place for the commercial tilefish fishery. IFQ shareholder directly pays	0/<+	0	0	0	--
19C	A percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder directly pays	0/<+	0	0	0	--
19D	A Percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder pays via a federally permitted dealer	0/<+	0	0	0	--
19E	Considered but rejected for further analysis - Implement an auction system for the collection of royalties if an IFQ program is put in place for the commercial tilefish fishery	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 19E in the document beyond justification for rejection in section 5.19.E				

Bolded * = Preferred Alternative
0 = No Cumulative Impact
+ = Positive Cumulative Impact
>+ = High Positive; < + = low positive
-- = Negative Cumulative Impact
> -- = High Negative; < -- = low negative
S=Short-term
L=Long-term
Low (as in *low* positive or *low* negative): to a lesser degree
High (as in *high* positive or *high* negative): to a greater degree
Potentially: some degree of uncertainty associated with the impact

Impact Definitions:
Managed Species, Non-Target species, Protected Species:
Positive: actions that increase stock/population size
Negative: actions that decrease stock/population size
Habitat:
Positive: actions that improve the quality or reduce disturbance of habitat
Negative: actions that degrade the quality or increase disturbance of habitat
Human Communities:
Positive: actions that increase revenue and well being of fishermen and/or associated businesses
Negative: actions that decrease revenue and well being of fishermen and/or associated businesses

2.0 LIST OF ACRONYMS

APA	Administrative Procedures Act
ASMFC	Atlantic States Marine Fisheries Commission or Commission
B	Biomass
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CPUE	Catch Per Unit Effort
CZMA	Coastal Zone Management Act
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FR	Federal Register
FMP	Fishery Management Plan
GRA	Gear Restricted Area
GMFMC	Gulf of Mexico Fishery Management Council
HAPC	Habitat Area of Particular Concern
HPTRP	Harbor Porpoise Take Reduction Plan
IFQ	Individual Fishing Quota
IQA	Information Quality Act
IRFA	Initial Regulatory Flexibility Analysis
ITQ	Individual Transferable Quota
LAP	Limited Access Privileges
LTPC	Long-term Potential Catch
LWTRP	Large Whale Take Reduction Plan
M	Natural Mortality Rate
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistical Survey
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
mt	metric tons
NAO	NOAA Administrative Order
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	Optimal Yield
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
PREE	Preliminary Regulatory Economic Evaluation
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SAFMC	South Atlantic Fishery Management Council
SFSC	South Fisheries Science Center
SARC	Stock Assessment Review Committee
SAV	Submerged Aquatic Vegetation
SAW	Stock Assessment Workshop
SFA	Sustainable Fisheries Act
SMA	Small Business Administration

SIA	Social Impact Assessment
TAL	Total Allowable Landings
TL	Total Length
VECs	Valued Ecosystem Components
VMS	Vessel Monitoring System
VTR	Vessel Trip Report

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4.0 INTRODUCTION AND BACKGROUND

4.1 A Short History of the FMP Development

The golden tilefish (*Lopholatilus chamaeleonticeps*) fishery is managed under the Tilefish Fishery Management Plan (FMP) that was prepared cooperatively by the Mid-Atlantic Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS). The management unit is all golden tilefish under United States jurisdiction in the Atlantic Ocean north of the Virginia/North Carolina border.

The FMP which initiated the management for this species became effective November 1, 2001 (66 FR 49136; September 26, 2001) and included management and administrative measures to ensure effective management of the tilefish resource. The FMP established total allowable landings (TAL) as the primary control on fishing mortality. The FMP also implemented a limited entry program and a tiered commercial quota allocation of the TAL. There are three fishing categories, an incidental, a part-time, and a full-time (with two different tiers or subcategories) for division of the quota under the tilefish limited access program.[3] Under the FMP, the "target" estimate of landings for the incidental category (5 percent of the TAL) is first deducted from the overall TAL, and then the remainder of the TAL is divided among the full-time tier 1 category, which receives 66 percent; the full-time tier 2 category, which receives 15 percent; and, the part-time category, which receives 19 percent. Trip limits are currently only imposed in the incidental permit category (open access) to achieve a "target" or soft quota. Other elements of the original FMP included: a stock rebuilding strategy; permits and reporting requirements for commercial vessels, operators, and dealers; a prohibition on the use of gear other than longline gear by limited-access tilefish vessels (later amended see discussion below); and a framework adjustment process.

In October 26, 2001, the Natural Resources Defense Council (NRDC) filed a complaint with the Southern District Court of New York alleging that the lack of any restrictions on bottom tending mobile gear fishing gear (e.g., otter trawl nets) in essential fish habitat for tilefish rendered the FMP and its implementing regulations arbitrary and capricious. A Federal Court order in NRDC v. Evans (March 31, 2003) upheld the agency action because there was no scientific evidence supporting the conclusion that bottom tending mobile fishing gear is having an identifiable adverse impact on tilefish essential fish habitat. Under the regulations in existence at the time the FMP was prepared, only an "identifiable" adverse effect on essential fish habitat from a fishing practice required consideration of measures to mitigate, minimize or prevent the impacts resulting from such fishing practice. The Judge concluded that plaintiffs' reliance on marks across parts

[3] The following landings qualification criteria was used to assess entry into the limited access program: *Full-time tier 1 category*: at leas 250,000 lb/yr for any three years between 1993-1998, at least 1 pound of which was landed prior to June 15, 1993; *Full-time tier 2 category*: at least 30,000 lb/yr for any three years between 1993-1998, at least 1 pound of which was landed prior to June 15, 1993; *Part-time category*: at least 10,000 lb in any one year between 1988-1993 and at least 10,000 lb in any one year between 1994-1998 or 28,000 lb in one year between 1984-1993, at least 1 pound of which was landed prior to June 15, 1993. For a detailed description on the evolution and rationale underlying the limited access permit categories see Appendix B.

of the ocean bottom caused by the fishing gear as evidence of an adverse impact was misplaced. While such marks may reflect a physical disruption of the bottom, there is no information according to the tilefish experts to demonstrate that this disruption had any effect to reduce the quality or quantity of tilefish essential fish habitat. Consequently, such physical disruption did not fit the definition of "adverse effect" in the regulations. In light of the absence of scientific information on the effects of fishing gear on tilefish essential fish habitat, the Judge found that the agency's analysis of the environmental impacts in the EIS was reasonable and a good faith presentation of the best information available under the circumstances.

A Federal Court Order in Hadaja v. Evans (May 15, 2003) set aside the permit requirements on the grounds that the FMP violated National Standard 2 of the MSFCMA because it was not based on the best scientific information available. This decision vacated the regulations that implemented sub-quotas for the various limited access categories out of order. In addition, the Federal Court Order in Hadaja v. Evans also set aside the restriction on the use of all gear other than longline gear for limited access tilefish vessels due to the lack of scientific information to support this ban. The Federal Court Order in Hadaja v. Evans held that "the Secretary must adopt a plan that is based on the best scientific information available, which may be the existing plan, but only if the evidence in the administrative record (record) clearly supports it" (69 CFR 22454; April 26, 2004).

After the MAFMC submitted additional detailed information that supported the limited access condition established under the FMP, the NMFS reinstated the permit requirements for commercial tilefish vessels on May 31, 2004. More specifically, in doing so, the NMFS reinstated the vessel permit requirements; the vessel reporting requirements; the observer coverage regulations; and the incidental catch limit. In addition to reinstating the permit requirements, NMFS also removed the prohibition of the use of all gear other than longline gear for limited access vessels, which had previously been struck down by the Federal Court Order in Hadaja v. Evans. NMFS removed this prohibition due to the fact that scientific information to support reinstating the ban on the use of all gear other than longline gear in the directed tilefish fishery was lacking (69 CFR 22454; April 26, 2004).

4.2 Purpose and Need for Action

The need for this amendment is to address issues and problems that have been identified since the FMP was first implemented. The purpose of this amendment is to achieve the management objectives of the FMP as outlined in section 4.3 below, as well as to evaluate and consider the implementation of an individual fishing quota (IFQ) program, new reporting requirements, gear modifications, recreational fishing issues, and review the EFH components of the FMP. The need and purpose of this Amendment are summarized in table format in Box 4.2 at the end of this section. The full range of management issues addressed in this amendment to better achieve the existing FMP management objectives, are described under the headings below.

Establish an IFQ program

As indicated in section 4.1, the FMP implemented a limited entry program and a tiered commercial quota allocation of the TAL. The original FMP does not address how the quota is to be distributed among vessels within each of the three fishing categories. However, individuals in the full-time tier 1 category have developed a system to further allocate the overall tier 1 allocation to vessels within that category. That is, the tier 1 participants determine among themselves how to control their fishing effort as a means to improve the viability of the fishery and secure their livelihoods. According to stakeholders, this "cooperative understanding"[4] has allowed full-time tier 1 participants to spread landings throughout the year to maximize their performance. More specifically, under this "cooperative understanding," tier 1 participants decide at the vessel level when to fish, how much to fish, and when to land the fish harvested in order to maximize ex-vessel price (by avoiding market gluts and spreading landings throughout the year). Full-time tier 1 stakeholders would like to explore the possibility of implementing an IFQ[5] program that would further stabilize the fishery and formalize their cooperative agreement. According to stakeholders, individuals participating in the full-time tier 2 and part-time categories have not implemented a "cooperative understanding" such as the one developed by full-time tier 1 participants. In fact, the full-time tier 2 category closed early in 2005 and 2006 and the part-time category had early closures in 2002, 2004, 2005, and 2006. It is possible that implementing and IFQ program for tier 2 and part-time categories could improve management of the fishery (i.e., avoid early closures and maximize performance and avoid discard and waste). For example it is possible that when tilefish closures are first implemented, vessels that are out at sea may be forced to discard caught fish as they would not be allowed to land it due to closures.

This action is being considered as a means to promote flexibility for the fishermen in their fishing operations. More specifically, the implementation of an IFQ program would allow for the distribution of the overall TAL among the full-time and part-time vessel categories currently permitted to participate in the fishery and thus allow participants to better plan fishing activities. In addition, the harvesting capacity of the tilefish fishery is greater than needed to harvest the commercial quota in an economically efficient manner and the implementation of an IFQ program could potentially reduce this harvesting capacity. Some specific aspects of the IFQ program to be evaluated are: 1) IFQ transferability of ownership; 2) IFQ[6] leasing; 3) IFQ share accumulation; 4) fees and cost recovery; 5) IFQ reporting requirements; 6) flexibility to revising/adjusting the IFQ program; and 7) methods for collecting royalties under a Tilefish IFQ system.

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[4] For a detailed description regarding the evolution of collaborative management in the tilefish fishery see: Andrew Kitts et al, The evolution of collaborative management in the Northeast USA tilefish fishery. Marine Policy 2007; 31:192-200 (see Appendix C).

[5] The MAFCMA defines an IFQ as "a Federal permit under a limited access system to harvest a quantity of fish, expressed by a unit or units representing a percentage of the total allowable catch of a fishery that may be received or held for exclusive use by a person" (MSFCMA, Sec. 3[21]).

[6] An ITQ is an IFQ that is transferable.

The primary purpose of the IFQ program is to reduce overcapacity in the commercial tilefish fishery, codify existing quota sharing agreements that already exist in the full-time tier 1 permit category, and to eliminate, to the extent possible, the problems associated with derby fishing, in order to assist the Council in achieving optimum yield from the fishery, as required by the Magnuson-Stevens Act. The management measures presented in this amendment provide a range of alternatives that would allow for these objectives to be met while preserving the long-term economic viability of the fishery and maintaining the social structure and historical fishery participation.

Establish a trip limit for the part-time category

This action is being considered in the event that an IFQ system is not implemented for the part-time category. This action would establish a 15,000 pounds trip limit. According to part-time stakeholders this limit is desirable because it makes a trip profitable.

Reporting Issues

Modify IVR reporting requirements

There is a general consensus among managers and stakeholders that Amendment 1 should consider the implementation of better record keeping. More specifically, the current FMP requires that the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the Interactive Voice Response (IVR) system within 24 hours after returning to port and offloading as required by the Regional Administrator. According to industry members not all landings are reported within the 24 hour period as required by the current regulations. By granting an additional 24 hours (total of 48 hours) to call landings into the IVR system vessels will have plenty of time to receive pack-out receipts from the dealer and call into the IVR system.

Modify IVR reporting requirements to facilitate IFQ reporting

This action is being considered as a means to facilitate IFQ reporting requirements that may be needed due to the implementation of an IFQ system under this amendment. The IFQ reporting system should allow for self-audits of fishery submitted data and could be permissible through the IVR system or other appropriate electronic media.

Modify logbook record keeping system

This action is needed to address the reporting deficiencies that have been identified under the paper logbooks used to report tilefish fishing activity. Tilefish fishermen use paper logbooks to report fishing activity. Stakeholders and scientists have suggested that the paper logbooks are generic and do not allow for the collection of detailed information on a haul-by-haul basis which is needed to more accurately determine catch per unit effort in the tilefish fishery. Commercial catch per unit effort is the only index of abundance available for the tilefish stock. Spatially explicit haul based data is needed to refine and

improve the tilefish stock assessment. The more detailed haul-by-haul fishery dependent data is needed for the tilefish stock assessment since a program to collect fishery independent tilefish data does not exist. Under this action, measures to implement a tilefish longline logbook reporting system (daily reporting) in the directed tilefish fishery are considered.

Establish hook size restrictions

Industry members have reported that tier 1 vessels have increased the hook size to avoid smaller tilefish. It is believed that increases in hook size would allow the longline fishery to increase the size of tilefish landed. This action considers setting hook size restrictions as a means to avoid smaller tilefish. However, no quantifiable scientific study data are currently available to support this assertion.

Establish recreational party/charter permits and bag limits

The current FMP regulations allow for tilefish to be harvested by the recreational sector. When the FMP was first developed, the recreational participation in this fishery was very small and there was not a substantial directed recreational fishery. However, some Council members have indicated that they have seen an increase in recreational tilefish landings and would like to readdress this sector of the fishery. Currently, it is thought that much of the catch by the recreational sector is not captured through federal reporting requirements. Since the catch data for this sector is not fully known, no quota is set aside for the recreational fishing sector, nor is catch counted towards the total allowable landings for the fishery. This amendment would set a bag limit (i.e., limit the number of fish per trip that recreational anglers can retain) and recreational permit requirements (i.e., party/charter tilefish vessel permit). In addition, this amendment would require that any vessel fishing recreationally with a party/charter boat permit must have on board at least one operator who holds a permit.

The issuance of a permit is an essential ingredient in the management of fishery resources. Section 303(b)(1) of the MSFCMA specifically recognized the need for permit issuance. Almost every international, federal, state, and local fishery management authority recognizes the value of permits and uses permits as part of their management systems. The purpose and use of the party/charter permits specified above is to: register fishermen and fishing vessels; list the characteristics of fishing vessels; exercise influence over compliance (e.g. withhold issuance pending collection of unpaid penalties); provide a mailing list for the dissemination of important information to the industry; and, provide a universe for data collection purposes.

Improve monitoring of golden tilefish landings caught in the mid-Atlantic region

Tilefish stakeholders have indicated that it is possible that fishermen holding tilefish Federal permits and a snapper/grouper Federal permits could potentially fish for golden tilefish in the mid-Atlantic region and claim a portion of those landings as southern

tilefish in order to maintaining participation in the snapper/grouper fishery[7], or vice versa. In addition, it is possible that fishermen could fish for golden tilefish south of the Virginia/North Carolina border during a close season and land the fish north of the Virginia/North Carolina border. This practice results in landings not being accurately reported. To correct this potential problem management measures could be implemented that would prohibit golden tilefish caught in the northern management unit to be landed south of the Virginia/North Carolina border and prohibit combination trips in which vessels fish in both management units on the same trip.

Revise the identification and description of essential fish habitat

In 50 CFR Part 600.815 (a)(11), the regulations state that Councils and NMFS should periodically review the EFH components of FMPs, including an update of the fishing equipment assessment. This action is needed to review and, if necessary, modify the EFH designations in the FMP. Under this action the components of the FMP containing identification and descriptions of essential fish habitat and habitat areas of particular concern, estimates of gear impacts on essential fish habitat, and recommendations that describe options to avoid, minimize, or mitigate adverse effects and promote the conservation and enhancement of EFH will be reviewed and if necessary updated.

Expand the list of management measures that could be adjusted via the framework adjustment process

The FMP implemented a framework adjustment procedure that allows the Council to add or modify management measures through a streamlined public review process. However, recreational measures were not included in the original list of issues in the plan that could be implemented or adjusted at any time during the year as the recreational fishery was almost non-existent when the FMP was first developed. The implementation of this action would allow the Council to address potential changes in the tilefish recreational fishery through the framework process in a timely manner. The recreational management measures that would be added to the list are: recreational bag-size limit, fish size limit, and seasons; and recreational gear restrictions or prohibitions. This action is needed as a means to add or modify recreational measures through a framework adjustment procedure.

The reauthorized Magnuson-Stevens Act of 2006 established national guidelines for the implementation of Limited Access Privileges (LAP) programs. Section 303A(c)(G) of the Act "include provisions for the regular monitoring and review by the Council and the Secretary of the operations of the program, including determining progress in meeting the goals of the program and this Act, and any necessary modification of the program to meet those goals, with a formal and detailed review five years after the implementation of the

[7] For management purposes, the Southeast Fisheries Science Center manages the tilefish stock south of the Virginia/North Carolina border under two management plans. The Atlantic portion of the stock south of the Virginia/North Carolina border is managed by the SAFMC under the Snapper Grouper Fishery Management Plan and the Gulf of Mexico portion of the stock is managed by the GMFMC under the Reef Fish Fishery Management Plan.

program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every 7 years)". This amendment contains management measures that would facilitate the periodic review of the program to assess its progress. However, in order to facilitate any necessary modifications of the program if needed, the Council recommends adding specific IFQ measures to the list of management actions that could be implemented via the framework adjustment process. The IFQ measures that would be added to the list are: capacity reduction, safety at sea issues, transferability rules, ownership concentration caps, permit and reporting requirements, and fee and cost recovery issues. This action is needed as a means to address specific IFQ measures through a framework adjustment procedure.

Other issues

Methods for collecting royalties under a Tilefish IFQ system

Section 303A(d) of the reauthorized MSFMCA states that "In establishing a limited access privilege program, a Council shall consider, and may provide, if appropriate, an auction system or other program to collect royalties for the initial, or any subsequent, distribution of allocations in a limited access privilege program if— (1) the system or program is administered in such a way that the resulting distribution of limited access privilege shares meets the program requirements of this section; and (2) revenues generated through such a royalty program are deposited in the Limited Access System Administration Fund established by section 305(h)(5)(B) and available subject to annual appropriations."

The current MSFMCA requires Councils to consider an auction system to simultaneously allocate limited access fishing privileges and to collect royalties. The collection of royalties is different from cost recovery. The principle of cost recovery is that participants in an IFQ fishery should pay some or all of the costs directly related to management, data collection and analysis, and enforcement of the IFQ program. The principle associated with royalty collection is to transfer some of the financial gains earned from the use of the public resource to the general government coffers (NMFS 2007).

As indicated in section 4.1, the FMP implemented a limited entry program and a tiered commercial quota allocation of the TAL. However, the original FMP does not address how the quota is to be distributed among vessels within each of the three fishing categories. This amendment is being considered as a means to promote flexibility for the fishermen in their fishing operations. More specifically, the implementation of an IFQ program would allow for the distribution of the overall TAL among the full-time and part-time vessel categories currently permitted to participate in the fishery and thus allow participants to better plan fishing activities.

In principle, LAP programs reduce or eliminate open access waste and provide incentives for the efficient use of the stock, which is ultimately a public resource. Collecting royalties would allow for some of the gains to be collected so that the rewards of efficient use can be shared between the recipient of the LAP and the general public (NMFS 2007). Some people are opposed to IFQ programs because they are viewed as awarding a large

financial windfall to quota recipients. The rationale for charging a resource rent is based on the principle that the fish stock is a public resource held in trust by the government. Therefore, this principle advocates returning to the public some of the value that is rightfully theirs (NRC 1999).

The Council considered three mechanisms to collect royalties in the tilefish fishery. One method is to auction off the initial quota allocation (among the IFQ permit holders), another is assessing a per-unit fee on IFQ allocations, and a third method is to assess a percentage fee based on the landed value of harvest. These systems are discussed IN section 5.0.

Box 4.2. Amendment 1 purpose and need summary table.

NEED	CORRESPONDING PURPOSE
1. Address tilefish quota distribution within the three fishing categories	Consider the use of an IFQ program.
	Consider implementation of a trip limit for part-time category in lieu of an IFQ program
2. Improve vessel record keeping and reporting	Clarify IVR reporting requirements
	Modify the collection of information through vessel logbooks
3. Avoid landings small tilefish	Implement a minimum hook size in the directed tilefish fishery
4. Address a potential increase in recreational tilefish landings	Implement a bag limit for the recreational tilefish fishery. Implement party/charter tilefish permit requirements
5. Improve monitoring of tilefish landings	Establish measures to better monitor tilefish landings in the mid-Atlantic region
6. Modify the measures eligible for inclusion in the framework adjustment process	Add recreational and IFQ measures to the list of management measures that can be adjusted via the framework adjustment process
7. Review new scientific information pertaining EFH	Review, and if necessary, update the EFH components of the FMP

4.3 Management Objectives

The overall goal of this FMP is to rebuild tilefish so that the optimum yield can be obtained from this resource. To meet the overall goal, the following objectives are adopted:

1. Prevent overfishing and rebuild the resource to the biomass that would support MSY.
2. Prevent overcapitalization and limit new entrants.
3. Identify and describe essential tilefish habitat.

4. Collect necessary data to develop, monitor, and assess biological, economic, and social impacts of management measures designed to prevent overfishing and to reduce bycatch of tilefish in all fisheries

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5.0 MANAGEMENT ALTERNATIVES

MEASURES AFFECTING FISHERY PROGRAM ADMINISTRATION

Individual Fishing Quota Program

5.1 Individual fishing quota (IFQ)

An IFQ is a Federal permit to harvest a quantity of fish. In the U.S., several fisheries have been managed under IFQ systems for over a decade. The mid-Atlantic surfclam/ocean quahog fishery was the first fishery to be managed under an IFQ system in 1990. IFQ management for the South Atlantic wreckfish and North Pacific halibut and sablefish fisheries started in 1992 and 1995 respectively. In 1996, the U.S. Congress imposed a moratorium on IFQ programs and asked for a detailed study of IFQs overall efficacy from the National Research Council (NRC). The NRC conducted a detailed review on IFQs and reported findings to Congress in a 1999 book entitled "Sharing the Fish: Toward a National Policy on Individual Fishing Quotas." The NRC provided many recommendations on behalf of the working committee. Under the summary of recommendations, the NRC stated that "IFQs should be allowed as an option in fisheries management if a regional council finds them to be warranted by conditions within a particular fishery and appropriate measures are imposed to avoid potential adverse effects. The issues of initial allocation, transferability, and accumulation of shares should be given careful consideration when IFQ programs are considered and developed by regional councils and reviewed by the Secretary of Commerce" (NRC 1999, p. 5).The reauthorization of the Magnuson-Stevens Act of 2006 established national guidelines for the implementation of LAP programs for the harvesting of fish (including IFQs). The Tilefish Fishery Management Action Team (TFMAT), Council, and Tilefish Committee considered these guidelines in the development of the IFQ measures evaluated in this document. Since the moratorium was lifted, two additional IFQ programs have been added (Red Snapper and Bering Sea and Aleutian Islands King and Tanner Crabs).

Eligibility for the initial allocation of quota shares is one of the most controversial aspects of the implementation phase of the IFQ program. Controversy focuses on who should be eligible for initial allocations and the criteria that should be used to allocate shares. Ideally, initial allocation should widely distribute shares to avoid granting excessive windfall profits to a few participants in the fishery. Broader initial allocations will distribute benefits more equitably and compensate more individuals as shares are consolidated. Share distribution should consider investments of time and capital in the development of the fishery. Section 303(b)(6) of the Magnuson-Stevens Act provides for the establishment of limited access management systems in order to achieve OY if, in developing such a system, the Council and Secretary take into account: 1) present participation in the fishery; 2) historical fishing practices in, and dependence on, the fishery; 3) the economics of the fishery; 4) the capability of fishing vessels used in the fishery to engage in other fisheries; 5) the cultural and social framework relevant to the fishery and any affected fishing communities; the fair and equitable distribution of access privileges in the fishery; and 6) any other relevant considerations.

As indicated in section 4.0, the FMP implemented a limited entry program and a tiered commercial quota allocation of the TAL. The original FMP does not address how the quota is to be distributed among vessels within each of the three fishing categories. The Council is considering establishing an IFQ system for the vessels currently participating in the tilefish limited access fishery. The measures described in this section (as well as other sections below) were developed by the TFMAT in conjunction with the Surfclam/Ocean Quahog and Tilefish Committee and the Tilefish Advisory Panel, as well as input provided by the Council. Last but not least, input from the industry and other groups of interest collected during the scoping process were considered when developing these measures. In short, considerable effort and points of view were drawn on to develop the measures presented in this document.

A list of the IFQ alternatives evaluated in this amendment is presented at the end of this section (Box 5.1). In the description of the IFQ alternatives in this and subsequent sections, an IFQ is expressed as a percentage of the tilefish commercial fishery's TAL. The term ***IFQ share (or IFQ quota share)*** refer to the basic entitlement, which are denominated in terms of a percentage of the adjusted TAL. Therefore, an IFQ share represents a percentage of the annual TAL (i.e., adjusted quota or TAL) in the tilefish fishery and each year ***annual IFQ allocations*** (in pounds) are issued to specific individuals. Therefore, annual IFQ allocations refer to the periodic harvest privileges which are denominated in terms of units of TAL (in pounds). The percentage shares of the commercial quota of tilefish will equate to annual IFQ allocations.

An array of potential IFQ measures is considered below for evaluation. These measures range from the no action alternative to alternatives that could implement an IFQ program for a specific permit category or all permit categories (except for the incidental permit category) taking into consideration landings for various time periods for IFQ allocation purposes. However, there are various aspects of the program that would remain the same regardless of the type of IFQ system described in section 5.1. These features of the program are introduced below.

Program Features

In the U.S., IFQ programs are nothing more than a limited privilege to harvest a public resource and should never be considered private property. Therefore, IFQ are privileges that can are revocable and not permanent in nature. An IFQ system may last as long as the program meets its stated objectives. However, the Council reserves the right to cancel the program if needed. Section 303A(b) of the Magnuson-Stevens Act specifies the following regarding IFQs: 1) shall be considered permits; 2) may be revoked, limited, or modified at any time in accordance with this Act, including revocation if the system is found to have jeopardized the sustainability of the stock or the safety of fishermen; 3) shall not confer any right of compensation to the holder of such limited access privilege, quota share, or other such limited access system authorization if it is revoked, limited, or modified; 4) shall not create, or be construed to create, any right, title, or interest in or to any fish before the fish is harvested by the holder; and 5) shall be considered a grant of permission to the holder of the limited access privilege or quota share to engage in

activities permitted by such limited access privilege or quota share. The Act also requires that Regional Fishery Management Councils ensure that any new IFQ program "establishes procedures and requirements for the review and revision of the terms of any such program (including any revisions that may be necessary once a national policy with respect to individual fishing quota programs is implemented), and, if appropriate, for the renewal, reallocation, or reissuance of individual fishing quotas."

Duration

IFQ privileges would be assigned for the duration of the IFQ program. The IFQ program would remain in effect until it is modified or terminated. The program may be modified after going through an administrative review of the operation of the program. As indicated above, the reauthorized Magnuson-Stevens Act of 2006 requires a formal program review five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years).

According to the reauthorized Magnuson-Stevens Act of 2006, a limited access privilege is a permit issued for a period of no more than 10 years. The permit can be renewed before the end of that period, unless it has been revoked, limited, or modified as provided by the Act (section 303A(c)(7)(f)). It is important to mention that while the limited access privilege permit needs to be renewed, the allocation of that permit does not necessarily have to change.

IFQ Shares and Allocation

An IFQ share is the percentage of the commercial quota of tilefish proportioned to each eligible person based on specified landings data. An IFQ allocation is the actual poundage of tilefish, measured in both whole (live) and gutted (landed) weight, each IFQ shareholder is ensured the opportunity to land during a given fishing year. The allocation granted each IFQ shareholder would be derived by multiplying their IFQ share times the annual tilefish commercial quota (overall quota because IFQ system implemented for all permit categories). A person would be required to have an annual allocation or portion thereof, to harvest, possess, or sell tilefish.

A person would not be permitted to land any tilefish in excess of his/her current allocation. If a share holder lands more than it is allowed under the shareholders allocation, such overage would be deducted from the next year’s allocation associated with the shareholder’s IFQ share. If a share holder leases a portion or all of his/her allocation, and more tilefish is landed than it is allowed under the shareholders allocation, such overage would be deducted from the next year’s allocation associated with the shareholder’s IFQ share. The practice of highgrading will be prohibition through this amendment (see section 7.1.1 for a complete description of highgrading).

Adjustments in Commercial Quota and Allocation

The Council periodically reviews and adjusts the commercial quota for tilefish in response to new data and information, which generally take the form of new or updated tilefish stock assessments.[8] As the quota is adjusted, shareholder's IFQ allocations would be proportionately adjusted based on the IFQ share each shareholder has at the time of the adjustment.

Landings Data Used for IFQ Allocation and Appeals Process

There are multiple data requirements for tilefish vessels, owners, and dealers. This creates the potential to result in conflicting landings data. Comparisons were made between the available data sets over different time periods, permit categories, and vessels. The Tilefish FMP was effective on November 1, 2001. Effective that date, vessels holding a limited access category (full-time tier 1, full-time tier 2, and part-time) or incidental tilefish permit were required to report their landings of golden tilefish for each fishing trip, via the NMFS IVR call-in system.

Differences between data sets were considered, and while no data set is believed to be 100% accurate, the following data was thought to be the best for determining IFQ allocation numbers. Dealer weighout data was used from 1988 through 2001, and IVR data (see next paragraph for detailed explanation) was used for years 2002 through 2005 (eliminating landings from the lawsuit period May 15, 2003 through May 31, 2004).[9] Landings data from 1988 through 1998 would not be subject to appeal.[10] Landings records appeals for 1999 through 2000 would be based on NMFS weighout (dealer data) and landings records appeals for 2001 through 2005 would be based on NMFS weighout (2001) and IVR data (2002-2005). If NMFS weighout logbooks are not available, other

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[8] The Tilefish FMP states that: "There would also be a "benchmark" stock assessment conducted at the NEFSC sponsored SARC/SAW every three years from which the specifics of the B_{MSY}, F_{MSY}, and other biological reference points could change which thus could warrant changes in the actual TAL. The strategy itself would not change, in that the 10 year rebuilding duration, with 50% probability of achieving the B_{MSY} target, and the TAL are the measures used by the Committee and Council to get to the target".

[9] As indicated in section 4.0, as a result of the decision of the Hadaja v. Evans lawsuit, the permitting and reporting requirements for the FMP were postponed for close to a year (May 15, 2003 through May 31, 2004). During that time period, it was not mandatory for permitted tilefish vessels to report their landings. In addition, during that time period, vessels that were not part of the tilefish limited entry program also landed tilefish. If landings from that time period were to be used for IFQ quota allocation purposes, vessels that overfished during that time period would be rewarded. As such, landings for the May 15, 2003 through May 31, 2004 period would not be considered when using average landings for the 2001 through 2005 period to assign allocations to each vessel under the IFQ system. Therefore, landings records during the May 15, 2003 through May 31, 2004 cannot be appealed because they were not used when developing the IFQ share allocations.

[10] NMFS weighout landings from this time period was used to develop the current limited access program and has therefore been available for appeal once. Furthermore, additional landings data submitted by the industry during the FMP development used to more accurately represent tilefish landings for the 1988 through 1998 period was also used in the development of this amendment to supplement NMFS data for allocation purposes.

records or data submitted on or before September 9, 2004,[11] could be used. If IVR data is not available, other records or data submitted on or before December 31, 2006,[12] could be used. During the first year of the IFQ program only, the Regional Administrator initially would reserve a 15–percent IFQ share, prior to initial distribution of shares, to be used to resolve appeals. Any portion of the 15–percent share reserve remaining after the appeals process has been completed would be proportionately distributed back to the initial recipients as soon as possible that year. If resolution of appeals requires more than a 15–percent share, the shares of all initial shareholders would be reduced proportionately to accommodate the required shares in excess of the 15–percent reserve.

As indicated above, the data used for the historical landings were based on more than one source of data. The FMAT examined the different sources of data available for each year and compared the completeness and accuracy of each source of data. Dealer data has historically been used to calculate total landings. The implementation of the FMP in November of 2001 required all permitted tilefish vessels to enter their landings into an individual trip report (IVR). Beginning with 2002, IVR data was used for allocation purposes because: 1) landings reported via this data system are used to monitor the tilefish quota; 2) there was a significant number of documented fishing trips in the IVR that were not reported in the dealer data system, particularly for tier 1 vessels selling predominantly to a single dealer (especially in 2004 and 2005); 3) the FMAT did not believe that fishermen would have any incentive to over report landings via the IVR system because over reporting landings would have caused the fishery to close early.

Upon approval of an IFQ system under this amendment, NMFS will attempt to notify all owners of vessels for which NMFS has credible evidence available that they meet the qualification criteria described for the chosen IFQ allocation system. The only items subject to appeal under this IFQ system would be initial eligibility for IFQ shares based on ownership of full-time tier 1, full-time tier 2, and/or part-time permit, the accuracy of the amount of landings, and correct assignment of landings to the permit holder. The Regional Administrator would review, evaluate, and render final decisions on appeals. Appeals would have to be submitted to the Regional Administrator postmarked no later than 180 days after the effective date of the final regulations implementing the IFQ program and would have to contain documentation supporting the basis for appeal. Hardship arguments would not be considered. The appeal shall set forth the basis for the applicant's belief that the Regional Administrator's decision was made in error. The appeal may be presented, at the option of the applicant, at a hearing before an officer appointed by the Regional Administrator. The hearing officer shall make a recommendation to the Regional Administrator. The Regional Administrator's decision on the appeal is the final decision of the Department of Commerce.

[11] This date, Council Staff drafted a memorandum to the Surfclam/Ocean Quahog, and Tilefish Committee that initiated the evaluation of the Tilefish IFQ program.
[12] Under the current reporting system, tilefish fishermen have up to a year to correct reported landings.

Annual Recalculation and Notification of IFQ Shares and Allocation

On or about October 31 each year, IFQ shareholders would be notified, via mail or other appropriate electronic media, of their IFQ share and allocation for the upcoming fishing year. These updated share values would reflect the results of applicable share transfers and any redistribution of shares resulting from permanent revocation of applicable permits or endorsements under 15 CFR Part 904. Allocation is calculated by multiplying IFQ share times the annual tilefish commercial quota. Updated allocation values would reflect any change in IFQ share, any change in the annual commercial quota for tilefish, and any debits required as a result of prior fishing year overages. IFQ participants would be able to monitor the status of their shares by contacting the NMFS or checking other appropriate electronic media throughout the year.

Transferability Issues/Reporting

For IFQ transferability purposes, a receipt showing account balance and time of transfer must be filled. In order for an individual to transfer any portion of an individual allocation either permanently (sale) or temporarily (lease) an IFQ Transfer Form must be submitted to NMFS. This form would contain at least the following data elements: the type of transfer, signature of both parties involved in the transfer, the cost associated with the transfer, proof of eligibility to give or receive quota, and the amount of quota to be transferred. Once the transfer has been approved by NMFS new allocation permits will be issued to both parties reflecting changes to their individual quota accounts. This permit would serve as both receipts for the transfer and proof of eligibility to possess fish under the IFQ program. A transfer of quota may be denied as a result of failure to meet U.S. citizenship/permanent resident alien requirements, the cumulative quota share/annual IFQ allocation resulting in a percentage prohibited under an established share accumulation threshold, or failure to meet other eligibility requirements.

It is important to mention that IFQ sub-leasing will not be allowed under the proposed IFQ system. That is, an IFQ allocation can not be leased more than once during a fishing year. The Regional Administrator (March 24, 2008 letter from Pat Kurkul to Pete Jensen) has indicated that sub-leasing may require a new management system that may be administratively prohibitive. Furthermore, the Regional Administrator has indicated that she would "support a provision that would allow a lease to be voided in the event an emergency renders a lessee unable to fish, but only in the case where no allocation was fished pursuant to the lease." In addition, at the April 2008 Council meting, some industry members indicated that they did not see the prohibition of sub-leasing as an issue that would impede the functioning of an IFQ system for the tilefish fishery. Nevertheless, the Council believes that if new management systems that are not administratively prohibitive become available in the future, and the Council finds it necessary to implement sub-leasing in the tilefish fishery in order to improve the management of the IFQ system, then this could be addressed via the framework adjustment process (i.e., transferability rules).

Box 5.1. List of IFQ allocation management measures considered in this amendment.	
Alternative	**Description**
No Action	
1A	Maintain status quo management system for tilefish
Alternative Set 1B: Establish an IFQ system for full-time tier 1 category permit holders only (maintain status quo quota management system for all other permit categories)	
1B1	Establish an IFQ system for full-time tier 1 category permit holders only using average landings for years 1988-1998 to allocate the quota
1B2	Establish an IFQ system for full-time tier 1 category permit holders only using average landings for years 2001-2005 to allocate the quota
1B3	Establish an IFQ system for full-time tier 1 category permit holders only using average landings for the best five years from 1997-2005 to allocate the quota
1B4	Establish an IFQ system for full-time tier 1 category permit holders only dividing the overall tier 1 quota among all vessels in this categories
Alternative Set 1C: Establish an IFQ system for full-time tier 1 and 2 category permit holders only (maintain status quo quota management system for all other permit categories)	
1C1	Establish an IFQ system for full-time tier 1 and 2 category permit holders only using average landings for years 1988-1998 to allocate the quota
1C2	Establish an IFQ system for full-time tier 1 and 2 category permit holders only using average landings for years 2001-2005 to allocate the quota
1C2A	Establish an IFQ system for full-time tier 1 and 2 category permit holders only using average landings for years 2001-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1C3	Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only using average landings for the best five years from 1997-2005 to allocate the quota
1C3A	Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only using average landings for the best five years from 1997-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1C4	Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only dividing the overall quota for each permit category equally among all vessels in each category

Box 5.1 (continued). List of IFQ allocation management measures considered in this amendment.	
Alternative	**Description**
Alternative Set 1D: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category)	
1D1	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for years 1988-1998 to allocate the quota. In addition, for part-time vessels, when appropriate, landings for the 1984-1987 period are also considered to include vessels that originally qualified as limited access permit holders for allocation purposes when appropriate to allocate IFQ shares (see footnote 3)
1D1A	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for years 1988-1998 to identify vessels qualifying for IFQ allocation. In addition, for part-time vessels, when appropriate, landings for the 1984-1987 period are also considered to include vessels that originally qualified as limited access permit holders for allocation purposes when appropriate to allocate IFQ shares (see footnote 3). The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1D2	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for years 2001-2005 to allocate the quota
1D2A	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for years 2001-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1D3	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for the best five years from 1997-2005 to allocate the quota
1D3A	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for the best five years from 1997-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1D4	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only dividing the overall quota for each permit category equally among originally permitted vessels in each category
1E Preferred Alternative	Establish an IFQ system for any combination of tilefish limited entry permit categories (i.e. full-time tier 1, full-time tier 2, part-time), allowing different qualifying time periods (i.e. average landings 1988-1998, average landings 2001-2005, average landings for the best five years from 1997-2005) to be used in the calculation of shares in each permit category. Allocations to qualifying vessels in each permit category can be based on the percentages associated with landings for each of these time periods or by dividing the overall quota for each permit category equally among all vessels in each category
1F	Do not restrict initial eligibility for the IFQ ownership (considered but rejected for further analysis)

5.1.A Alternative 1A: No Action (Maintain the status quo quota management system for tilefish)

Under this alternative, no changes to the tilefish quota management system would take place. Under the FMP, the "target" estimate of landings for the incidental category (5 percent of the TAL) is first deducted from the overall TAL, and then the remainder of the TAL (i.e., adjusted quota or TAL) is divided among the full-time tier 1 category, which receives 66 percent; the full-time tier 2 category, which receives 15 percent; and, the part-time category, which receives 19 percent. Trip limits are currently only imposed in the incidental permit category (open access) to achieve a "target" or soft quota.

5.1.B Alternative 1B: Establish an IFQ system for full-time tier 1 category permit holders only (maintain status quo quota management system for all other permit categories)

Under this alternative, an IFQ system would be established for the full-time tier 1 permit holders only (maintain status quo quota management system for all other permit categories). That is, tier 1 permit holders would receive a specific percentage of the tier 1 quota (after adjustments for the incidental category have been made; see section 5.1.A). IFQ shares would be issued to each tier 1 shareholder in denominations equaling the tier 1 shareholder share of the initial tier 1 quota. Prior to the beginning of each fishing season (or at times commercial quota adjustments are required), the percentage of the quota allocated to IFQ holders would be specified in both whole (live) and gutted (landed) weight.

In general terms, the allocation of IFQ shares based on historical landings is considered to be an equitable way to recognize both present and historical participants in the fishery, as required by the Magnuson-Stevens Act (section 303(b)(6)). Landings history has been used to establish initial quota allocation for IFQ programs in the U.S. and it is perceived by stakeholders as a fair measure of participation in the fishery. In addition, initial allocation may include dividing the quota among all confirmed participants or a portion of the quota among a group of verifiable participants.

The initial apportionment of the IFQ shares to tier 1 permit holders would be based on historical landings from one of three proposed sets of time periods. These time periods are discussed below as sub-alternatives under alternative 1B. These time periods will also be used to discuss the initial apportionment of IFQ shares for the rest of the alternatives discussed below (alternatives 1C-1E). Landings data would come from the best available source submitted to NOAA Fisheries Service. In determining IFQ allocation numbers, NMFS dealer weighout data was used from 1988 through 2001, and NMFS IVR data was used for years 2002 through 2005 (eliminating landings from the lawsuit period May 15, 2003 through May 31, 2004). In addition, in order to determine the universe of qualified vessels for IFQ eligibility under this alternative and the rest of the IFQ alternatives discussed in this document, a tilefish limited access vessel owner needs to have been issued a valid tilefish limited access permit for the 2005 permit year (May 1 to April 30). An individual could also qualify to receive IFQ share allocation if they hold a valid

Confirmation of Permit History (CPH).[13] A vessel owner that has continually renewed their limited access tilefish vessel permit and/or been issued a valid CPH has clearly shown that he/she intends to continue to fish for tilefish, and/or re-enter the tilefish fishery at a future time. Lastly, while the Council provided neither a minimum allocation nor minimum landings requirements for initial eligibility, it required a 0.5% minimum IFQ share allocation/share distribution (i.e., each tilefish limited access vessels would require a minimum 0.5% group share allocation/share distribution to qualify for IFQ). This minimum share allocation/distribution is mainly intended to ensure the lowest allocation would be at least a practical minimum amount in which to participate in the fishery.

Under this alternative, all other permit categories would continue to operate under the existing tilefish quota allocation system. Therefore, incidental permit holders will continue to share 5 percent of the overall initial TAL; and permit holders in the full-time tier 2 and part-time categories would continue to respectively share 15 and 19 percent of the remainder TAL (after adjustments for the incidental category have been made).

5.1.B1 Alternative 1B1: Establish an IFQ system for full-time tier 1 category permit holders only (maintain status quo quota management system for all other permit categories) using average landings for years 1988-1998 to allocate the quota

Under this sub-alternative, average landings for the 1988 through 1998 period would be used to assign allocations of the tier 1 quota allocation (i.e., 66% of the adjusted TAL[14]) to each vessel under the IFQ system. Historical landings for the 1988 through 1998 period were used to determine the initial commercial quota allocations under the FMP limited access program.

5.1.B2 Alternative 1B2: Establish an IFQ system for full-time tier 1 category permit holders only (maintain status quo quota management system for all other permit categories) using average landings for years 2001-2005 to allocate the quota

Under this sub-alternative, average landings for the 2001 through 2005 period would be used to assign allocations of the tier 1 quota allocation (i.e., 66% of the adjusted TAL) to each vessel under the IFQ system. This time period represents historical landings after the FMP was implemented.

As indicated in section 4.0, as a result of the decision of the Hadaja v. Evans lawsuit, the permitting and reporting requirements for the FMP were postponed for close to a year (May 15, 2003 through May 31, 2004). During that time period, it was not mandatory for permitted tilefish vessels to report their landings. In addition, during that time period,

[13] A CPH is required when a vessel that has been issued a limited access permit has sunk, been destroyed, or been sold to another person without its permit history and a new vessel has not been purchased. For a complete definition of CPH see 50 CFR §648.4 at: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=85efdb210e2f5574d3b8218c65722b5b&rgn=div8&view=text&node=50:8.0.1.1.6.1.1.4&idno=50

[14] Adjusted TAL = overall TAL - allocation to the incidental permit category - overages (if applicable) - research set-aside (if applicable).

vessels that were not part of the tilefish limited entry program also landed tilefish. If landings from that time period were to be used for IFQ quota allocation purposes vessels that overfished during that time period would be rewarded. As such, landings for the May 15, 2003 through May 31, 2004 period would not be considered when using average landings for the 2001 through 2005 period to assign allocations of the tier 1 quota allocation to each vessel under the IFQ system.

5.1.B3 Alternative 1B3: Establish an IFQ system for full-time tier 1 category permit holders only (maintain status quo quota management system for all other permit categories) using average landings for the best five years from 1997-2005 to allocate the quota

Under this sub-alternative, average landings for the best five years from 1997 through 2005 period would be used to assign allocations of the tier 1 quota allocation (i.e., 66% of the adjusted TAL) to each vessel under the IFQ system. This time period represents historical landings from five years before the FMP was implemented until 2005. As discussed in section 5.1.B2, landings for the May 15, 2003 through May 31, 2004 period would not be considered when using average landings for the 1997 through 2005 period to assign allocations of the tier 1 quota allocation to each vessel under the IFQ system.

5.1.B4 Alternative 1B4: Establish an IFQ system for full-time tier 1 category permit holders only (maintain status quo quota management system for all other permit categories) dividing the overall tier 1 quota among all permitted vessels in this category

Under this sub-alternative, the overall tier 1 quota would be divided equally among all the permitted vessels in this category.

5.1.C Alternative 1C: Establish an IFQ system for full-time tier 1 and 2 category permit holders only (maintain status quo quota management system for all other permit categories)

Under this alternative, an IFQ system would be established for the full-time tier 1 and tier 2 permit holders only (maintain status quo quota management system for all other permit categories). That is, tier 1 and tier 2 permit holders would receive a specific percentage of the tier 1 and tier 2 quotas, respectively (after adjustments for the incidental category have been made; see section 5.1.A). IFQ shares would be issued to each tier 1 and tier 2 shareholders in denominations equaling the shareholders share of the quota initially allocated to their respective categories. Prior to the beginning of each fishing season (or at times commercial quota adjustments are required), the percentage of the quota allocated to IFQ permit holders would be specified in both whole (live) and gutted (landed) weight.

The IFQ allocation to tier 1 and tier 2 permit holders would be based on historical landings from one of the three proposed sets of time periods. These time periods are discussed below as sub-alternatives under alternative 1C. The discussion regarding data

sources and limited access permit and/or CPH requirements to determine the universe of qualified vessels for IFQ eligibility discussed in section 5.1.B also apply here.

All other permit categories would continue to operate under the existing tilefish quota allocation system. Therefore, incidental permit holders will continue to share 5 percent of the overall initial TAL and permit holders in the part-time category would continue to share 19 percent of the remainder TAL (after adjustments for the incidental category have been made; see section 5.1.A).

5.1.C1 Alternative 1C1: Establish an IFQ system for full-time tier 1 and 2 category permit holders only (maintain status quo quota management system for all other permit categories) using average landings for years 1988-1998 to allocate the quota

Under this sub-alternative, average landings for the 1988 through 1998 period would be used to assign allocations of the tier 1 (i.e., 66% of the adjusted TAL) and tier 2 (i.e., 15% of the adjusted TAL) quota allocations to each vessel under the IFQ system. Historical landings for the 1988 through 1998 period were used to determine the initial commercial quota allocations under the FMP limited access program.

5.1.C2 Alternative 1C2: Establish an IFQ system for full-time tier 1 and 2 category permit holders only (maintain status quo quota management system for all other permit categories) using average landings for years 2001-2005 to allocate the quota

Under this sub-alternative, average landings for the 2001 through 2005 period would be used to assign allocations of the tier 1 (i.e., 66% of the adjusted TAL) and tier 2 (i.e., 15% of the adjusted TAL) quota allocations to each vessel under the IFQ system. This alternative would limit the harvest capacity of the tilefish fishery and is based upon the understanding that the fishery has more than adequate capacity to harvest the maximum economic yield level. Using the 2001 through 2005 period to make IFQ quota allocations would result in greater IFQ quota allocation to active permitted vessels when compared to permitted vessels that have not actively participated in the fishery (latent vessels) during that time period. The discussion regarding the use of historical landings for the 2001 through 2005 period for IFQ allocation presented in section 5.1.B2 also apply here.

5.1.C2A Alternative 1C2A: Establish an IFQ system for full-time tier 1 and 2 category permit holders only (maintain status quo quota management system for all other permit categories) using average landings for years 2001-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category

Under this sub-alternative, average landings for the 2001 through 2005 period would be used to identify full-time tier 1 and 2 category permit holders that would qualify for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category. The

discussion regarding the use of historical landings for the 2001 through 2005 period for IFQ allocation presented in section 5.1.B2 also apply here.

5.1.C3 Alternative 1C3: Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only (maintain status quo quota management system for all other permit categories) using average landings for the best five years from 1997-2005 to allocate the quota

Under this sub-alternative, average landings for the best five years from 1997 through 2005 period would be used to assign allocations of the tier 1 (66% of the adjusted TAL) and tier 2 (i.e., 15% of the adjusted TAL) quota allocations to each vessel under the IFQ system. The discussion regarding the use of historical landings for the 1997 through 2005 period for IFQ allocation presented in section 5.1.B3 also apply here.

5.1.C3A Alternative 1C3A: Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only (maintain status quo quota management system for all other permit categories) using average landings for the best five years from 1997-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category

Under this sub-alternative, average landings for the best five years from 1997 through 2005 period would be used to identify full-time tier 1 and 2 category permit holders that would qualify for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category. The discussion regarding the use of historical landings for the 1997 through 2005 period for IFQ allocation presented in section 5.1.B3 also apply here.

5.1.C4 Alternative 1C4: Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only (maintain status quo quota management system for all other permit categories) dividing the overall quota for each permit category equally among all permitted vessels in each category

Under this sub-alternative, the overall quota for each permit category (tier 1 and tier 2) would be divided equally among the permit holders from each permit category.

5.1.D Alternative 1D: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category)

Under this alternative, an IFQ system would be established for the full-time tier 1, full-time tier 2, and part-time category permit holders (maintain status quo management system for the incidental permit category). That is, tier 1, tier 2, and part-time permit holders would receive a specific percentage of the respective quotas allocated to each category (after adjustments for the incidental category have been made; see section 5.1.A). IFQ shares would be issued to each category shareholders in denominations

equaling the shareholders share of the quota initially allocated to their respective categories. Prior to the beginning of each fishing season (or at times commercial quota adjustments are required), the percentage of the quota allocated to IFQ permit holders would be specified in both whole (live) and gutted (landed) weight.

The IFQ allocation to tier 1, tier 2, and part-time permit holders would be based on historical landings from one of the three proposed sets of time periods. These time periods are discussed below as sub-alternatives under alternative 1D. The discussion regarding data sources and limited access permit and/or CPH requirements to determine the universe of qualified vessels for IFQ eligibility discussed in section 5.1.B also apply here.

The incidental permit category would continue to operate under the existing tilefish quota allocation system. Therefore, incidental permit holders will continue to share 5 percent of the overall initial TAL.

5.1.D1 Alternative 1D1: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category) using average landings for years 1988-1998 to allocate the quota. In addition, for part-time vessels, when appropriate, landings for the 1984-1987 period are also considered to include vessels that originally qualified as limited access permit holders for allocation purposes when appropriate to allocate IFQ shares

Under this sub-alternative, average landings for the 1988 through 1998 period would be used to assign allocations of the tier 1 (i.e., 66% of the adjusted TAL), tier 2 (i.e., 15% of the adjusted TAL), and part-time (19% of the adjusted TAL) quota allocations to each vessel under the IFQ system. Historical landings for the 1988 through 1998 period were also used to determine the initial commercial quota allocations under the FMP limited access program. However, part-time vessels that did not qualify for commercial quota allocation (initial limited access entry) using the various possible landings combinations from 1988 through 1998 period, then landings for the 1984 through 1987 period are also considered. See footnote 3 for detailed qualification criteria used to access entry into the limited access program.

5.1.D1A Alternative 1D1A: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category) using average landings for years 1988-1998 to identify vessels qualifying for IFQ allocation. In addition, for part-time vessels, when appropriate, landings for the 1984-1987 period are also considered to include vessels that originally qualified as limited access permit holders for allocation purposes when appropriate to allocate IFQ shares. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category

Under this sub-alternative, average landings from 1988 through 1998 period would be used to identify full-time tier 1, full-time tier 2, and part-time category permit holders that would qualify for IFQ allocation. In addition, part-time vessels that did not qualify for commercial quota allocation (initial limited access entry) using the various possible landings combinations from 1988 through 1998 period, then landings for the 1984 through 1987 period are also considered. See footnote 3 for detailed qualification criteria used to access entry into the limited access program. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category.

5.1.D2 Alternative 1D2: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category) using average landings for years 2001-2005 to allocate the quota

Under this sub-alternative, average landings for the 2001 through 2005 period would be used to assign allocations of the tier 1 (i.e., 66% of the adjusted TAL), tier 2 (i.e., 15% of the adjusted TAL), and part-time (i.e., 19% of the adjusted TAL) quota allocations to each vessel under the IFQ system. The discussion regarding the use of historical landings for the 2001 through 2005 period for IFQ allocation presented in section 5.1.B2 above also apply here.

5.1.D2A Alternative 1D2A: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category) using average landings for years 2001-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category

Under this sub-alternative, average landings from 2001 through 2005 period would be used to identify full-time tier 1, full-time tier 2, and part-time category permit holders that would qualify for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category.

5.1.D3 Alternative 1D3: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category) using average landings for the best five years from 1997-2005 to allocate the quota

Under this sub-alternative, average landings for the best five years from 1997 through 2005 period would be used to assign allocations of the tier 1 (i.e., 66% of the adjusted TAL), tier 2 (i.e., 15% of the adjusted TAL), and part-time (i.e., 19% of the adjusted TAL) quota allocations to each vessel under the IFQ system. The discussion regarding the use of historical landings for the 1997 through 2005 period for IFQ allocation presented in section 5.1.B3 also apply here.

5.1.D3A Alternative 1D3A: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category) using average landings for the best five years from 1997-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category

Under this sub-alternative, average landings for the best five years from 2001 through 2005 period would be used to identify full-time tier 1, full-time tier 2, and part-time category permit holders that would qualify for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category.

5.1.D4 Alternative 1D4: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category) dividing the overall quota for each permit category equally among all vessels in each category

Under this sub-alternative, the overall quota for each permit category would be divided equally among the permit holders from each permit category.

5.1.E Alternative 1E: Establish an IFQ system for any combination of tilefish limited entry permit categories (i.e. full-time tier 1, full-time tier 2, part-time), allowing different qualifying time periods (i.e. average landings 1988-1998, average landings 2001-2005, average landings for the best five years from 1997-2005) to be used in the calculation of shares in each permit category. Allocations to qualifying vessels in each permit category can be based on the percentages associated with landings for each of these time periods or by dividing the overall quota for each permit category equally among all vessels in each category [Preferred Alternative]

Under this alternative, an IFQ system would be established for any combination of limited entry permit categories (i.e. full-time tier 1, full-time tier 2, part-time). Any limited entry permit category not participating in the implementation of an IFQ system would continue to participate under the status quo management system. In addition, the incidental permit category would maintain status quo management system regardless of the number and combination of limited entry permit categories chosen to be included in the IFQ program. Full-time tier 1, full-time tier 2, and/or part-time permit holders would receive a specific percentage of their group quotas (after adjustments for the incidental category have been made; see section 5.1.A). IFQ shares would be issued to each tier 1, tier 2, and/or part-time shareholders in denominations equaling the shareholders share of the quota initially allocated to their respective categories. Prior to the beginning of each fishing season (or at times commercial quota adjustments are required), the percentage of the quota allocated to IFQ permit holders would be specified in both whole (live) and gutted (landed) weight.

The IFQ allocation to each individual permit class group (i.e. full-time tier 1, full-time tier 2, part-time) would be based on historical average landings from one of the following time periods: 1) years 1988 through 1998; 2) years 2001 through 2005, or 3) best five years from 1997 through 2005. Regardless of the time period used for allocation purpose, vessels qualifying for IFQ allocation in tier 1 would receive an allocation equal to 66% of the adjusted TAL, tier 2 vessels would receive 15% of the adjusted TAL, and part-time vessels 19% of the adjusted TAL. The incidental permit category will continue to share 5 percent of the overall initial TAL regardless of the number and combination of limited entry permit categories chosen to be included in the IFQ program.

At the April 2008 meeting, the Council chose to use average landings for the 2001-2005 period to allocate IFQ shares to full-time tier 1 and 2 vessels. For part-time vessels, an equal allocation for vessels that landed tilefish during the 2001-2005 period was used to allocate IFQ shares to that permit category.

The discussion regarding data sources and limited access permit and/or CPH requirements to determine the universe of qualified vessels for IFQ eligibility discussed in section 5.1.B also apply here.

5.1.F Alternative 1F: Considered but rejected for further analysis - Do not restrict initial eligibility for the IFQ ownership

This alternative would not restrict the initial eligibility in the IFQ program. Therefore, anyone could qualify for an initial IFQ share allocation regardless of whether or not they were traditional participants in the fishery.

This alternative was rejected from further analysis because it was not considered to an effective way to reduce fishing capacity. All initial IFQ allocation alternatives presented in this amendment rely on historical participation in the fishery. The current participants have worked since the implementation of the FMP to help bring the fishery to the point where overfishing is not occurring and the stock is not overfished. The primary purpose of this amendment is to codify existing quota sharing agreements that already exist in the full-time tier 1 permit category, reduce overcapacity in the commercial fishery, and to eliminate, to the extent possible, the derby fishery that exists in the part-time and full-time tier 2 categories. Under derby style fishing, fishermen may target tilefish during unsafe weather conditions in order to compete with someone else for a share of the quota. Adverse biological impacts could occur as individuals with no or little experience in the fishery would operate at less efficient levels which could adversely impact the discard levels of non-target species.

5.2 Permanent IFQ transferability of ownership

Transferability of quota shares is one of the most critical and contentious elements in the design of an IFQ program (NRC 1999). Transferability allows people holding an IFQ to transfer fishing privileges (quota shares) to other people. Most IFQ programs used worldwide allow transferability. However, the transferability of IFQ shares varies

worldwide and is related to the objectives of the IFQ program. Some IFQ programs allow for unrestricted transferability while others do not allow for transferability. The economic and social objectives of the IFQ program must be taken into consideration when assessing the transferability of IFQ shares.

If the primary goal of the program is to achieve the reduction of the fishing fleet and achieve economic efficiency[15] then transferability should be as flexible as possible. On the other hand, if the goal of the program is to protect fishing dependent communities, protect the owner-operator production system, or prevent absentee ownership, then transferability may need to be restricted.

According to the NRC, two main economic purposes are related with the concept of IFQ transferability. These are "1) Achieving rationalization of the industry by allowing some participants to leave the fishing industry with a compensation financed by the industry itself, that is, to be bought out by other industry participants; and 2) Ensuring that IFQs are held by those who are willing to pay the highest price for them. This promotes efficiency in the industry because those who are willing to pay the highest price for quotas will normally be those who expect to utilize them most profitably, either by doing so at a lower cost than others or by transforming the fish into a more valuable product" (NRC 1999, p. 168).

In general terms, IFQ shares and annual allocations can be transferred to other people for sale, lease, gifting, or general transfer (e.g., to other family member(s)). Transferability of ownership can range from temporary (e.g., leasing, within fishing year or fishing season) to permanent (e.g., sale). All transfers of IFQ shares (including price of transferred shares) and the annual allocation of total shares (percentage and poundage) are required to be registered with NMFS. The carryover of unused portions of the annual quota shares cannot be transferred for use in the next fishing year. The transfer of IFQ shares and annual IFQ allocations are not permitted during the last two months of the tilefish fishing year (September 1 to October31) in order to allow NMFS the necessary time to complete end-of-year IFQ program management. Temporary IFQ transferability of ownership (leasing) is discussed n the next section.

The Council is considering the implementation of limits on the number of shares that an individual, corporation, or other entity may hold in the proposed IFQ system as means to limit consolidation (alternative 5.4). In addition, the Council is also considering the implementation of IFQ leasing measures (alternative 5.3). The implementation of these alternatives would affect the overall transferability of ownership program that may be implemented by the Council.

[15] In general terms, economic efficiency is maximized when the following occurs: quota shares are freely transferable (in the long-term and short-term); quota shareholders are allowed to transfer shares permanently (sell) or temporarily (lease); the tenure of the quota share allocations are long-term or permanent (this minimizes uncertainty in the fishery and allows for long-term planning and enhances conservation ethics).

5.2.A Alternative 2A: No Action (IFQ shares would not be transferable)

Under this alternative transferability of IFQ shares would not be allowed.

5.2.B Alternative 2B: IFQ shares may be transferable among any interested party [Preferred Alternative]

Under this alternative IFQ shares would be fully transferable among persons or entities that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel as long as they meet the requirements under the reauthorized MSFCMA. This alternative would provide considerable flexibility to initial recipients of the IFQ shares and to individuals who may receive future IFQ shares through transfers. The premium received for private transaction transferring IFQ shares will be inversely related to the restrictions place on their transfer. Therefore, few limitations on IFQ transferability will likely result in a higher IFQ premium.

Transferability is likely to allow for flexibility in fishing operations. For example, a fisherman could buy or sell IFQ shares to expand or contract fishing capabilities in order to implement alternative business plans. Conversely, the lack of restrictions on transferability may result in an outcome that may not be desirable by current stakeholders. For example, the integral dynamics of fishing communities may be disrupted as quota shares may be *bought up* by non-fishing interests (e.g., environmental group or other non-commercial fishing group). While this may result in an economically efficient allocation of the resource, such an outcome may alter fishing communities.

For IFQ transferability purposes, a receipt showing account balance and time of transfer must be filled. In order for an individual to transfer any portion of an individual allocation either permanently (sale) or temporarily (lease) an IFQ Transfer Form must be submitted to NMFS. This form would contain at least the following data elements: the type of transfer, signature of both parties involved in the transfer, the cost associated with the transfer, proof of eligibility to give or receive quota, and the amount of quota to be transferred. Once the transfer has been approved by NMFS new allocation permits will be issued to both parties reflecting changes to their individual quota accounts. This permit would serve as both receipts for the transfer and proof of eligibility to possess fish under the IFQ program. A transfer of quota may be denied as a result of failure to meet U.S. citizenship/permanent resident alien requirements, the cumulative quota share/annual IFQ allocation resulting in a percentage prohibited under an established share accumulation threshold, or failure to meet other eligibility requirements.

5.2.C Alternative 2C: IFQ shares may only be transferred among IFQ shareholders during the first five years of the IFQ program and other individuals thereafter

Under this alternative IFQ shares would only be transferable for the first five years of the IFQ program among persons or entities that were issued an initial IFQ share allocation.

After five years any U.S. citizen, permanent resident alien, or corporation eligible to own a U.S. Coast Guard documented vessel may be eligible to own an IFQ share as long as they meet the requirements under the reauthorized MSFCMA. This alternative is believed to be equitable because it initially favors commercial tilefish fishermen who have invested time and resources into the fishery, but ultimately recognizes tilefish as a public resource and allows other individuals to participate in the fishery as long as they meet the requirements under the reauthorized MSFCMA.

In the event of the death of an IFQ permit holder within the first five years of the program, the surviving heir would be allowed to sell the IFQ share allocation (IFQ quota share) to an IFQ holder as long as the transaction meets all other program requirements (e.g. concentration limits). The discussion regarding the use of an IFQ Transfer Form for transferability purposes discussed in section 5.2.B also apply here.

5.2.D Alternative 2D: IFQ shares may only be transferred among IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit

Under this alternative IFQ shares would be transferred among tilefish IFQ shareholders or tilefish limited access permit holders that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel as long as they meet the requirements under the reauthorized MSFCMA.

In the event of the death of an IFQ permit holder, the surviving heir would be allowed to sell the permit to an IFQ holder or other vessels maintaining a valid limited access commercial tilefish permit as long as the transaction meets all other program requirements (e.g. concentration limits). The discussion regarding the use of an IFQ Transfer Form for transferability purposes discussed in section 5.2.B also apply here.

5.2.E Alternative 2E: IFQ shares may only be transferred among IFQ shareholders, other vessels maintaining a valid limited access commercial tilefish permit, or established tilefish fishermen (i.e., captains, mates, and deckhands)

Under this alternative IFQ shares would only be transferable among persons or entities that already hold IFQ share allocation, non-IFQ shareholders (i.e., vessels maintaining a valid commercial tilefish permit; if IFQ system is not implemented for all limited access vessel categories), or established tilefish fishermen (i.e., captains, mates, and deckhands). In addition, IFQ transfers must be made among permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel as long as they meet the requirements under the reauthorized MSFCMA.

This alternative would allow established tilefish fishermen (i.e., captain, mates, and deckhands) to acquire IFQ shares, thus creating opportunities for individuals involved in the tilefish fishery not having initial IFQ share allocation to participating in the fishery as IFQ quota holders in the future (as long as they meet the requirements under the reauthorized MSFCMA.). However, it may be difficult to determine who is an

established fisherman. Due to the complexities involved in this alternative it is anticipated that the administrative burden to NMFS may be prohibitively high as there is currently no similar program that verifies persons identities and work histories. The potential for fraud regarding work histories may be high under this alternative.

In the event of the death of an IFQ permit holder, the surviving heir would be allowed to sell the permit to an IFQ holder, other vessels maintaining a valid limited access commercial tilefish permit, or established tilefish fishermen (i.e., captains, mates, and deckhands) as long as the transaction meets all other program requirements (e.g. concentration limits). The discussion regarding the use of an IFQ Transfer Form for transferability purposes discussed in section 5.2.B also apply here.

5.3 IFQ leasing (temporary transfer of ownership)

The discussion regarding leasing requirements presented in section 5.2 also apply here.

5.3.A Alternative 3A: No Action (Annual IFQ allocations would not be leased)

Under this alternative Annual IFQ allocations would not be leased.

5.3.B Alternative 3B: Annual IFQ allocations may be leased among any interested party [Preferred Alternative]

Under this alternative annual IFQ allocations would be leased among persons that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel as long as they meet the requirements under the reauthorized MSFCMA. However, if a fisherman has a tilefish non-IFQ permit and wishes to lease annual IFQ allocations, the fisherman would have their landings deducted from their leased annual IFQ allocation for the entire duration that the leased annual IFQ allocation are available. In other words, once a lease is approved all landings from the lessee will be attributed to their leased annual IFQ allocations (i.e. lease allocation would be deducted first). This would facilitate the tracking of landings as they could only be reported under one specific permit type.

This alternative would provide considerable flexibility to fishing tilefish operations as fishermen would be allowed to expand or contract fishing capabilities by leasing annual IFQ allocations. The premium received for private transactions of annual IFQ allocations will be inversely related to the restrictions placed on their leasing. This alternative would maximize the universe of people eligible to participate in the IFQ market to the highest level. The discussion regarding the use of an IFQ Transfer Form for transferability purposes discussed in section 5.2.B also apply here.

It is important to mention that IFQ sub-leasing will not be allowed under the proposed IFQ system. That is, an IFQ allocation can not be leased more than once during a fishing year. The Regional Administrator (March 24, 2008 letter from Pat Kurkul to Pete Jensen) has indicated that sub-leasing may require a new management system that may be

administratively prohibitive. Furthermore, the Regional Administrator has indicated that she would "support a provision that would allow a lease to be voided in the event an emergency renders a lessee unable to fish, but only in the case where no allocation was fished pursuant to the lease." In addition, at the April 2008 Council meting, some industry members indicated that they did not see the prohibition of sub-leasing as an issue that would impede the functioning of an IFQ system for the tilefish fishery. Nevertheless, the Council believes that if new management systems that are not administratively prohibitive become available in the future, and the Council finds it necessary to implement sub-leasing in the tilefish fishery in order to improve the management of the IFQ system, then this could be addressed via the framework adjustment process (i.e., transferability rules).

5.3.C Alternative 3C: Only tilefish IFQ shareholders would be permitted to lease annual IFQ allocations during the first five years of the IFQ program and other individuals thereafter

Under this alternative IFQ shares would be leased for the first five years of the IFQ program among tilefish IFQ shareholders that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel. This alternative is believed to be equitable because it initially favors commercial tilefish fishermen who have invested time and resources into the fishery, but ultimately recognizes tilefish as a public resource and allows other individuals to participate in the fishery as long as they meet the requirements under the reauthorized MSFCMA. The discussion regarding the use of an IFQ Transfer Form for transferability purposes discussed in section 5.2.B also apply here. The discussion regarding sub-leasing presented in section 5.3.B also apply here.

5.3.D Alternative 3D: Only tilefish IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit would be permitted to lease annual IFQ allocations

Under this alternative annual IFQ allocations would be leased among tilefish IFQ shareholders or tilefish limited access permit holders that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel as long as they meet the requirements under the reauthorized MSFCMA. The quota monitoring provisions discussed in section 5.3.B above also apply here.

This alternative would give preference to IFQ shareholders and tilefish limited access commercial permit holders to lease annual IFQ allocations. Under this alternative, IFQ shareholders could expand fishing operations and tilefish limited access commercial permit holders would be able to participate in the fishery via the leasing process. This alternative would limit the universe of people eligible to participate in the IFQ market to a very low level. The discussion regarding the use of an IFQ Transfer Form for transferability purposes discussed in section 5.2.B also apply here. The discussion regarding sub-leasing presented in section 5.3.B also apply here.

5.3.E Alternative 3E: Only tilefish permit holders (IFQ shareholders or limited access permit holders) or established tilefish fishermen (i.e., captain, mates, and deckhands) would be permitted to lease annual IFQ allocations

Under this alternative annual IFQ allocations can be leased among IFQ shareholders or tilefish limited access permit holders or established tilefish fishermen that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel as long as they meet the requirements under the reauthorized MSFCMA. The quota monitoring provisions discussed in section 5.3.B above also apply here.

This alternative would give preference to IFQ shareholders, tilefish limited access commercial permit holders, and established tilefish fishermen to lease annual IFQ allocations. Under this alternative, IFQ permit holders could expand fishing operations and tilefish limited access commercial permit holders and established fishermen would be able to participate in the fishery via the leasing process. This alternative would limit the universe of people eligible to participate in the IFQ market to a very low level.

This alternative would allow established tilefish fishermen (i.e., captain, mates, and deckhands) to lease annual IFQ allocations, thus creating opportunities for individuals involved in the tilefish fishery not having initial IFQ share or IFQ quota share to participating in the fishery as IFQ lease holders in the future (as long as they meet the requirements under the reauthorized MSFCMA). However, it may be difficult to determine who is an established fisherman. Due to the complexities involved in this alternative it is anticipated that the administrative burden to NMFS may be prohibitively high as there is currently no similar program that verifies persons identities and work histories. The potential for fraud are both high under this alternative. The discussion regarding the use of an IFQ Transfer Form for transferability purposes discussed in section 5.2.B also apply here. The discussion regarding sub-leasing presented in section 5.3.B also apply here.

5.4 IFQ share accumulation

In regards to share accumulations, the National Research Council recommended that "Congress should require any council considering an IFQ program to define “excessive share” for the program and use limits on accumulation of quota share or other measures to prevent excessive shares from developing" (NRC 1999, p. 6). Under this section "IFQ share accumulation" refers to the accumulation of shares upon the implementation of the IFQ system; and accumulation of shares under IFQ transferability of ownership, as well as accumulation of shares that are leased or otherwise "temporarily" transferred. Regarding share accumulation, section 303A(c)(5)(D) of the 2006 reauthorized Magnuson-Stevens Act states that IFQ privilege programs should ensure that limited access privilege holders do not acquire an excessive share of the total limited access privileges in the program by: 1) establishing a maximum share, expressed as a percentage of the total limited access privileges, that a limited access privilege holder is permitted to hold, acquire, or use; 2) establishing any other limitations or measures necessary to

prevent an in equitable concentration of limited access privileges; and 3) authorize limited access privileges to harvest fish to be held, acquired, used by, or issued under the system to persons who substantially participate in the fishery, including in a specific sector of such fishery, as specified by the Council.

Consolidation occurs when the shares needed to harvest fish become concentrated in the hands of fewer and fewer participants. Consolidation could lead to positive economic development and may be considered a rational outcome when a resource can be sold. Nevertheless, it might result in only a few participants enjoying the benefits of this public resource, as the price of shares goes up and smaller operators may not be able to afford to buy their way into the fishery. It is possible that in some cases, these smaller operators might lease shares and become economically dependent on absentee owners.

The initial amount of IFQ quota share that an individual/entity owns will be assessed as "the amount of IFQ shares that an individual/entity owns and/or has interest in". An individual/entity cannot accumulate IFQ shares above the maximum amount of shares that can be accumulated. If an individual/entity is initially allocated an amount of shares due to historical participation that is above the chosen limit for IFQ accumulation, then the amount initially allocated above the IFQ share accumulation ceiling must be sold. In addition, individual/entities must report on a yearly basis all tilefish ownership interest for purposes of determining overall share accumulation. The Council is considering imposing caps on the number of shares each individual, corporation, or other entity may hold in the proposed IFQ system to limit consolidation. The IFQ share cap cannot be exceeded by IFQ allocations that are temporarily transferred (lease).

The primary purpose of the IFQ program is to reduce overcapacity in the commercial tilefish commercial fishery, codify existing quota sharing agreements that already exist in the full-time tier 1 permit category, and to eliminate, to the extent possible, the problems associated with derby fishing, in order to assist the Council in achieving optimum yield from the fishery, as required by the Magnuson-Stevens Act. As previously indicated, the management measures presented in this amendment provide a range of alternatives that would allow for these objectives to be met while preserving the long-term economic viability of the fishery and maintaining the social structure and historical fishery participation.

5.4.A Alternative 4A: No Action (IFQ share accumulation would not be limited)

Under this alternative IFQ share accumulation would not be restricted. Therefore, it would allow individuals and/or entities to accumulate as much of the TAL as they wish.

5.4.B Alternative 4B: Limit IFQ share accumulation to 49 percent of the TAL [Preferred Alternative]

Under this alternative the IFQ share accumulation would be set at 49 percent of the TAL allocated to the IFQ program (after adjustments for incidental catch, research asset-aside, and/or overages have been made). This alternative would allow for an IFQ share

accumulation greater than the largest yearly landings by an individual tilefish vessel for the 1988 through 1998 period. As indicated before, historical landings for the 1988 through 1998 period were used to determine the initial commercial quota allocations under the FMP (see footnote 3).

If the initial IFQ share allocation for any given person or entity is higher than the selected percent accumulation cap, then the excess shares associated with the initial allocation must be divested within 180 days after the implementation of the IFQ system. It is important to mention that forcing IFQ shareholders to sell excess shares within 180 days may produce undesirable dynamics in share price depending on demand.

5.4.C Alternative 4C: Limit IFQ share accumulation to 37 percent of the TAL

Under this alternative the IFQ share accumulation would be set at 37 percent of the TAL allocated to the IFQ program (after adjustments for incidental catch, research asset-aside, and/or overages have been made). This alternative would allow for an IFQ share accumulation equal to the largest yearly landings by an individual tilefish vessel for the 1988 through 1998 period. As indicated before, historical landings for the 1988 through 1998 period were used to determine the initial commercial quota allocations under the FMP (see footnote 3).

If the initial IFQ share allocation for any given person or entity that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel is higher than the 37 percent accumulation cap under this alternative, then the excess shares associated with the initial allocation must be divested within 180 days after the implementation of the IFQ system.

5.4.D Alternative 4D: Limit IFQ share accumulation to 25 percent of the TAL

Under this alternative the IFQ share accumulation would be set at 25 percent of the TAL allocated to the IFQ program (after adjustments for incidental catch, research asset-aside, and/or overages have been made). This alternative was included to provide a reasonable range of IFQ share accumulation alternatives.

If the initial IFQ share allocation for any given person or entity that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel is higher than the 25 percent accumulation cap under this alternative, then the excess shares associated with the initial allocation must be divested within 180 days after the implementation of the IFQ system.

5.4.E Alternative 4E: Limit IFQ share accumulation to 16.5 percent of the TAL

Under this alternative the IFQ share accumulation would be set at 16.5 percent of the TAL allocated to the IFQ program (after adjustments for incidental catch, research asset-aside, and/or overages have been made). This value represents the largest TAL allocation to an individual permit category (full-time tier 1; 66% of the adjusted TAL) divided by

the number of vessels originally permitted to participate in that permit category (4 vessels).

If the initial IFQ share allocation for any given person or entity that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel is higher than the 16.5 percent accumulation cap under this alternative, then the excess shares associated with the initial allocation must be divested within 180 days after the implementation of the IFQ system.

5.4.F Alternative 4F: Considered but rejected for further analysis - Limit IFQ share accumulation to 66, 15, and 19 percent of the TAL for full-time tier 1, full-time tier 2, and part-time IFQ permit holders, respectively

Under this alternative the IFQ share accumulation is set at 66, 15, and 19 percent of the TAL (after adjustments for incidental catch, research asset-aside, and/or overages have been made) for full-time tier 1, full-time tier 2, and part-time IFQ permit holders, respectively. This alternative would result in share accumulation that surpasses per vessel landings historical highs. This alternative was rejected from further analysis because it was considered to allow for excessive share accumulation.

5.5 Commercial Trip Limits

As described in detail in section 4.2, the FMP does not address how the quota is to be distributed among vessels within each of the three fishing categories. However, individuals in the full-time tier 1 category have developed a system to further allocate the overall tier 1 allocation to vessels within that category. That is, the tier 1 participants determine among themselves how to control their fishing effort as a means to improve the viability of the fishery and secure their livelihoods. According to stakeholders, this "cooperative understanding"[16] has allowed full-time tier 1 participants to spread landings throughout the year to maximize their performance. More specifically, by cooperating, tier 1 participants decide at the vessel level when to fish, how much to fish (they divide the quota amongst the tier 1 participants), and when to land the fish harvested in order to maximize ex-vessel price (by avoiding market gluts and spreading landings throughout the year). Typically, no more than one tier 1 participant will land each week, thus, maximizing process and extending the tilefish season throughout the year. While, tier 1 participants do not impose trip limits *per se*, allowing only one vessel to land per week acts a trip limit as the amount of fish that can be landed per week is artificially limited.

However, according to stakeholders, individuals participating in the full-time tier 2 and part-time categories have not implemented a "cooperative understanding" such as the one developed by full-time tier 1 participants. In fact, the full-time tier 2 category closed early in 2005 and 2006 and the part-time category had early closures in 2002, 2004, 2005, and 2006. Trip limits are an alternative to a "cooperative understanding" that would likely

[16] For a detailed description regarding the evolution of collaborative management in the tilefish fishery see: Andrew Kitts et al, The evolution of collaborative management in the Northeast USA tilefish fishery. Marine Policy 2007; 31:192-200 (see Appendix C).

allow for tilefish landings to spread throughout the season for categories that have experienced early closures.

5.5.A Alternative 5A: No Action (Maintain status quo management regarding trip limits) [Preferred Alternative]

Under this alternative trip limits would not be implemented for non-incidental tilefish permit holders. However, the previously established 300 pounds per trip limit for the incidental category would continue.

5.5.B Alternative 5B: If an IFQ system is not implemented for the part-time permit category, then a 15,000 pounds tilefish trip limit would be implemented for that permit category

Under this alternative a 15,000 pounds trip limit would be implemented for the part-time permit category in the case that an IFQ program is not implemented for that permit category. This trip limit may be adjusted, downward or upward, at any time, outside of a quota specification or framework process by the Regional Administrator if the trip limit is prohibiting the fishery from operating efficiently. This alternative would likely help to avoid potential early closures for that component of the fishery. Part-time category stakeholders have indicated that a 15,000 pound limit would allow them to continue to fish at a profitable level without saturating the market with product, and at the same time extending the fishing season.

Under this alternative the Regional Administrator would have the flexibility to reduce the tilefish trip limits under rulemaking consistent with the Administrative Procedures Act if 80 percent of the quota for the category is attained or forecasted to be attained. This alternative would provide a useful tool that can be exercised at the discretion of the Regional Administrator in order to prevent potential overages and early closures in the part-time permit category.

5.6 Fees and Cost Recovery

NMFS is required under the MSFCMA to collect fees to recover the costs directly related to management, data collection and analysis, and enforcement of IFQ programs. Under section 304(d)(2)(A) of the Act, the Secretary is authorized to collect a fee to recover these costs. The fee shall not exceed 3-percent of the ex-vessel value of fish harvested. Up to 25-percent of the fees collected can be used for purchasing quota for small-vessel fisherman or quota for new entrants into the fishery. In addition, up to 0.5 percent of the value of the IFQ can be collected upon registration and transfer of the title of a permit (section 305(h)(5)(A)). The IFQ fees collected would be deposited in the Limited Access System Administrative Fund (LASAF) established in the U.S. Treasury. Up to 25 percent could be deposited separately in the U.S. Treasury and made available to cover the costs of the IFQ loan program, as required by paragraph 303(A)(g) of the Magnuson-Stevens Act. Separate accounts would be created within the LASAF to ensure that the funds from the IFQ cost recovery are used only to pay for the actual costs directly related to

management, data collection and analysis, and enforcement costs of the NMFS Northeast Region Tilefish IFQ Program.

5.6.A Alternative 6A: No Action (Fees and cost recovery would not be collected if an IFQ program is implemented)

Under this alternative, fees and cost recovery would not be implemented if an IFQ program is put in place for the commercial tilefish fishery. This alternative would be contrary to the Congressional mandate to collect fees for IFQ programs as specified in the Magnuson-Stevens Act.

5.6.B Alternative 6B: IFQ shareholder directly pays [Preferred Alternative]

5.6.B.0 Alternative 6B

Alternative 6B would implement a fee collection system based upon the NMFS Alaska Region Halibut/Sablefish Fishery Management Plan model. An IFQ permit holder would incur a cost recovery fee liability for every pound of IFQ tilefish that he or she lands. The IFQ permit holder would be responsible for self-collecting his or her own fee liability for all his or her IFQ tilefish landings. The IFQ permit holder would be responsible for submitting this payment to NMFS at the end of the fishing season or in the last quarter of the calendar year in which the landings were made. The dollar amount of the fee due would be determined by multiplying the IFQ fee percentage (using a default rate of 3-percent) by the actual ex-vessel value of each IFQ landing made on a permit. However, preliminary analyses show that management, enforcement, and data collection cost would be approximately $94,000 (the equivalent of a 2-percent fee), thus for the purpose of discussion a 2-percent fee is compared to the default 3-percent fee.

The Regional Administrator would review the cost recovery fee annually to determine if adjustment is warranted. Factors considered in the review include the catch subject to the IFQ cost recovery, projected ex-vessel value of the catch, costs directly related to the management, enforcement, and data collection of the IFQ program, the projected IFQ balance in the LASAF, and expected nonpayment of fee liabilities. If the Regional Administrator determines that a fee adjustment is warranted, the Regional Administrator would publish a notification of the fee adjustment in the Federal Register.

5.6.B.1 Fee Determination and Responsibilities

Three percent of the ex-vessel value of fish harvested under an IFQ program is the maximum fee amount allowed by section 304(d)(2)(B) of the Magnuson-Stevens Act. This alternative would allow the Regional Administrator to reduce the fee percentage if actual management, enforcement, and data collection costs could be recovered through a lesser percentage. NMFS will not know the actual annual costs of the IFQ Program until after the end of the tilefish fishing year (October 31). After that time, the Regional Administrator could reduce the fee percentage for that year to reflect more closely the actual IFQ-related management, enforcement, and data collection costs for the past fishing year. However, in order to budget, fishermen need to know at the time of sale the maximum fee percentage that could apply to their IFQ landings made from November 1

(season opening) through October 31 (season end). This alternative would set the applicable fee percentage at 3 at the start of each fishing year but would allow the Regional Administrator to reduce the fee percentage if management, enforcement, and data collection costs could be recovered for a lesser percentage. Because fees are not due until the end of the fishing season or in the last quarter of the calendar year in which the landings were made, NMFS believes that for budget purposes it is preferable to establish a 3–percent fee that could be adjusted downward, based upon certain types of information, between November and March to reflect the actual costs incurred during the previous fishing year. NMFS would encourage IFQ permit holders to set aside the amount of the fees throughout the fishing year in order to facilitate payment at the end of the fishing season or in the last quarter of the calendar year in which the landings were made. Early payments would be allowed but would not relieve a permit holder of associated reporting requirements.

5.6.B.2 Calculating Ex-vessel Value

The ex-vessel value of an IFQ landing would equal the sum of all payments of monetary worth made to fishermen for the sale of the fish. This would include any retro-payments (e.g., bonuses, delayed partial payments, post-season payments) made to the IFQ permit holder for previously landed tilefish. Retro-payments would be part of the ex-vessel value and as such have a fee liability. If they were received after the initial payment, but during the same fishing year, the cost recovery fee for those retro-payments also would be due at the end of the fishing season or in the last quarter of the calendar year in which the landings were made.

5.6.B.3 Actual Ex-vessel Value

Throughout this discussion, ‘‘value’’ refers to the worth, in U.S. dollars, of any amount of landed IFQ tilefish as determined by the sale, or potential economic return for the sale, of those fish. ‘‘Price’’ is the worth in U.S. dollars, for 1 lb (approximately 0.45 kg) of landed IFQ fish. Therefore, in this context, value and price only mean the same thing when describing the worth of 1 lb (approximately 0.45 kg) of IFQ fish when sold. For purposes of calculating IFQ cost recovery fees, NMFS would utilize actual ex-vessel value. Actual ex-vessel value would be the amount of money an IFQ permit holder received as payment for his or her IFQ fish sold as reported by a federally permitted dealer. In other words, this ex-vessel value amount will not be averaged with the other dealer prices for the purpose of calculating cost recovery fees.

5.6.B.4 Fees Based on Actual Ex-vessel Value

Under this alternative, the actual value of landed IFQ fish would be determined when tilefish are actually sold. The IFQ permit holder could calculate his or her fee liability for landed fish based on the actual monetary value received and reported to NMFS by the dealer. The fee amount would be the product (in U.S. Dollars) of multiplying that actual ex-vessel value by the fee percentage (0.03). The following example shows how an IFQ permit holder would adjust the calculation by NMFS of fee liabilities.

5.6.B.5 Example of Actual Ex-vessel Value Determination

An IFQ fisherman makes a landing of IFQ tilefish in June that results in a debit of 10,000 lb (4,536 kg) whole (live) weight from his or her tilefish IFQ permit. He or she sells all the fish to a federally permitted dealer. The dealer reports the landing as either whole or gutted (dressed) to NMFS. If the landed fish are sold gutted then NMFS will convert the ITQ landings to whole (live) weight via the standard conversion factor of 1.09 for the purposes of monitoring the IFQ quota. With an IFQ fee percentage of 3-percent and an actual price of $1 pound, the IFQ permit holder would bear a total fee liability of $300.00 for the landing, determined as follows: (Tilefish Landed Weight X Price per lb) X Fee Percentage = Permit Holder Fee (10,000 lb X $1.00 lb) X 0.03 = $300.00. The permit holder fee would be $200.00 under a 2-percent fee and other assumptions presented above.

The IFQ permit holder's fee liability would be based only on the actual price paid by the dealer regardless if the product was landed whole or gutted. The conversion to whole weight by NMFS is only for the purposes of monitoring IFQ landings, not fees.

5.6.B.6 Fee Payment Procedure

NMFS will mail a bill for the IFQ for the fishing year to each IFQ permit holder. Bills may also be made available electronically via the internet. Payment of the IFQ fee must be made at the end of the fishing season or in the last quarter of the calendar year in which the landings were made. Payments of the IFQ fee must be made electronically via the Federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator. The reason for the 100-percent electronic fee collection system is to minimize paper transactions, and is due to the fact that at the present time the NMFS Northeast Regional Office is not equipped to process paper collections. Instructions for electronic payment will be made available on both the payment website and the paper bill. Payment options will include payment via a plastic card (e.g. Visa, MasterCard, Discover, etc.), or direct ACH (automated clearing house) withdrawal from a designated checking account. Payment by check will be authorized only if the Regional Administrator has determined that the geographical area or an individual(s) is affected by catastrophic conditions.

5.6.B.7 Payment Compliance

An IFQ permit holder who has incurred a fee liability would be required to pay the fee to NMFS at the end of the fishing season or in the last quarter of the calendar year in which the landings were made. If an IFQ permit holder has made a timely payment to NMFS of an amount less than the fee liability NMFS has determined, the IFQ permit holder has the burden of demonstrating that the fee amount submitted is correct. If, upon preliminary review of the accuracy and completeness of a fee payment, NMFS determines the IFQ permit holder has not paid a sufficient amount, NMFS would notify the IFQ permit holder by letter. NMFS would explain the discrepancy and the IFQ permit holder would have 30 days to either pay the remaining amount that NMFS has determined should be paid or provide evidence that the amount paid is correct. If the IFQ permit holder submits evidence in support of his or her payment, NMFS will evaluate it and, if there is any remaining disagreement as to the appropriate IFQ fee, prepare a Final Administrative Determination (FAD). The FAD would set out the facts, discuss those facts within the

context of the relevant agency policies and regulations, and make a determination as to the appropriate disposition of the matter. An FAD would become a final agency action. If the FAD has determined that the IFQ permit holder is out of compliance, the following conditions would exist: the IFQ permit holder could not transfer any IFQ, the IFQ permit holder could not receive IFQ by transfer. An IFQ permit holder could pay, under protest, the disputed fee difference in order to avoid permit transfer restrictions. If the final agency action determines that the IFQ permit holder owes additional fees and if the IFQ permit holder has not paid such fees, all IFQ permit(s) held by the IFQ permit holder will be invalid (would not be re-issued) until the required payment is received by NMFS. If NMFS does not receive such payment within 30 days of the issuance of the final agency action, NMFS would refer the matter to the appropriate authorities within the U.S. Treasury for purposes of collection.

5.6.B.8 Annual IFQ Report

An annual IFQ report for each IFQ shareholder would be generated. The report would include quarterly and annual information regarding the amount and value of IFQ tilefish landed during the fishing year, the associated cost recovery fees, and the status of those fees. This report would also detail the costs incurred by NMFS, including the calculation of the recoverable costs for the management, enforcement, and data collection, incurred by NMFS during the fishing year.

5.6.B.9 Limited Access System Administrative Fund (LASAF)

The IFQ fees collected would be deposited in the LASAF established in the U.S. Treasury. Up to 25 percent could be deposited separately in the U.S. Treasury and made available to cover the costs of the IFQ loan program, as required by paragraph 303(A)(g) of the Magnuson-Stevens Act. Separate accounts would be created within the LASAF to ensure that the funds from the IFQ cost recovery are used only to pay for the actual costs directly related to the management, enforcement, and data collection of the NMFS Northeast Region Tilefish IFQ Program.

5.6.C Alternative 6C: IFQ shareholder pays via a federally permitted dealer

5.6.C.0 Alternative 6C

Alternative 6C would implement an IFQ fee collection system based upon the South Atlantic Red Snapper Fishery Management Plan. Although the ultimate IFQ payment responsibility lies with the IFQ shareholder, this system would require federally permitted dealers to collect the fee from the IFQ shareholder at the point of purchase for later submission to NMFS. Initially, the fee would be 3-percent of the actual ex-vessel value of tilefish landed under the IFQ program, as documented in each landings report submitted by the federally permitted dealer. The Regional Administrator would review the cost recovery fee annually to determine if adjustment is warranted. Factors considered in the review include the catch subject to the IFQ cost recovery, projected ex-vessel value of the catch, costs directly related to the management, enforcement, and data collection of the IFQ program, the projected IFQ balance in the LASAF, and expected nonpayment of fee liabilities. If the Regional Administrator determines that a fee adjustment is

warranted, the Regional Administrator would publish a notification of the fee adjustment in the Federal Register.

5.6.C.1 Fee Determination and Responsibilities

The IFQ allocation holder specified in the documented tilefish IFQ dealer landing report is responsible for payment of the applicable cost recovery fees. A dealer who receives tilefish subject to the IFQ program is responsible for collecting the applicable cost recovery fee for each IFQ landing from the IFQ allocation holder specified in the IFQ landing transaction report. Such dealer is responsible for submitting all applicable cost recovery fees to NMFS on a quarterly basis. The fees are due and must be submitted, using the Federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator, no later than 30 days after the end of each calendar-year quarter; however, fees may be submitted at any time before that deadline. Fees not received by the deadline are delinquent.

5.6.C.2 Calculating Ex-vessel Value

The ex-vessel value of an IFQ landing would equal the sum of all payments of monetary worth made to fishermen for the sale of the fish. This would include any retro-payments (e.g., bonuses, delayed partial payments, post-season payments) made to the IFQ permit holder for previously landed tilefish. Retro-payments would be part of the ex-vessel value and as such have a fee liability. If they were received after the initial payment, but during the same fishing year, the cost recovery fee for those retro-payments also would be due in the quarter inn which they were paid.

5.6.C.3 Actual Ex-vessel Value

Same as outlined in section 5.6.B.3 above.

5.6.C.4 Fees Based on Actual Ex-vessel Value

Same as outlined in section 5.6.B.4 above.

5.6.C.5 Example of Actual Ex-vessel Value Determination

Same as outlined in section 5.6.B.5 above.

5.6.C.6 Fee Payment Procedure

For each IFQ dealer, NMFS would make available, an end-of-quarter statement of cost recovery fees that are due. The dealer is responsible for submitting the cost recovery fee payments using the Federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator. Authorized payments methods are credit card, debit card, or automated clearing house (ACH). Payment by check would be authorized only if the Regional Administrator has determined that the geographical area or an individual(s) is affected by catastrophic conditions.

5.6.C.7 Payment Compliance

The following procedures would apply to an IFQ dealer whose cost recovery fees are delinquent.

(A) On or about the 31st day after the end of each calendar-year quarter, the Regional Administrator would notify the dealer indicating the applicable fees are delinquent; the dealer's permit has been suspended pending payment of the applicable fees; and notice of intent to cancel the dealer's Federal permit.

(B) On or about the 61st day after the end of each calendar-year quarter, the Regional Administrator would mail to a dealer whose cost recovery fee payment remains delinquent, official notice documenting the dealer's Federal permit has been cancelled.

(C) On or about the 91st day after the end of each calendar-year quarter, the Regional Administrator would refer any delinquent IFQ dealer cost recovery fees to the appropriate authorities for collection of payment.

5.6.C.8 Annual IFQ Report
An annual IFQ report for each IFQ shareholder and participating dealer would be generated. The report would include quarterly and annual information regarding the amount and value of IFQ tilefish received by the dealer, the associated cost recovery fees, and the status of those fees. This report would also detail the costs incurred by NMFS, including the calculation of the recoverable costs for the management, enforcement, and data collection, incurred by NMFS during the fishing year. The dealer's acceptance of this report constitutes compliance with the annual dealer IFQ reporting requirement.

5.6.C.9 LASAF
Same as outlined in section 5.6.B.9 above.

It is important to mention that while alternatives 6B and 6C would impose an initial default fee and cost recovery rate of 3-percent, this rate may change in subsequent years if the fee and cost recovery is lower than initially assessed.

5.7 IFQ Program Review Process

5.7.A Alternative 7A: No Action (Review of the IFQ program during a specific timeframe period would not be implemented)

Under this alternative, setting a timeframe period to review of the IFQ program after implementation would not be required. This alternative would be in violation of the MSFCMA.

5.7.B Alternative 7B: Allow for a formal and detailed review of the IFQ program five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years) [Preferred Alternative]

The reauthorized Magnuson-Stevens Act of 2006 established national guidelines for the implementation of LAP programs. Section 303A(c)(G) of the Act "include provisions for the regular monitoring and review by the Council and the Secretary of the operations of

the program, including determining progress in meeting the goals of the program and this Act, and any necessary modification of the program to meet those goals, with a formal and detailed review five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every 7 years)". This alternative would provide for an enforceable provision for regular review and evaluation of the performance of the IFQ program as described in the above.

The following measures may be reviewed or examined five years after implementation of the IFQ program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years). For example, the measures for review may include but not be limited to: capacity reduction, safety at sea issues, transferability rules, ownership concentration caps, permit and reporting requirements, and fee and cost recovery issues. Other items may be added to address problems and/or concerns unforeseeable at this time. The formal review may be conducted/facilitated by the MAFMC (e.g., Council Staff, MAFMC Scientific and Statistical Committee, and/or externally contracted review with independent experts).

In order to facilitate any necessary modifications of the program if needed, the Council recommends adding the specific IFQ measures mentioned in the prior paragraph to the list of management actions that could be implemented via the framework adjustment process (alternative 5.15). This action is needed as a means to address specific IFQ measures through a framework adjustment procedure.

5.7.C Alternative 7C: <u>Considered but rejected for further analysis</u> - Develop a system for review of the IFQ program such as fixed-term, cascading entitlements

This alternative would allow for a review of the IFQ system comparable to the drop-through system approach proposed in the New South Wales fishery (Australia) that creates a cascade of fixed-term privileges for quota shareholders to allow the introduction of new management measures if necessary (NRC 1999). This concept basically provides a guarantee of certain fishing privileges along with the duties and responsibilities associated with them for a fix period long enough to encourage investment (e.g., 30 years). Periodically (e.g., every 10 years) managers comprehensively review the system and if necessary produce a new set of entitlements which would also have a similar duration period (e.g., 30 years) as the original entitlement. The new set of entitlements may be similar but not necessarily identical to the previous entitlement. At that time, stakeholders can decide if they want to trade in the 30 year entitlement (with 20 years left of the original entitlement) or they can move to the new set of entitlements containing the improvements incorporated into the system. The TFMAT viewed this alternative as too complicated and tedious for managers and stakeholders to implement.

5.8 IFQ Reporting Requirements

5.8.A Alternative 8A: No Action (Maintain status quo reporting requirements)

Reporting requirements for the tilefish fishery would remain as they are currently. IFQ landings made via the IVR system would be separated from any non-IFQ landings by the vessel's Federal permit number.

5.8.B Alternative 8B: Facilitation of an IFQ system administration if an IFQ program is implemented [Preferred Alternative]

Under this alternative, changes to the current data base system to support possible IFQ reporting requirements would be evaluated. This would include how to identify landings under an IFQ system. The development of such a system will depend on alternatives chosen. Items may include trip identification required on dealer reports, IVR, and VTR submissions, documentation of all business entities in which the IFQ owner has an interest (for the monitoring of ownership concentration), documentation of U.S. citizenship or permanent resident alien, items facilitating the recovery of IFQ management, data collection and analysis, and enforcement costs, and other documents to verify IFQ ownership eligibility.

Under alternative 8B, a trip identifier would be mandatory in order to match all reported IVR landings to the dealer repots. This would allow for all IVR data to match dealer (weighout) data on a trip-by-trip basis. In addition, the dealer number would also need to be recorded into the IVR to have vessels report pounds by dealer on the IVR.

GENERAL REPORTING REQUIREMENTS

5.9 IVR Reporting Requirements

The current Tilefish FMP requires that the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 24 hours after returning to port and offloading[17] as required by the Regional Administrator. According to industry members, not all landings are reported within the 24 hour period as required under current regulations. Some stakeholders have commented that they should only report landings via IVR once they know for sure how much fish they have in the hold and this can only be reported accurately once the fish has been packed out. In addition, industry members have also indicated that if they report landings after reaching port but before the fish has been packed-out, the catch estimates can be off by as much as 1,500 pounds.

[17] In accordance to 50 CFR Part 648.2 definitions, *Land* means to begin offloading fish, to offload fish, or to enter port with fish. *Offload* or *offloading* means to begin to remove, to remove, to pass over the rail, or otherwise take away fish from any vessel. These definitions can be reviewed on line at: http://www.nero.noaa.gov/nero/regs/the6481.htm.

5.9.A Alternative 9A: No Action (Maintain the status quo reporting of tilefish landings under the current IVR system)

Under this alternative, reporting of golden tilefish landings using the IVR system as described in the FMP would continue. Therefore, the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 24 hours after returning to port and offloading as required by the Regional Administrator. This alternative would not solve the landings reporting problem identified under the current reporting system. Therefore, it is possible that some fishermen would continue to report after fish has been packed-out which could occur 24 hours or more after returning to port.

Under the current system, full-time tier 1, full-time tier 2, and part-time tilefish limited access vessels report their landings using a touch-tone telephone. Callers access this system through a toll-free number and enter data using a confidential and unique access code. The IVR system is designed to allow vessels to report tilefish landings for each trip (negative report for tilefish thought the IVR system is not required). Reports to the NMFS IVR system must include: 1) permit number; 2) vessel's password/code, and 3) pounds of golden tilefish landed.

5.9.B Alternative 9B: The owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 48 hours after offloading fish [Preferred Alternative]

Under this alternative, tilefish catch reports would be submitted within 48 hours after offloading. This alternative would allow for tilefish fisherman to report catch via the IVR system right after the fish has been weighted and thus allowing for an accurate report of landings via IVR. In addition, this alternative would allow fishermen for more time to report tilefish landings in the event that the IVR system is down. This alternative is expected to allow fishermen to provide better data and may be more enforceable.

The basic reporting requirements under the current IVR system are described above under alternative 9A. The current system does not allow fishermen to cross-verify entered data and make corrections if needed. Under this alternative, the IVR system would be slightly modified to allow fishermen to review and if needed edit and modify errors in entered data (i.e., vessel permit number, vessel’s password/code) before exiting the IVR call-in system. Allowing fishermen to check and correct information submitted via the IVR system is expected to provide better data for management purposes.

5.10 Commercial Vessel Logbook Reports

Tilefish fishermen currently use paper logbooks to report fishing activity. Stakeholders and scientists have suggested that the paper logbooks are generic and do not allow for the collection of detailed information on a haul-by-haul basis which is needed to more accurately determine catch per unit effort in the fishery. Commercial catch per unit effort

is the only index of abundance available for the tilefish stock. Spatially explicit haul based data is needed to refine and improve the tilefish stock assessment.

5.10.A Alternative 10A: No Action (Maintain the status quo reporting of tilefish landings under the current logbook record keeping system)

This alternative is no longer relevant as two alternatives (alternatives 10B and 10C) to the current system were considered but rejected for further analysis (see bellow).

5.10.B Alternative 10B: Considered but rejected for further analysis - Exempt longline tilefish vessels from current logbook record keeping requirements (VTR) and implement a specific logbook system for those longline vessels

This alternative would require that a specific logbook reporting system be created for tilefish longline vessels to report landings. Currently, tilefish vessels report landings using VTR logbooks. As such, vessels are required to submit one logbook sheet per fishing trip. However, if tilefish longline vessels were required to report landings on paper logbooks on a haul-by-haul basis, then approximately 9 to 12 logbook sheets would have to be submitted per trip given current fishing practices (i.e., 3 to 4 fishing days trip; 3 hauls per day).

While this alternative would require that detailed information on a haul-by-haul basis be reported, it may also prove to be too burdensome for all the parties involved. That is, fishermen would have to submit a larger amount of logbook sheets per trip increasing not only reporting requirements but potentially increasing mistakes during data reporting and processing. This alternative would also require substantial changes and expenses to modify the current electronic system used by the NMFS to capture VTR logbook data.

In addition, the NMFS is currently working to develop the necessary systems and procedures to implement an electronic reporting system for commercial landings (see alternative 5.10.C below). It is expected that when the necessary system and procedures to implement such a system are in place, NMFS may require that they are used in several fisheries as currently authorized by Federal regulations. The NMFS has stated that they expect to have an electronic VTR system up and running by late 2008 (Brian Hooker pers. comm. 2007). When the IVR electronic system is implemented, it will contain data collection methods that can better collect data for tilefish stock assessment purposes.

5.10.C Alternative 10C: Considered but rejected for further analysis - Implement an electronic reporting system for commercial landings

Under this alternative, tilefish landings would be reported electronically via VMS or other combination of technologies. The potential exists for all trip data to be entered at sea and transmitted in real time using a VMS unit. Under this alternative fishing activity would be reported electronically instead using the paper logbooks currently used to report such activity. Reporting fishing activity information via electronic means would enhance the collection of information for management purposes. The potential exists for all trip

data to be entered at sea and transmitted in real time thorough a VMS unit. An electronic logbook system would need to include data entry, the ability to edit and correct errors in data already submitted, the ability to certify that the data submitted is correct, and finally to print out reports of your data for your own records. It is possible that NMFS' implementation of vessel electronic reporting would allow for some data to be captured automatically from VMS units, such as fishing location, and for the remaining of the data to be entered at sea or when the vessels has docked.

In addition, there is the possibility to electronically report fishing activity on a haul-by-haul basis. This would greatly enhance the quality and collection of data for stock assessment purposes. For example, more detailed information on a haul-by-haul basis could be collected and used to more accurately determine catch per unit effort in the tilefish fishery. Commercial catch per unit effort is the only index of abundance available for the tilefish stock. Spatially explicit haul based data is needed to refine and improve the tilefish stock assessment. The more detailed haul-by-haul fishery dependent data is needed for the tilefish stock assessment since a program to collect fishery independent tilefish data does not exist.

Currently, the NMFS is not ready to collect and process the type of electronic reporting described above. However, the service is working to develop the necessary systems and procedures to implement such data collection. Under the current regulations[18] the Regional Administrator already has the authority to implement electronic reporting systems, and as such, this alternative is not needed. It is expected that when the necessary system and procedures to implement such a system are in place, NMFS may require that they are used in several fisheries as currently authorized by Federal regulations. The NMFS has stated that they expect to have an electronic VTR system up and running by late 2008 (Brian Hooker pers. comm. 2007).

<u>GEAR RESTRICTIONS</u>

5.11 Hook Size Restriction

5.11.A Alternative 11A: <u>Considered but rejected for further analysis</u> - Implement minimum hook size restriction in the commercial fishery

Under this alternative, a minimum hook size would be imposed where hooks smaller than the minimum would not be allowed on the tilefish vessel. It is believed that increases in hook size from what is currently in use would allow the longline fishery to avoid small fish. Studies have shown that hook size affects size selectivity in longline fisheries worldwide. However, a specific study is needed to determine hook size selectivity in the tilefish fishery, and to determine and account for catch rate changes with hook size in the

[18] As specified under the specific regulations regarding record keeping and reporting requirements at 50CFR Part 648.7(b) these regulations can be found at: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;sid=190db7713bfba27f6fed2044afc170d5;rgn=div5;view=text;node=50%3A8.0.1.1.6;idno=50;cc=ecfr#50:8.0.1.1.6.1.1.7

commercial CPUE. This is important to determine because CPUE is the only abundance index available for stock assessment.

Industry members have reported that tier 1 vessels have increased the hook size to avoid smaller tilefish. In fact, the Montauk tilefish fishing fleet is currently using 13/0 circle hooks, while the New Jersey fleet is using hooks one size smaller (L. Nolan pers. comm. 2006). It is believed that increases in hook size would allow the longline fishery to avoid small fish. However, no quantifiable scientific study data are currently available to support this assertion. The industry is interested in documenting benefits associated with a minimum hook size and the Council may consider this measure in the future. However, given the fact that no quantifiable scientific study data are currently available to support this measure, it was not further analyzed.

Scientists at the NEFSC and Council staff hoped to conduct a hook size selectivity study in 2006 with industry assistance. However, due to lack of funds the research work was not conducted. The NEFSC and the Council will continue to work toward securing funding to conduct a tilefish hook size selectivity study in the near future.

Tilefish research needs presented in the 41st SAW (Appendix D) suggest that hook size selectivity study is conducted to determine the partial recruitment changes with hook size and to determine the catch rates by hook size. Council staff and NEFSC scientist will continue to work with industry to develop research proposals with industry assistance to conduct this type of research.

Finally, it is important to mention that under the current FMP, hook size management measures can be add or modified under the framework adjustment process as soon as scientific information is available to justify such actions. This adjustment procedure allows the Council to add or modify management measures through a streamlined public review process at any time during the year.

RECREATIONAL FISHING SECTOR

The current FMP regulations allow for tilefish to be harvested by the recreational sector. When the FMP was first developed, the recreational participation in this fishery was very small. As such, recreational management measures were not included in the FMP. However, according to anecdotal information, in recent years there appears to be an increase in the level of recreational interest for this species. Nonetheless, VTR data indicates that for the last decade (1996-2005), the number of tilefish caught by party/charter vessels from Maine through Virginia is low, averaging 444 fish per year. In addition, MRFSS data indicates that for the 2000 through 2005 period, only 2 trips in had tilefish reported as the primary target species (see section 6.1).

In this section, various recreational party/charter permits and reporting requirements for the party/charter fishery are addressed. The reauthorized Magnuson-Stevens Act of 2006 mandates that the Secretary of Commerce establishes a regional based registry program for recreational fishermen who fish in the EEZ or for anadromous species. The

amendment Act also requires the registration of vessels in such fisheries as appropriate. The registry will assist NMFS to build complete, up-to-date telephone/address directories of marine recreational fishery participants that can be utilized in efficient, and cost-effective surveys of recreational fishing effort and, ultimately catch. It is expected that this initiative will support more complete and efficient survey coverage of recreational participants which could be used to enhance management activities in the recreational fishery. NMFS will be developing a federal program in the near future. As such, specific program management models for the private recreational fishery are not further considered in this document.

5.12 Recreational Party/Charter Permits and Reporting Requirements

5.12.A Alternative 12A: No Action (Maintain the status quo permit and reporting requirements for party/charter vessels and operators)

The current tilefish FMP does not contain management measures for the recreational fishery. Under this alternative, the status quo regarding recreational permits and reporting requirements would continue and no permitting and reporting requirements for party/charter vessels and operators would be required.

5.12.B Alternative 12B: Establish a party/charter tilefish vessel permit and party/charter vessel reporting requirements [Preferred Alternative]

Party/Charter Tilefish Vessel Permit

Under this alternative, a permit for the party/charter fishery would be established.

Any owner of a party or charter vessel carrying recreational fishermen for hire to fish for tilefish within the U.S. EEZ (exclusive economic zone) must obtain a party/charter vessel permit from NMFS.

A recreational vessel, other than a party or charter boat (vessel for hire), is exempt from the permitting requirement if it catches no more than the recreational possession limit multiplied by the number of persons on board, of tilefish per trip.

A party/charter boat may have both a party or charter boat permit and a commercial permit to catch and sell tilefish. However, such a vessel may not fish under the commercial rules if it is carrying passengers for a fee. When a party or charter boat is operating as a commercial vessel, the crew size must not be more than 5 when operating as a party boat and not more than 3 when operating as a charter boat.

This alternative would require that party/charter vessels report tilefish landings using logbooks. The collection of this information would provide valuable information to determine the number of vessels and level of activity in the recreational fishery.

Party/Charter Tilefish Operator Permit and Fees

Any individual who operates a party/charter boat for the purpose of fishing recreationally for tilefish (i.e., possesses a valid recreational party/charter permit to fish for tilefish) must have an Operator's Permit issued by NMFS. Any vessel fishing recreationally with a party/charter boat permit must have on board at least one operator who holds a permit. That operator may be held accountable for violations of the fishing regulations and may be subject to a permit sanction. During the permit sanction period, the individual operator may not work in any capacity aboard a federally permitted fishing vessel.

An applicant must apply for a federal vessel permit in writing to the Regional Administrator. The application must be signed by the applicant and submitted to the Regional Administrator at least 30 days before the date upon which the applicant desires to have the permit made effective. Applications must contain the name, principal place of business, mailing address and telephone number of the applicant. The Regional Administrator will notify the applicant of any deficiency in the application. If the applicant fails to correct the deficiency within 15 days following the date of notification, the application will be considered abandoned. Except as provided in Subpart D of 15 CFR Part 904, the Regional Administrator will issue a permit within 30 days of the receipt of a completed application.

Any permit issued under this section remains valid until it expires, is suspended, is revoked, or ownership changes. Any permit which is altered, erased, or mutilated is invalid. The Regional Administrator may issue replacement permits. Any application for a replacement permit shall be considered a new permit. The majority of FMPs administered in the Northeast Region end on April 30 annually. It is the Council's intent to give the Regional Administrator the administrative prerogative to standardize the issuance and renewal of permits.

A permit is not transferable or assignable. It is valid only for the vessel to which it is issued.

The permit must be displayed for inspection upon request by an authorized officer or any employee of NMFS designated by the Regional Administrator.

An operator is defined as the master or other individual on board a vessel who is in charge of that vessel (see 50 CFR 620.2).

The Regional Administrator may suspend, revoke, or modify, any permit issued or sought under this section. Procedures governing permit sanctions or denials are found at Subpart D of 15 CFR Part 904. The Regional Administrator may, after publication of a notice in the Federal Register, charge a permit fee. Within 15 days after the change in the information contained in an application submitted under this section, the vessel issued the permit must report the change in writing to the Regional Administrator.

The federal costs of implementing an annual permit system for the sale of tilefish can be charged to permit holders as authorized by section 303(b)(1) of the Magnuson-Stevens

Act. In establishing the annual fee, the NMFS Regional Administrator will ensure that the fee does not exceed the administrative costs incurred in issuing the permit, as required by section 304(d) of the Magnuson-Stevens Act.

5.13 Recreational Bag-Size Limits

5.13.A Alternative 13A: No Action (Maintain status quo recreational bag-size limits)

Under this alternative, no recreational bag-size limits in the tilefish fishery would take place.

5.13.B Alternative 13B: Establish an 8-fish recreational bag-size limit per person per trip [Preferred Alternative]

Under this alternative, a recreational bag-size limit of 8-fish per person per trip would be implemented in the recreational fishery. VTR data for the 1996 through 2005 period indicates that recreational tilefish landings by party/charter boats have ranged from 81 (1996) to 994 (2003) fish. Mean angler effort onboard party/charter boats have ranged from approximately one fish in most years (1996, 1999-2002, and 2004) to eight fish per angler in 1998. This alternative would set the tilefish recreational bag limit at the upper range of the mean effort seen in the last 10 years.

5.13.C Alternative 13C: Establish a 4-fish recreational bag-size limit per person per trip

Under this alternative, a recreational bag-size limit of 4-fish per person per trip would be implemented in the recreational fishery. This alternative would set the tilefish recreational bag limit at the mid range of the mean effort seen in the last 10 years.

5.13.D Alternative 13D: Establish a 2-fish recreational bag-size limit per person per trip

Under this alternative, a recreational bag-size limit of 2-fish per person per trip would be implemented in the recreational fishery. This alternative would set the tilefish recreational bag limit slightly higher than the lower range (alternative 13E) of the mean effort seen in the last 10 years. This alternative was included to provide a reasonable range of recreational bag-size limit alternatives.

5.13.E Alternative 13E: Establish a 1-fish recreational bag-size limit per person per trip

Under this alternative, a recreational bag-size limit of 1-fish per person per trip would be implemented in the recreational fishery. This alternative would set the tilefish recreational bag limit at the lower range of the mean effort seen in the last 10 years.

5.13.F Alternative 13F: Establish a tilefish recreational bag-size limit of 1-fish per person per trip if future recreational landings go up to 4-percent of the total TAL

Under this alternative, a recreational bag-size limit of 1-fish per person per trip would be implemented in the recreational fishery if in the future recreational landings go up to 4-percent of the total TAL. This value (i.e., 4-percent of the total TAL) was obtained by averaging the three highest years of tilefish recreational landings to total landings (commercial plus recreational; 1975 through 1977 period). A small recreational fishery briefly occurred during the 1970's but subsequent recreational catches have been small. This alternative would automatically set a 1-fish bag limit per person per trip, thus capping recreational landings per angler if the contributions of recreational landings to total landings increase to levels similar to those seen when the recreational fishery was at it's highest level during the 1970's.

MONITORING OF TILEFISH LANDINGS

5.14 Improve Monitoring of Golden Tilefish Landings Caught in the Mid-Atlantic Region

The management unit for this FMP is defined as all golden tilefish under United States jurisdiction in the Atlantic Ocean north of the Virginia/North Carolina border. Tilefish south of the Virginia/North Carolina border are currently managed as part of the Fishery Management Plan for the Snapper-Grouper Fishery managed by the South Atlantic Fishery Management Council.

According to stakeholders, fisherman holding a tilefish Federal permit and a snapper/grouper Federal permit could potentially fish for golden tilefish in the mid-Atlantic and for southern tilefish (south of the Virginia/North Carolina border) on the same trip. If tilefish landings are not properly reported indicating where they came from, the recovery of the stock could potentially be adversely affected. For example, if the amount of golden tilefish is mistakenly underreported on trips where tilefish from both regions are landed, this could adversely affect the recovery strategy for this species as not all golden tilefish landings may be properly reported. On the other hand, if the amount of golden tilefish is mistakenly over reported on trips where tilefish from both regions are landed, this could result in the golden tilefish fishery being closed too early. Therefore it is important to better define where tilefish are caught as fishermen may potentially report landings of tilefish in one region into another region in order to maintain active permit status or avoid more restrictive measures.

5.14.A Alternative 14A: No Action (Maintain the status quo management regarding the catch and reporting of tilefish)

Under this alternative, the existing reporting requirements for golden tilefish in the mid-Atlantic region would continue.

5.14.B Alternative 14B: Implement measures that would allow for golden tilefish caught in the management unit to be landed in the management unit only [Preferred Alternative]

In order to avoid the reporting problems stated in section 5.14, it is required that vessels landing tilefish caught from this management unit must land tilefish in the northeast/mid-Atlantic states of Maine through Virginia and prohibit combination trips in which vessels fish in both management units on the same trip. Dealers issued a tilefish dealer permit must report all fish purchases along with information required at section 648.7 (l)(i). It is expected that these requirements will aid in all tilefish landings being reported in the appropriate management unit were they were caught.

This alternative would likely ensure that golden tilefish landings from Maine through Virginia are properly deducted from the overall golden tilefish TAL.

FRAMEWORK ADJUSTMENT

5.15 Framework Adjustment Process

A framework is an action that adjusts measures within the scope and criteria established by the FMP within a range as defined and analyzed in the FMP. The Tilefish FMP implemented a framework adjustment process that allows management measures to be to added or modified through a streamlined public review process. The framework adjustment process is discussed in sections 1.2.1.3 and 3.1.17 of the FMP. The list of possible management measures to be addressed via the framework adjustment process included in the FMP includes:

Minimum fish size
Minimum hook size
Closed seasons
Closed areas
Gear restrictions or prohibitions
Permitting restrictions
Gear limits
Trip limits
Overfishing definition and related thresholds and targets
Annual specification quota setting process
FMP Monitoring Committee composition and process
Description and Identification of Essential Fish Habitat
Fishing gear management measures that impact EFH
Habitat areas of particular concern
Set aside quota for scientific research

When the FMP was first developed, the recreational participation in this fishery was very small. However, according to anecdotal information, in recent years there appears to be an increase in the level of recreational interest for this species. Therefore, it may be

useful to add recreational measures as frameworkable under the FMP in order to address potential future changes in this fishery in a timely fashion.

In addition, it may be useful to add IFQ measures as frameworkable under the FMP in order to address potential future changes in the IFQ program in a timely fashion. More specifically, the reauthorized Magnuson-Stevens Act of 2006 established national guidelines for the implementation of LAP programs. Section 303A(c)(G) of the Act "include provisions for the regular monitoring and review by the Council and the Secretary of the operations of the program, including determining progress in meeting the goals of the program and this Act, and any necessary modification of the program to meet those goals, with a formal and detailed review five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every 7 years)". This amendment contains management measures that would facilitate the periodic review of the program to assess its progress. However, in order to facilitate any necessary modifications of the program if needed, the Council recommends adding specific IFQ measures to the list of management actions that could be implemented via the framework adjustment process. This action is needed as a means to address specific IFQ measures through a framework adjustment procedure.

5.15.A Alternative 15A: No Action (Maintain the status quo measures that can be added or modified via the framework adjustment process)

Under this alternative, the list of management measures that have been identified in the plan that could be implemented or adjusted at any time during the year would not change. This alternative would not allow recreational management measures or IFQ management measures to be implemented or modified via the framework adjustment process.

5.15.B Alternative 15B: Expand the list of management measures identified to be added or modified via the framework adjustment process to include recreational measures and measures that facilitate the periodic review of the IFQ program [Preferred Alternative]

This alternative would allow for the expansion of the list of management measures that have been identified in the plan that can be implemented or adjusted at any time during the year. The recreational management measures that would be added to the list are: 1) recreational bag-size limit, fish size limit, and seasons; and 2) recreational gear restrictions or prohibitions. The measures to facilitate the periodic review of the IFQ program to be added to the list are: 1) capacity reduction; 2) safety at sea issues; 3) transferability rules; 4) ownership concentration caps; 5) permit and reporting requirements; and 6) fee and cost recovery issues. The inclusion of these measures to the list of measures that can be addressed via the framework adjustment process would provide flexibility to managers to address potential changes in the fishery in a timely manner.

ESSENTIAL FISH HABITAT (EFH) MEASURES

Section 2.8.8 of the FMP indicates that in 50 CFR Part 600.815(a)(11), it is stated that Councils and NMFS should periodically review the EFH components of FMPs, including an update of the fishing impact assessment. During the development of FMP amendments, Councils should review EFH information that has been included in previous FMP amendments and update it if new information is available (MAFMC 2000).

5.16 EFH Designations

5.16.A Alternative 16A: No Action (maintain the status quo EFH designations)

Under this alternative, the EFH designations established under the FMP (MAFMC 2000) for the managed resource would remain unchanged. EFH for tilefish is described using information on habitat requirements (depth temperature and depth ranges) by life history stage that was summarized in the 1999 EFH Source Document for tilefish (Steimle et al. 1999). The following are the existing EFH text descriptions by life history stage for tilefish. This alternative would not alter the current EFH designations (text descriptions or maps) for tilefish eggs and larvae or tilefish juveniles and adults.

Tilefish

Eggs and Larvae: "Tilefish eggs and larvae have EFH identified as the water column between the 250 and 1200 ft isobath, from the U.S./Canadian boundary to the Virginia/North Carolina boundary. Tilefish eggs and larvae are generally found in water temperatures from 46-66 ^{o}F."

Juveniles and Adults: "Tilefish juveniles and adults have EFH identified as benthic waters and substrate between the 250 and 1200 ft isobath, from the U.S./Canadian boundary to the Virginia/North Carolina boundary. Tilefish are generally found in rough bottom, small burrows and sheltered areas in water temperatures from 46-64 ^{o}F."

For the purposes of visualizing the benthic waters and substrate that constitute EFH for juvenile and adult tilefish, the area between the depths of 70 to 370 meters from the U.S./Canadian boundary to the Virginia/North Carolina boundary (solid polygon) was used as an approximation (Figure 1). Bathymetry is not available in GIS format at every depth; however, 70 to 370 m is within a few meters of the depths in the EFH designation (76 and 366 meters; 250 and 1200 ft, respectively) and provides a reasonable approximation of the areas designated as EFH.

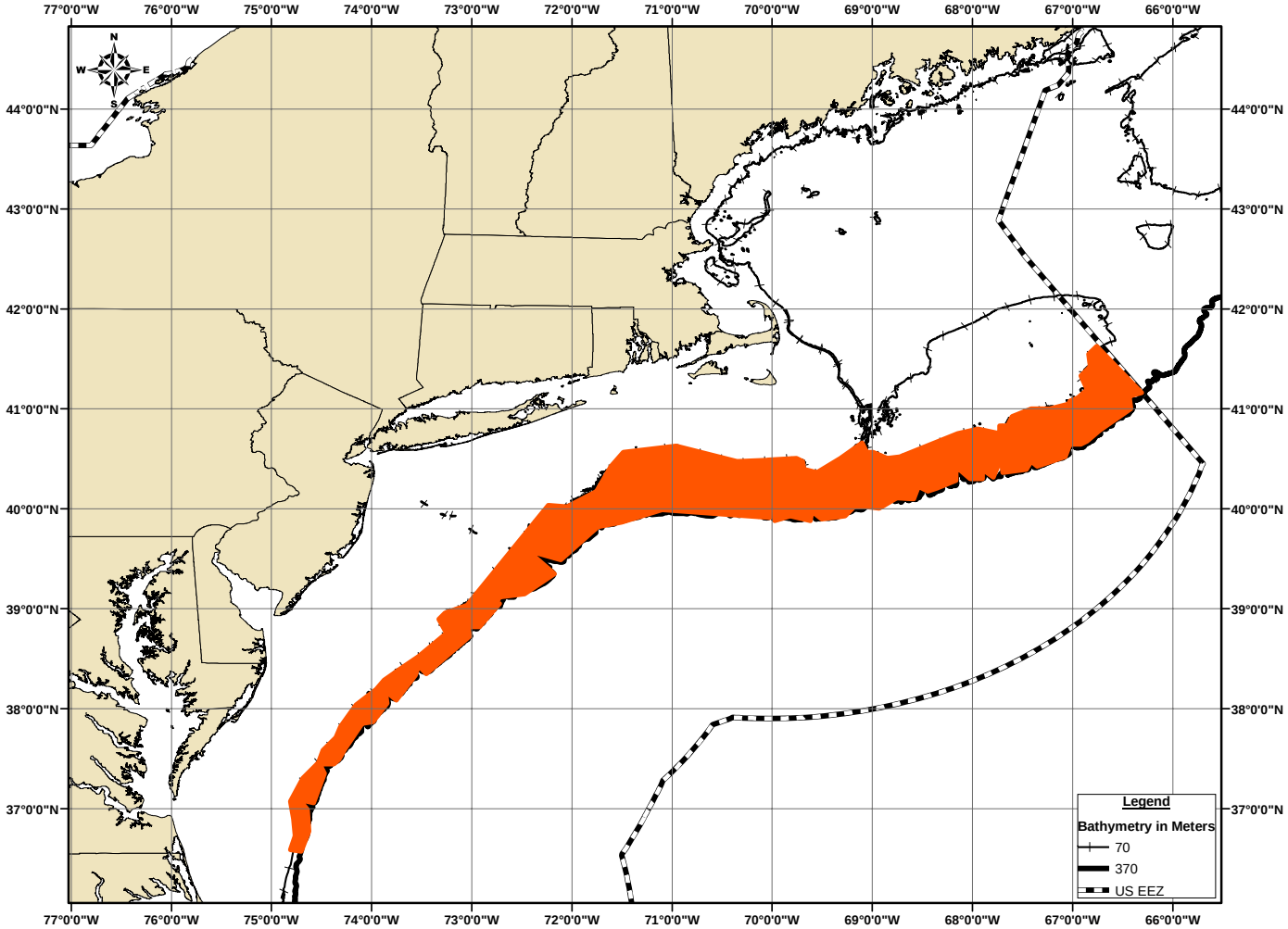

Figure 1. Status quo tilefish EFH (solid polygon) for all four life stages as described under the no action alternative (alternative 16A).

5.16.B Alternative 16B: Modify status quo EFH designations [Preferred Alternative]

This alternative would modify the current EFH designations (text descriptions and maps) based on the incorporation of new information and a re-examination of information that was used to develop the original descriptions. Information used to develop the status quo designations is summarized in the original EFH source document for tilefish (Steimle et al. 1999, in Appendix E). New information is summarized in an update memo to this document (also in Appendix E). This information indicates that temperature and sediment type are stronger indicators of essential tilefish habitat, with depth as a secondary correlate. Tilefish are most common on the outer continental shelf and slope in a relatively narrow zone of warm 9-14°C water in the Mid-Atlantic-southern New England region (Grimes et al. 1986). Suitable substrates for juveniles and adults are composed of cohesive clay sediments which are required for constructing and maintaining burrows used by the fish for shelter, or rocks, boulders, and exposed rock ledges (Wenner and Barans 2001, Grimes and Turner 1999). Although the "warm belt" is variable seasonally, the depth range where bottom temperatures are usually between 9 and 14°C is 100 to 300 meters (Grimes et al. 1986). Therefore, the EFH descriptions presented below emphasize these two factors over depth and modify the ranges in temperature and depth for juvenile and adult tilefish to be consistent with the information given in Grimes et al. (1986). While information on prey species may be included in EFH designations (50 CFR 600.10), there is limited quantifiable information on tilefish feeding habits and stomach contents; therefore, it was not included as part of the EFH designation, although the information available is described in section 6.3.

For tilefish eggs and larvae, there is limited information on their distribution. Therefore, the range of water column temperatures (averaged to a maximum depth of 200 meters, or 656.2 ft) for tilefish eggs was based on information from the NEFSC MARMAP ichthyoplankton surveys (1978-1987, all years combined). Specifically, it is the range in temperatures at which the proportion of the sum of all standardized catches (number/10 m^2) from this survey was greater than the proportion of all stations surveyed, at a given temperature (see Figure 3 in Steimle et al. (1999) in Appendix E). For larvae, there was very limited sampling and it is inferred that the temperature range for eggs would be representative for larvae, as the limited information on larvae distribution falls within the egg temperature ranges. Given the limited data on tilefish egg and larvae distribution, the data does not support identification of the isobaths above which these life stages would be found within the water column. However, it is likely that tilefish eggs and larvae would be found in waters along the continental shelf and slope between bathymetric contours that are similar to or slightly broader (due to the broader temperature range) than those areas inhabited by juvenile and adults. The limited sampling information on eggs and larvae found in Steimle et al. (1999) suggests these life stages are found in these areas. Additional information on the development of this alternative is contained in Appendix E.

Tilefish

Eggs and Larvae: EFH for tilefish eggs and larvae is the water column on the outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary in mean water column temperatures between 7.5°C and 17.5°C (45.5°F to 63.5°F).

Juveniles and Adults: EFH for tilefish juveniles and adults is semi-lithified clay substrate on the outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary in bottom water temperatures which range from 9°C to 14°C (48.2°F to 57.2°F), which generally occur in depths between 100 and 300 meters (328 to 984 ft). Tilefish create horizontal or vertical burrows in semi-lithified clay sediments, a substrate type with cohesive properties that allow the burrows to maintain their shape. Tilefish may also utilize rocks, boulders, scour depressions beneath boulders, and exposed rock ledges as shelter.

Although the revised designations emphasize temperature and substrate type (clay) over depth as being indicative of EFH, depth was used for the purposes of mapping the EFH designations. Depth is fixed and not seasonally variable, therefore the depth ranges that define the area where the preferred bottom temperatures conditions typically prevail (100 to 300 meters, or 328 to 984 ft) were used to create maps of benthic EFH for juvenile and adult tilefish on the outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary (Figure 2).

The EFH designations associated with alternatives 16A and 16B are summarized in Box 5.15 below.

Box 5.15. EFH designations associated with alternative 16A and 16B.

Alternative	Life Stage	Habitat	Geographic Location
16A	Eggs/ Larvae	Water column between the 250 and 1200 ft (76 to 366 meters) isobaths. Generally found in water temperatures from 46°F to 66°F (7.8°C to 18.9°C)	From the U.S./Canadian boundary to the Virginia/North Carolina boundary
	Juveniles/ Adults	Benthic waters and substrate between the 250 and 1200 ft (76 to 366 meters) isobaths. Generally found in rough bottom, small burrows, and sheltered areas in water temperatures from 46°F to 64°F (7.8°C to 17.8°C)	Same as above
16B	Eggs/ Larvae	Water column on the outer continental shelf and slope in mean temperatures ranging from 45.5°F to 63.5°F (7.5°C to 17.5°C)	Same as above
	Juveniles/ Adults	Semi-lithified clay substrate on the outer continental shelf and slope (tilefish create horizontal or vertical burrows in semi-lithified clay sediments, a substrate type with cohesive properties that allow the burrows to maintain their shape. Tilefish may also utilize rocks, boulders, scour depressions beneath boulders, and exposed rock ledges as shelter) at bottom water temperatures ranging from 48.2°F to 57.2°F (9°C to 14°C), generally in depths between 328 and 984 ft (100 to 300 m).	Same as above

5.16.C Alternative 16C: Considered but rejected from further analysis – GIS analysis of substrate and temperature

This alternative considered the use of temperature in conjunction with quantitative substrate information to produce a map of juvenile and adult tilefish EFH based on these two important indicators of tilefish habitat. This alternative considered identifying areas that have semi-lithified clay substrate and fall within bottom water temperatures which range from 9°C to 14°C (48.2^{o}F to 57.2^{o}F). This alternative was not developed further and was rejected from analysis on the following basis.

There have been several studies and information reviews conducted examining sediment information and sea floor topography of the sea floor since the original FMP (MAFMC 2000). Poppe and Polloni (2000) compiled an interpolated GIS shapefile of sediment types based on multiple sediment samples collected over several decades. Poppe et al. (2003) and most recently, Reid et al. (2005) built off the information from those studies described above as well as other information to compile a more comprehensive data set, with multiple sources and levels of data quality which can be used to identify areas ocean bottom with clay, as point data. The information available is coarse in scale and does not lend itself to identification of the specific clay habitats that tilefish utilize within the temperature range of 9°C to 14°C (48.2^{o}F to 57.2^{o}F), and does not provide information on identifying potentially more sensitive tilefish habitat types such as clay outcroppings.

As such, the use substrate information in conjunction with temperature to map juvenile and adult tilefish EFH was considered but rejected from further analysis on the basis the data does not support such an analysis. There is limited information on egg and larvae distribution, therefore only alternative 16B contains considerations to change those designations. Additional information on the development of this alternative is contained in Appendix E.

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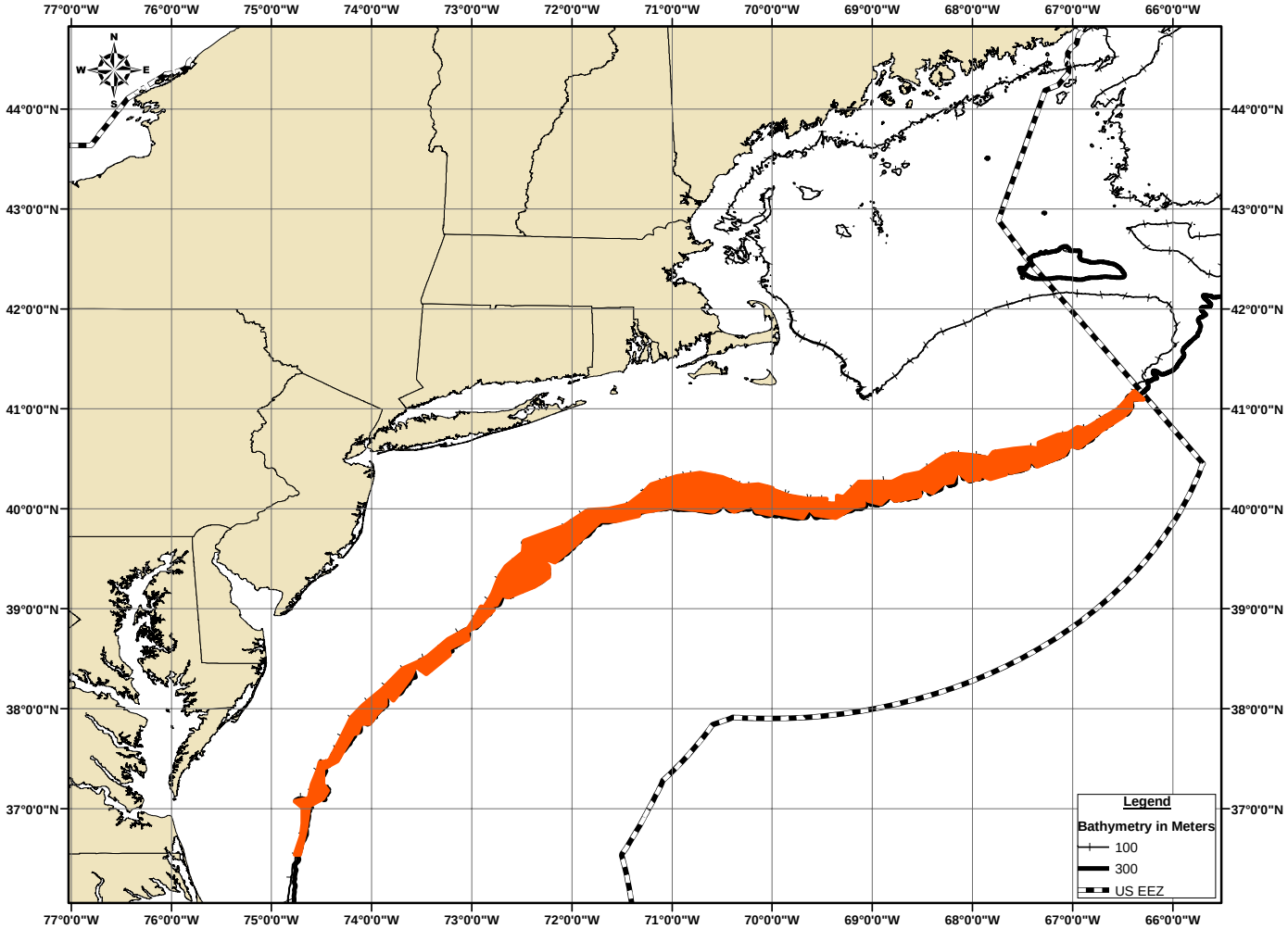

Figure 2. Tilefish EFH (solid polygon) for all four life stages as described under the action alternative (alternative 16B).

5.17 HAPC Designation

The number of alternatives that can be selected for HAPC designation is not limited to one. Therefore, under HAPC designation there are 8 possible resulting HAPC designations based on individual alternatives or combinations of alternatives. These are 17A only; 17A+17C; 17A+17D; 17B only; 17B+17C; 17B+17D; 17C only; and 17D only.

5.17.A Alternative 17A: No Action (maintain the status quo HAPC designation)

The EFH Final Rule gives the Councils the authority to identify habitat areas of particular concern (HAPCs) within an area designated as EFH as long as one or more of the following four criteria are met: important ecological function (for the species in question), sensitivity to human induced environmental degradation, threat of development activities, or rarity of habitat (50 CFR Part 600.815 (a)(9)). In the tilefish FMP, the MAFMC recommended that "the substrate between the 250 and 1200 ft isobath, from U.S./Canadian boundary to the Virginia/North Carolina boundary within statistical areas 616 and 537 be designated as HAPC for juvenile and adult tilefish" (Figure 3). This alternative would not alter that definition of HAPC.

For the purposes of mapping the status quo HAPC for juvenile and adult tilefish, the area between the depths of 70 to 370 m (approximation for 76 and 366 m; 250 and 1200 ft, respectively) within statistical areas 616 and 537 (solid polygon) was used (Figure 3).

5.17.B Alternative 17B: Status quo HAPC with modified depth range

This alternative would modify the current HAPC designation for juvenile and adult tilefish, described above in alternative 17A, and redefine it according to the preferred new EFH alternative for these two life stages as clay outcrop/pueblo habitats in an area of the outer continental shelf and slope bounded by 70°W and 39°N at depths between 100 and 300 meters (328 to 984 ft). This HAPC alternative is shown in Figure 4. This modification would make the tilefish juvenile and adult HAPC designation reflect the modification to EFH designation under alternative 16B, as HAPC is a subset of EFH. The habitat characteristics (substrate types and range of bottom temperatures) described in alternative 16B would also apply to the HAPC.

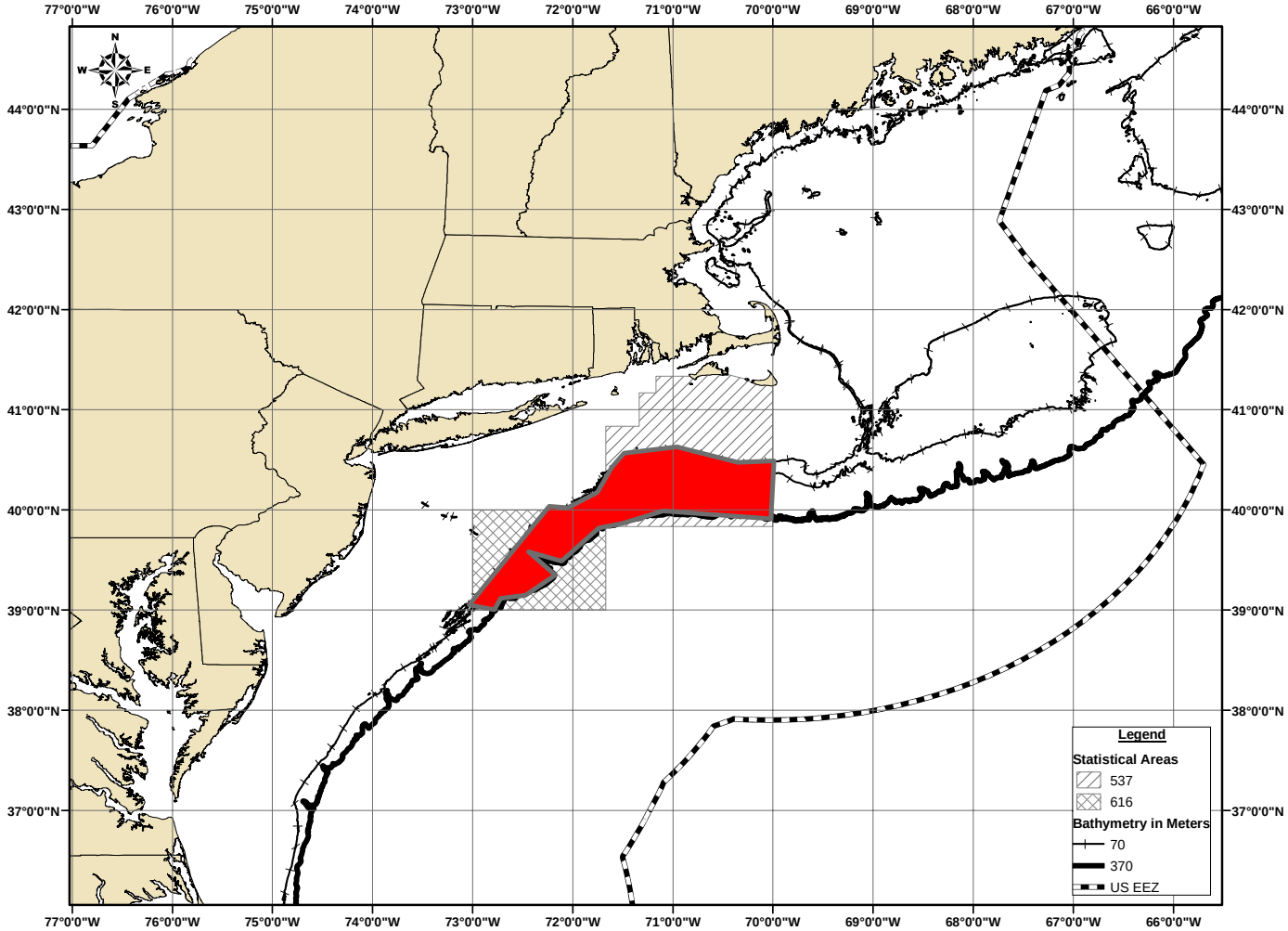

Figure 3. Status quo juvenile and adult tilefish HAPC (solid polygon) within statistical areas 537 and 616, between 76 and 366 meters (250 and 1200 ft), as identified in the current EFH designation (no action alternative 17A).

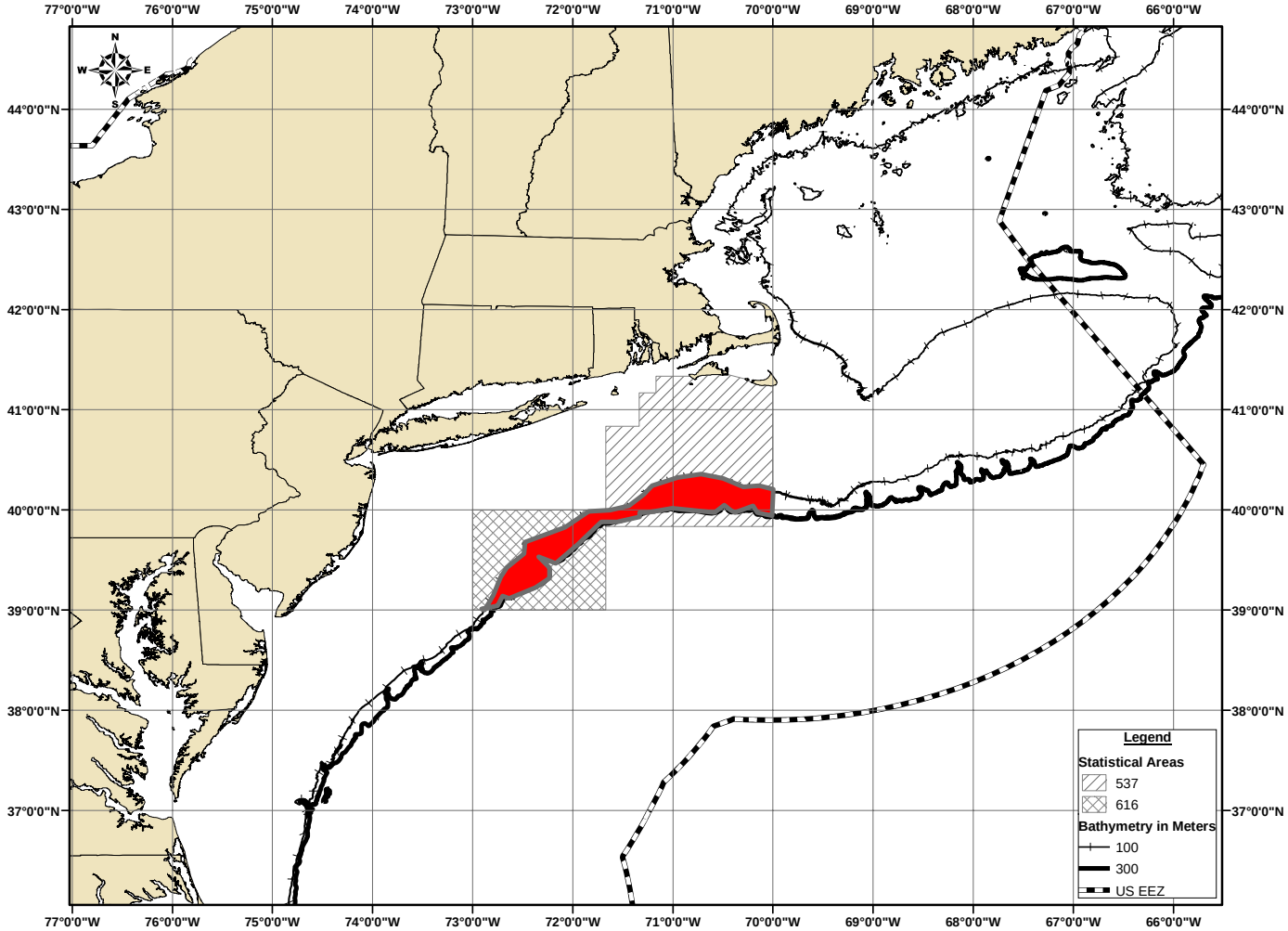

Figure 4. Proposed outer continental shelf/slope alternative 17B tilefish HAPC (solid polygon) within statistical areas 537 and 616 between 100 and 300 meters (328 to 984 ft).

5.17.C Alternative 17C: Designate HAPC in a specified depth range within four canyons [Preferred Alternative]

This alternative would designate HAPC for juvenile and adult tilefish as clay outcrop/pueblo habitats within Norfolk, Veatch, Lydonia, and Oceanographer canyons at the depth range specified for tilefish EFH. Because HAPC is a subset of EFH and there is a proposed modification to the EFH designation within this document, two definitions are provided below. One HAPC is defined on the assumption that the EFH designation is not changed (no action alternative 16A) and the other assumes that the action alternative 16B is chosen and the current EFH designation is modified.

The locations of these canyons on the outer continental shelf and slope are shown below (Figure 5). As discussed in Appendix E, in the Able and Muzeni (2002) review of archived video and submersible survey logs, Norfolk, Veatch, and Lydonia canyons were noted as having tilefish "pueblo burrows" which are formed in exposed clay outcroppings. In addition, Valentine et al. (1980) noted the presence of clay outcroppings in Oceanographer Canyon. Therefore, only those canyons with known outcropping areas would be designated under this alternative at this time. If pueblo habitats or clay outcroppings are identified in other canyon areas at some point in the future, those canyons could be designated as additional HAPCs by means of framework actions to this amendment or future amendments to the FMP.

Option A: If the current EFH designation is maintained (alternative 16A), HAPC for juvenile and adult tilefish would be designated as clay outcrop/pueblo habitats in Norfolk, Veatch, Lydonia, and Oceanographer canyons within the 76 and 366 meter (250 and 1200 ft) isobaths.

Option B: If the EFH designation is modified under alternative 16B, then HAPC for juvenile and adult tilefish would be designated as clay outcrop/pueblo habitats in Norfolk, Veatch, Lydonia, and Oceanographer canyons between 100 and 300 meters (328 to 984 ft).

Maps which approximate the locations of HAPC within EFH in these four canyons are show in Appendix E in the maps of proposed gear restricted areas (GRAs). Specific maps which define the areas identified as HAPC for juvenile and adult tilefish within these four canyons are not provided because of the difficulty in clearly defining the finer scale detail of the bathymetry along the canyon margins. These maps however, do provided an approximation and the extent of HAPC may be greater or smaller than that identified in Appendix E.

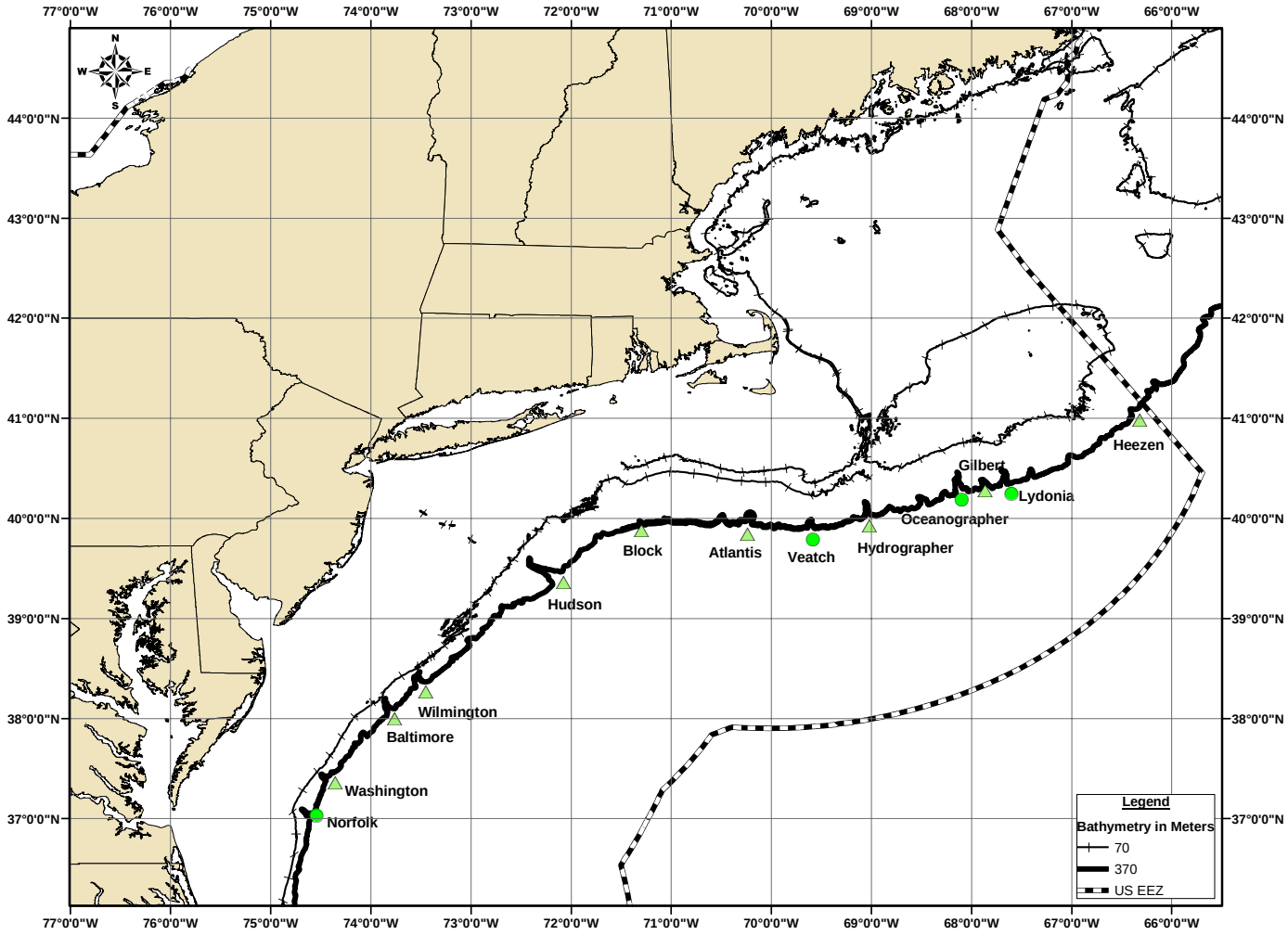

Figure 5. Location of thirteen canyons along the outer continental shelf and slope (circles represent canyons where clay outcrops/pueblo habitat are known to exist.).

5.17.D Alternative 17D: Designate HAPC as thirteen canyons (in a specified depth range)

This alternative would designate HAPC as clay outcrop/pueblo habitats within Norfolk, Washington, Baltimore, Wilmington, Hudson, Block, Atlantis, Veatch, Hydrographer, Oceanographer, Gilbert, Lydonia, and Heezen canyons (Figure 5). As discussed in Appendix E in Able and Muzeni (2002) and Valentine et al. (1980) there are many canyons that are noted to have pueblo habitats, clay outcroppings, or sufficient canyon slope to potentially contain clay outcrops. Therefore, the canyons with known outcropping areas or canyons with the potential to contain clay outcroppings would be designated under this alternative.

Because HAPC must be contained within EFH, there are two definitions provided below. One HAPC definition is provided assuming that the EFH designation is not changed (alternative 16A) and the other assumes that the action alternative (alternative 16B) is chosen and modifies the current definition of EFH. If pueblo habitats or clay outcroppings are identified in other canyon areas not included in this alternative at some point in the future, they could be designated as additional HAPCs by means of framework actions to this amendment or future amendments to the FMP.

Option A: If the current EFH designation is maintained (alternative 16A), HAPC for juvenile and adult tilefish would be clay outcrop/pueblo habitats in Norfolk, Washington, Baltimore, Wilmington, Hudson, Block, Atlantic, Veatch, Hydrographer, Oceanographer, Gilbert, Lydonia, and Heezen canyons within the 76 and 366 meter (250 and 1200 ft) isobaths.

Option B: If the EFH designation is modified under alternative 16B, then HAPC for juvenile and adult tilefish would be clay outcrop/pueblo habitats in Norfolk, Washington, Baltimore, Wilmington, Hudson, Block, Atlantic, Veatch, Hydrographer, Oceanographer, Gilbert, Lydonia, and Heezen canyons between 100 and 300 meters (328 to 984 ft).

Maps which approximate the locations of HAPC within EFH in these thirteen canyons are show in Appendix E in the maps of proposed gear restricted areas (GRAs). Specific maps which define the areas identified as HAPC for juvenile and adult tilefish within these thirteen canyons are not provided because of the difficulty in clearly defining the finer scale detail of the bathymetry along the canyon margins. These maps however, do provided an approximation and the extent of HAPC may be greater or smaller than that identified in Appendix E.

5.18 Measures to Reduce Gear Impacts on EFH

The Magnuson-Stevens Act requires that Councils evaluate potential adverse effects of fishing activities on EFH and include in FMPs management measures necessary to minimize adverse effects to the extent practicable. Specifically for tilefish, clay outcroppings (pueblo habitats) have been determined to be highly vulnerable to permanent disturbance by bottom tending mobile gear such as the bottom otter trawl (see

section 6.3 and Appendix E of this EIS). Therefore, several gear restricted areas (GRAs) are proposed to minimize impacts on juvenile and adult tilefish EFH from bottom trawling activity. For enforcement purposes these closures do not follow the depth contours exactly, but are designed as polygonal areas which approximate the areas and depths described while allowing for straight enforcement boundaries. In addition, because these areas are closed polygons, any areas within those GRAs that are deeper than the maximum depth that defines tilefish EFH (either 300 or 366 m) would also be closed to bottom trawling activity even though they are not defined as EFH.

The number of alternatives that can be selected to reduce gear impacts on EFH for tilefish is not limited to one. The action alternatives 18B and 18C could be combined. In addition, within the canyon GRA alternative 18C, one, all, or combinations of canyons could be selected.

5.18.A Alternative 18A: No Action (No GRA)

Under this alternative, no specific measures to reduce gear impacts on juvenile or adult tilefish EFH or HAPC would be established under the FMP.

5.18.B Alternative 18B: Outer continental shelf and slope HAPC GRA

This alternative would close the outer continental shelf and slope HAPC for juvenile and adult tilefish to bottom trawling activity on a year round basis. This area is being considered because of the extensive bottom trawling activity that occurs in this area (see Appendix E). Since a modification to the EFH designation is proposed in this document, the GRA area is contingent on the selection of the EFH designation alternative.

Option A: If the no action EFH designation alternative (alternative 16A) is selected, the tilefish GRA would be the area on the outer continental shelf and slope between 70°W and 39°N and depths of 76 to 366 meters (250 to 1200 ft) based on the current EFH designation (Figure 6). Therefore, no bottom trawling would be permitted in this area. The latitude and longitude for the corner points of this GRA are as follows:

Outer continental shelf/slope tilefish GRA based on depth ranges of 250 to 1200 ft (76 and 366 meters)

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
39	0	73	10
39	0	72	40
39	50	71	30
39	50	70	0
40	30	70	0
40	30	71	50
39	0	73	10

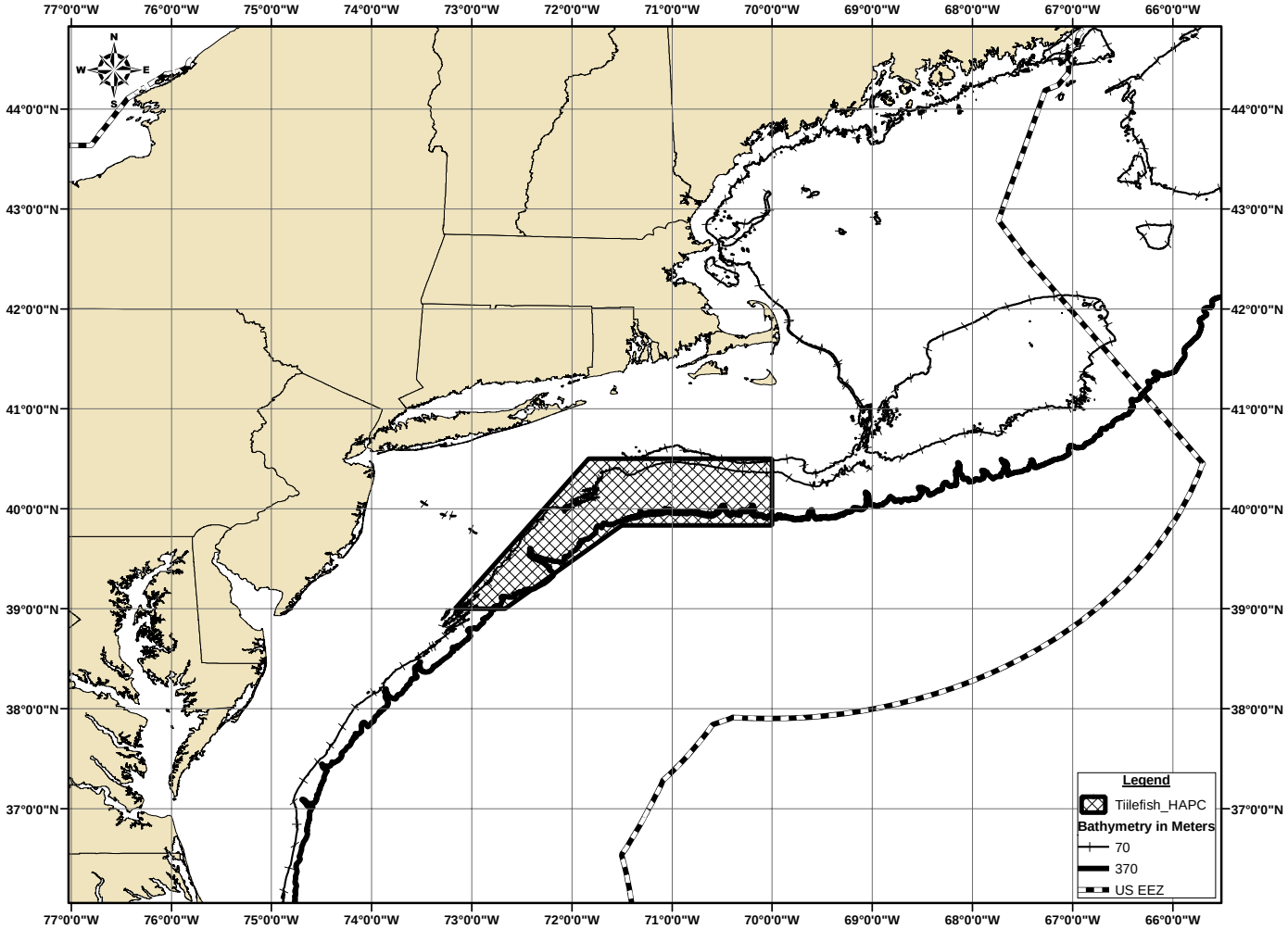

Figure 6. Tilefish GRA (polygon) on the outer continental shelf/slope between 76 and 366 meters (250 and 1200 ft), as identified in the current EFH designation (no action alternative 16A).

Option B: If the action EFH designation alternative (alternative 16B) is selected, the tilefish GRA would be the area on the outer continental shelf and slope between 70°W and 39°N and depths of 100 and 300 meters (328 to 984 ft) based on the new EFH designation (Figure 7). Therefore, no bottom trawling would be permitted in this area. The latitude and longitude for the corner points of this GRA are as follows:

Outer continental shelf/slope tilefish GRA based on depth ranges of 100 and 300 meters (328 to 984 ft)

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	20	71	0
40	20	70	0
39	50	70	0
39	50	71	30
39	0	72	40
39	0	73	0
39	40	72	30
40	20	71	0

5.18.C Alternative 18C: GRAs within canyons [Preferred Alternative]

This alternative would prohibit bottom trawling, on a year-round basis, within and adjacent to one, some, or all of the thirteen canyons identified in HAPC alternative 17D at depths associated with the EFH designation that is selected. This GRA is being considered because of the potential for current or future bottom otter trawling activity to impact clay outcroppings within these canyon areas. In the Able and Muzeni (2002) review of archived video and submersible survey logs, Norfolk, Veatch, and Lydonia Canyons were noted as having tilefish "pueblo burrows" which are formed in exposed clay outcroppings. In addition, Valentine et al. (1980) noted the presence of clay outcroppings in Oceanographer Canyon. The remaining canyons listed are steep enough to expose clay outcrops which could be utilized as pueblo habitat for tilefish. The thirteen canyons considered are as follows: Norfolk, Washington, Baltimore, Wilmington, Hudson, Block, Atlantis, Veatch, Hydrographer, Oceanographer, Gilbert, Lydonia, and Heezen canyons. The Council must select which canyon GRAs would be closed under this alternative.

If the current EFH designation is maintained (alternative 16A), the canyon GRAs for juvenile and adult tilefish would be located in and adjacent to these canyons on the outer continental shelf and slope within the 76 and 366 m (250 and 1200 ft) isobaths. If the EFH designation is modified under alternative 16B, the canyon GRAs for juvenile and adult tilefish would be located in and adjacent to these canyons on the outer continental shelf and slope between 100 and 300 meters (328 to 984 ft).

The latitude and longitude for the corner points of the thirteen potential canyon GRAs are given in Tables 1 and 2, starting with the southernmost canyon and moving along the

shelf; the location of each potential GRA is shown in Figures 8 and 9 and in more detail in Appendix E. For enforcement purposes, the Lydonia and Oceanographer Canyon GRAs were extended into deeper water in order to overlap with the closures implemented in the monkfish FMP that prohibit vessels from fishing in these two areas while using a monkfish day-at-sea. The monkfish closures have the effect of prohibiting bottom otter trawling in these two areas, but only by vessels targeting monkfish. If these two GRAs are selected for implementation in this amendment, no bottom trawling would be allowed by any vessel operating in any fishery managed by the Mid-Atlantic and New England Councils. If alternative 18D does not include Lydonia and Oceanographer canyons, it would be difficult to differentiate monkfish bottom trawling in these two areas from other bottom trawling activity. Detailed maps of the potential canyon GRAs for both EFH alternatives are provided in Appendix E.

The Council chose 18C as its preferred alternative. Under alternative 18C, the Council had to decide which canyons to select for GRA designation. That is, the Council could have selected to close one, some, or all of the following 13 canyons. The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council also revised the areas associated with the GRAs from what was initially provided in the document. The proposed GRAs in these canyons (revised four canyon areas) are shown in Executive Summary Figures ES-1 through ES-3 and in Appendix E (Figures A20a for Oceanographer and Lydonia, A22a for Veatch, and A36a for Norfolk). In addition, coordinates for the associated closures are shown in Table 2. As indicated above, the Council selected GRAs around the mouth of the four canyons on the outer continental shelf and slope that are known to have clay outcrop/pueblo habitats (Norfolk, Veatch, Lydonia, and Oceanographer). The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons (Appendix E Figures A20 for Oceanographer and Lydonia, A22 for Veatch, and A36 for Norfolk) could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat.

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Table 1. Coordinates for each of the thirteen canyon GRAs along the Northeast Shelf/Slope based on depth ranges of 76 and 366 meters (250-1200 ft).

Norfolk

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
37	5	74	47
37	7	74	44
37	5	74	33
36	54	74	37
37	5	74	47

Washington

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
37	29	74	31
37	28	74	22
37	17	74	29
37	29	74	31

Baltimore

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
38	13	73	54
38	17	73	52
38	8	73	45
38	1	73	52
38	13	73	54

Wilmington

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
38	33	73	30
38	22	73	26
38	17	73	36
38	26	73	36
38	33	73	30

Hudson

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
39	42	72	31
39	31	72	4
39	14	72	20
39	42	72	31

Block

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	20	71	27
39	56	71	16
39	55	71	21
40	20	71	27

Table 1 (continued). Coordinates for each of the thirteen canyon GRAs along the Northeast Shelf/Slope based on depth ranges of 76 and 366 meters (250-1200 ft).

Atlantis

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	22	70	9
39	57	70	9
39	59	70	15
40	22	70	9

Veatch

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	14	69	39
39	55	69	32
39	54	69	42
40	14	69	39

Hydrographer

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	27	69	9
40	2	68	57
39	60	69	6
40	27	69	9

Oceanographer

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	43	68	13
40	10	67	59
40	10	68	12
40	43	68	13

Gilbert

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	45	68	3
40	20	67	45
40	17	67	56
40	45	68	3

Lydonia

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	44	67	44
40	16	67	34
40	16	67	42
40	44	67	44

Heezen

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
41	27	66	48
41	6	66	19
40	60	66	25
41	27	66	48

Table 2. Coordinates for each of the thirteen canyon GRAs along the Northeast Shelf/Slope based on depth ranges of 100 and 300 meters (328-984 ft).

a. Original coordinates for the 13 canyons

Norfolk

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
37	5	74	46
37	7	74	42
37	4	74	34
36	58	74	37
37	5	74	46

Washington

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
37	29	74	31
37	28	74	24
37	17	74	30
37	29	74	31

Baltimore

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
38	12	73	53
38	15	73	51
38	7	73	46
38	2	73	51
38	12	73	53

Wilmington

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
38	30	73	29
38	22	73	27
38	18	73	36
38	26	73	36
38	30	73	29

Hudson

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	12	70	9
39	57	70	9
39	60	70	15
40	12	70	9

Block

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	12	70	9
39	57	70	9
39	60	70	15
40	12	70	9

Table 2 (continued). Coordinates for each of the thirteen canyon GRAs along the Northeast Shelf/Slope based on depth ranges of 100 and 300 m (328-984 ft).

a. Original coordinates for the 13 canyons

Atlantis

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	12	70	9
39	57	70	9
39	60	70	15
40	12	70	9

Veatch

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	6	69	37
39	55	69	32
39	54	69	42
40	6	69	37

Hydrographer

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	14	69	8
40	15	69	4
40	2	68	57
40	0	69	7
40	14	69	8

Oceanographer

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	33	68	12
40	33	68	9
40	10	67	59
40	10	68	12
40	33	68	12

Gilbert

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	33	67	60
40	20	67	44
40	18	67	56
40	33	67	60

Lydonia

Latitude		Longitude	
Degrees	**Minutes**	**Degrees**	**Minutes**
40	34	67	44
40	27	67	38
40	16	67	34
40	16	67	42
40	34	67	44

Table 2 (continued). Coordinates for each of the thirteen canyon GRAs along the Northeast Shelf/Slope based on depth ranges of 100 and 300 m (328-984 ft).

a. Original coordinates for the 13 canyons

Heezen			
Latitude		**Longitude**	
Degrees	**Minutes**	**Degrees**	**Minutes**
41	8	66	27
41	7	66	20
41	0	66	25
41	8	66	27

b. Modified coordinates for the proposed GRAs in four canyons (revised canyons) selected by the Council under preferred alternative 18C.

Canyon	Latitude				Longitude			
	Degrees	Minutes	Seconds	Dec Deg	Degrees	Minutes	Seconds	Dec Deg
Oceano-grapher (revised coordinates)	40.0	29.0	50.0	40.497	-68	10	30.00	-68.175
	40.0	29.0	30.0	40.492	-68	8	34.80	-68.143
	40.0	25.0	51.6	40.431	-68	6	36.00	-68.110
	40.0	22.0	22.8	40.373	-68	6	50.40	-68.114
	40.0	19.0	40.8	40.328	-68	4	48.00	-68.080
	40.0	19.0	5.0	40.318	-68	2	19.00	-68.039
	40.0	16.0	41.0	40.278	-68	1	16.00	-68.021
	40.0	14.0	28.0	40.241	-68	11	28.00	-68.191
Lydonia (revised coordinates)	40.0	31.0	55.2	40.532	-67	43	1.20	-67.717
	40.0	28.0	52.0	40.481	-67	38	43.00	-67.645
	40.0	21.0	39.6	40.361	-67	37	4.80	-67.618
	40.0	21.0	4.0	40.351	-67	43	1.00	-67.717
	40.0	26.0	32.0	40.442	-67	40	57.00	-67.683
	40.0	28.0	31.0	40.475	-67	43	0.00	-67.717
Veatch (revised coordinates)	40.0	0.0	40.0	40.011	-69	37	8.00	-69.619
	40.0	0.0	41.0	40.011	-69	35	25.00	-69.590
	39.0	54.0	43.0	39.912	-69	33	54.00	-69.565
	39.0	54.0	43.0	39.912	-69	40	52.00	-69.681
Norfolk (revised coordinates)	37.0	5.0	50.0	37.097	-74	45	34.00	-74.759
	37.0	6.0	58.0	37.116	-74	40	48.00	-74.680
	37.0	4.0	31.0	37.075	-74	37	46.00	-74.629
	37.0	4.0	1.0	37.067	-74	33	50.00	-74.564
	36.0	58.0	37.0	36.977	-74	36	58.00	-74.616
	37.0	4.0	26.0	37.074	-74	41	2.00	-74.684

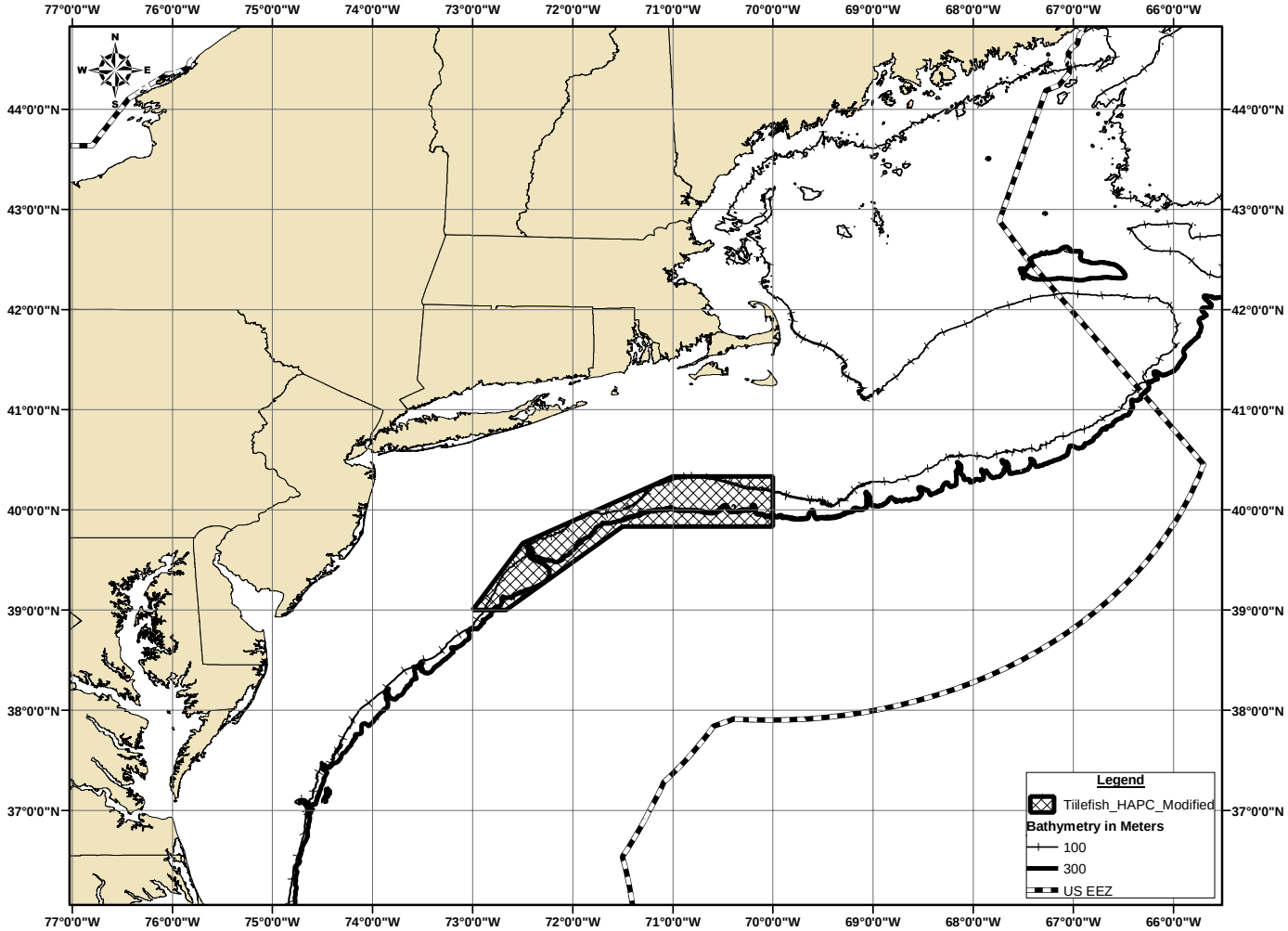

Figure 7. Tilefish GRA (polygon) on the outer continental shelf/slope between 100 and 300 meters (328 to 984 ft), as identified in the new EFH designation (action alternative 16B).

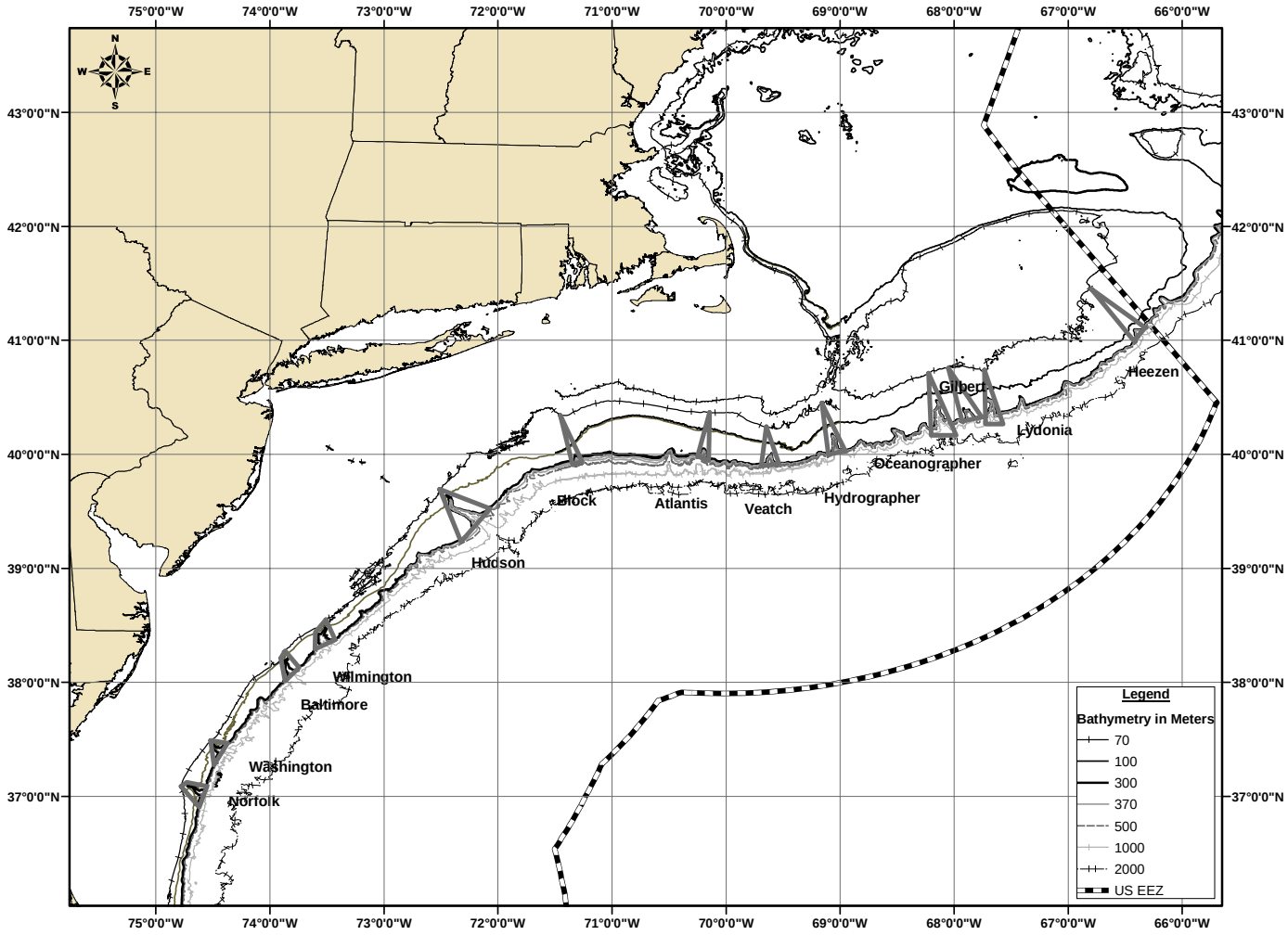

Figure 8. Tilefish GRAs (polygons) for each of the thirteen canyons between 76 and 366 meters (250 and 1200 ft), as identified in the status quo EFH designation (no action alternative 16A).

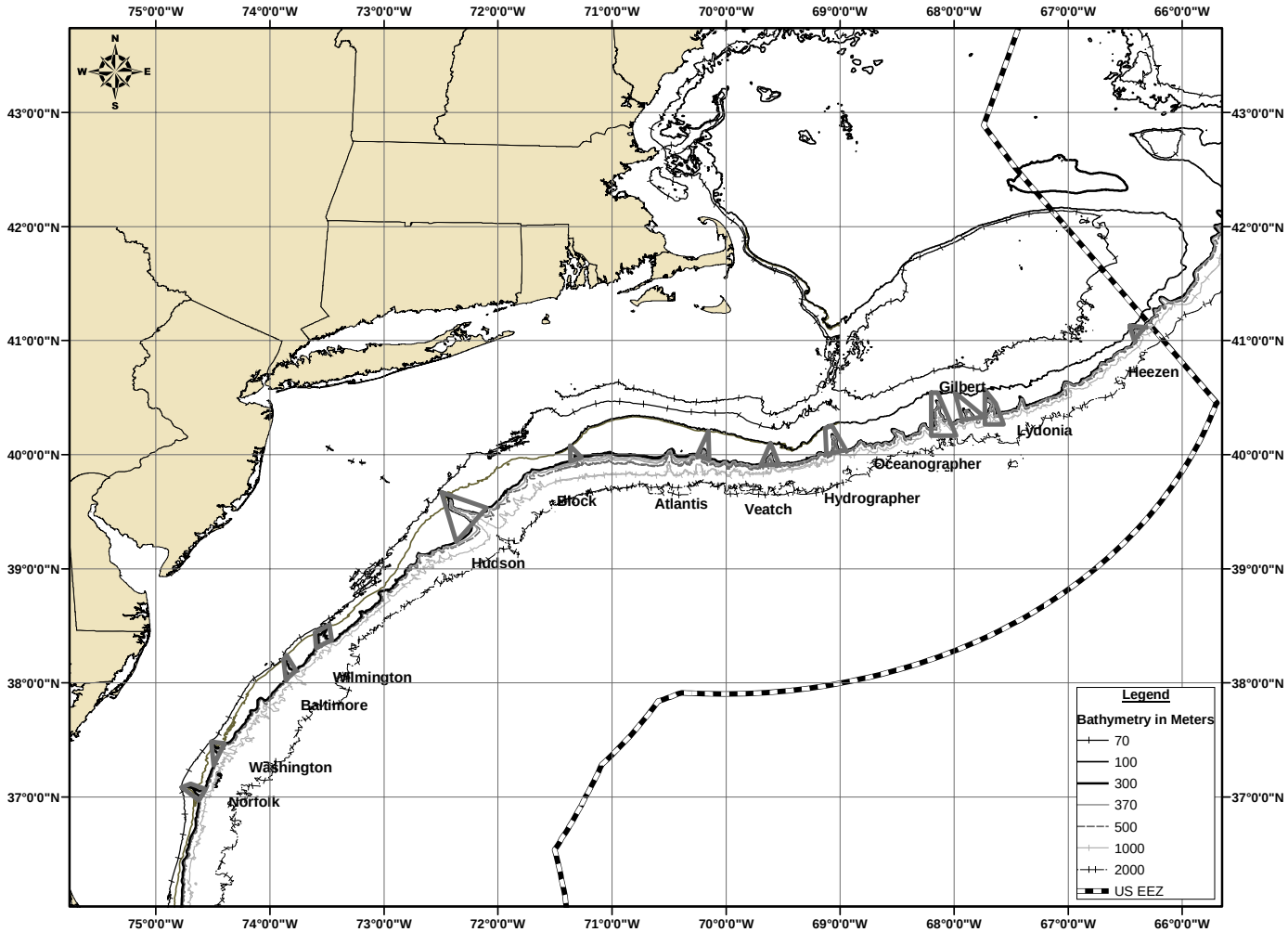

Figure 9. Tilefish GRAs (polygons) for each of the thirteen canyons between 100 and 300 meters (328 to 984 ft), as identified in the new EFH designation (action alternative 16B).

5.18.D Considered but rejected for further analysis - Alternative 18D: EEZ GRA

This alternative would close the EEZ to bottom otter trawling activity. This potential EEZ GRA covers a broad area (approximately 11.7 million km^2; 4.5 million mi^2; 3.4 million nm^2) from 3 to 200 miles and the outer boundary is as indicated in Figure 9. This area is being considering because of the extensive bottom otter trawling (fish) activity that occurs throughout the EEZ and potential impacts from this gear type to tilefish EFH, as well as EFH for other species.

This alternative was considered but rejected from further analysis because it would result in profound social and economic impacts on fishermen and their communities.

OTHER ISSUES

5.19 Methods for collecting royalties under a Tilefish IFQ system

Section 303A(d) of the reauthorized MSFMCA states that "In establishing a limited access privilege program, a Council shall consider, and may provide, if appropriate, an auction system or other program to collect royalties for the initial, or any subsequent, distribution of allocations in a limited access privilege program if— (1) the system or program is administered in such a way that the resulting distribution of limited access privilege shares meets the program requirements of this section; and (2) revenues generated through such a royalty program are deposited in the Limited Access System Administration Fund established by section 305(h)(5)(B) and available subject to annual appropriations."

The current MSFMCA requires Councils to consider an auction system to simultaneously allocate limited access fishing privileges and to collect royalties. The collection of royalties is different from cost recovery. The principle of cost recovery is that participants in an IFQ fishery should pay some or all of the costs directly related to management, data collection and analysis, and enforcement of the IFQ program. The principle associated with royalty collection is to transfer some of the financial gains earned from the use of the public resource to the general government coffers (NMFS 2007). A portion of the discussion presented below was extracted from the pre-publication draft guidelines developed by NMFS on "The Design and Use of Limited Access Privilege Programs" (NMFS 2007).

- ***Auctions***

Auctions are sales wherein items are sold to the highest bidders. Auctions are an ex ante activity as they raise revenue prior to harvesting. According to Grafton (1995), in theory, the revenue from a competitive auction of all IFQ quota shares should equal the total of expected rent. However, in practice, revenues from auctions will only equal actual rent if the expectations about future TAL, fish prices, and fishing costs are accurate. Due to uncertainty factors (expectations about future TAL, fish prices, and fishing costs), "a one-time option or very infrequent options will not be very effective in extracting rent, unless

one asks for bids terms of share of profit or in some terms that would alleviate the price and quantity risk" (NRC 1999, p. 161). Given the fact that payout for options are before the fact (ex ante activity), poor harvest levels or depressed prices mean that revenue could exceed rent.

Auctions can promote economic efficiency as fishing privileges are distributed in an economically efficient manner when they are held by the participants of the fishery that value them the most. These fishery participants are the most likely to harvest fish that consumers value high and do so at the lowest cost. As such, these fishery participants are most likely the ones to submit relatively high bids for fishing privileges under an auction system.

Auctions can provide price discovery when conducted transparently as they can provide excellent information about the value of fishing privileges. This can in turn, aid fishermen plan their investments and bankers assess the value of fishing privileges as collateral. The royalties collected under an auction system would go into the Limited Access System Administration Fund (LASAF; the same fund used to deposit process from cost recovery programs). While funds collected under cost recovery programs are to be available without appropriation or fiscal limitations, funds collected through royalty programs are subject to annual appropriations. In other words, while Councils have the opportunity to collect royalties in a manner that is not subject to the limitation placed under cost recovery programs (i.e., up to 3-percent of the ex-vessel value), there is no guarantee that the funds collected through a royalty system will be appropriated for use in the fishery. Finally, the potentially high cost of auctioned IFQ privileges could prevent entry for individuals with inadequate access to capital.

- ***Per-unit fee assessed on allocations***

This is perhaps the most simple and straightforward method to collecting royalties. Under this royalty collection system, a fixed fee is assessed annually on every unit of fishing privilege. While a per-unit fee that lasts the duration of the IFQ program could be established by the Council just one time when the royalty collection system commences, the benefit of an annual fee that could be adjusted to reflect changes in the fishery. This is also an ex ante activity as revenues are raised prior to harvesting.

Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. The level of the fee to be paid could be based on a specific revenue target, a percentage of the value of the fishing privilege, or a fee level equal to a percentage of the average value of harvested fish over some historical time period. Regardless of the methodology used to collect fees under a per-unit fee collection strategy, the larger the amount of fishing privileges a fishery participant holds, the higher the overall royalty payment for that participant.

There are several benefits to a per-unit fee royalty collection system. It can be easily implemented at a low cost, and it allows for a predictable steam of revenue to be collected. IFQ permit holders would have an incentive to pay royalty fees if the allocation

of annual privileges is conditional to the payment of such fees. A disadvantage of per-unit fees assessed on allocations is that royalty levels do not adjust automatically to changes in the fishery and, depending on the system adopted, fishery managers may have to adjust fees periodically as fishery conditions change. Lastly, care must be given to the level of a per-unit fee imposed. If it is set too high privilege holders might choose not to fish at all.

- ***Percentage fee assessed on the landed value of harvest***

Under this collection system a percentage fee is assessed on the landed value of harvested fish. This collection method is similar to the collection system mandated under MSFMCA for cost recovery. This system is also similar to the per-unit fee on allocation discussed above where the level of the fee is set equal to a percentage of the average value of fish harvested over some historical time period, but varies in that the royalty payments are determine at the end of the fishing season or at the time the landings rather than before the fishing season begins.

The benefit of a percentage fee assessed on landed value is that royalty payments adjust automatically to changes in the quantity of fish landed and fish market prices. However, fluctuations in landed value would create uncertain revenue stream under a fee on landed value royalty collection system.

5.19.A Alternative 19A: No Action (Collection of royalties would not be implemented for the initial, or any subsequent, distribution of allocations in the tilefish IFQ program) [Preferred Alternative]

Under this alternative, royalties would not be collected if an IFQ program is put in place for the commercial tilefish fishery.

5.19.B Alternative 19B: A per-unit fee would be assessed on tilefish IFQ allocations if an IFQ program is put in place for the commercial tilefish fishery. IFQ shareholder directly pays

5.19.B.0 Alternative 19B

Alternative 19B would collect royalties in the tilefish fishery by implementing a per-unit fee assessed on IFQ allocations. An IFQ permit holder would incur a royalty fee liability for every pound of IFQ tilefish that he or she receives at the beginning of the fishing season (i.e., when share allocations are made at the beginning of each fishing year). The IFQ permit holder would be responsible for self-collecting his or her own fee liability for all his or her IFQ share allocation. The IFQ permit holder would be responsible for submitting this payment to NMFS in order to receive their annual IFQ permit. The dollar amount of the fee due would be determined by multiplying the royalty fee (per-unit fee on IFQ shares) by the number of IFQ shares allocated to a permit. Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. The level of the fee to be paid could be based on a specific revenue target.

When an allocation is transferred permanently, then the individual purchasing the IFQ shares would be responsible for paying a royalty fee liability for every pound of IFQ tilefish that he or she purchases before that individual commences to harvest tilefish. The dollar amount of the fee would be determined as described below.

5.19.B.1 Fee Determination and Responsibilities

Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. Under this alternative, the per-unit fee would be based on a specific dollar value per unit of IFQ allocation. While the specific per-unit fee assessment has not been determined, a $0.05 per-unit (pound of IFQ allocation) fee is used to illustrate royalty calculations in this section.

The level of the fee to be paid could be based on a specific revenue target. The level of the fee may be change by managers as conditions in the fishery change.

5.19.B.2 Example of Actual Ex-vessel Value Determination

An IFQ fisherman receives an IFQ allocation of 10,000 lb (4,536 kg). The IFQ permit holder would bear a total royalty fee liability of $ 500.00, determined as follows: (pounds of tilefish IFQ allocation X per-unit fee) = permit holder fee (10,000 lb x $ 0.05 = $ 500.00).

5.19.B.3 Fee Payment Procedure

On or about October 31 each year, IFQ shareholders would be notified, via mail or other appropriate electronic media, of their IFQ share and allocation for the upcoming fishing year. These updated share values would reflect the results of applicable share transfers and any redistribution of shares resulting from permanent revocation of applicable permits or endorsements under 15 CFR Part 904. Royalty payment must be made in order to receive their annual IFQ allocation permit. Payments of the IFQ fee must be made electronically via the federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator. The reason for the 100-percent electronic fee collection system is to minimize paper transactions, and is due to the fact that at the present time the NMFS Northeast Regional Office is not equipped to process paper collections. Instructions for electronic payment will be made available on both the payment website and the paper bill. Payment options will include payment via a plastic card (e.g. Visa, MasterCard, Discover, etc.), or direct ACH (automated clearing house) withdrawal from a designated checking account. Payment by check will be authorized only if the Regional Administrator has determined that the geographical area or an individual(s) is affected by catastrophic conditions.

5.19.B.4 Payment Compliance

An IFQ permit holder who has incurred a fee liability would be required to pay the fee to NMFS prior to issuance of an annual IFQ allocation permit. If an IFQ permit holder has made a timely payment to NMFS of an amount less than the fee liability NMFS has determined, the IFQ permit holder has the burden of demonstrating that the fee amount submitted is correct. If, upon preliminary review of the accuracy and completeness of a fee payment, NMFS determines the IFQ permit holder has not paid a sufficient amount,

NMFS would notify the IFQ permit holder by letter. NMFS would explain the discrepancy and the IFQ permit holder would have 30 days to either pay the remaining amount that NMFS has determined should be paid or provide evidence that the amount paid is correct. If the IFQ permit holder submits evidence in support of his or her payment, NMFS will evaluate it and, if there is any remaining disagreement as to the appropriate IFQ fee, prepare a Final Administrative Determination (FAD). The FAD would set out the facts, discuss those facts within the context of the relevant agency policies and regulations, and make a determination as to the appropriate disposition of the matter. An FAD would become a final agency action. If the FAD has determined that the IFQ permit holder is out of compliance, the following conditions would exist: The IFQ permit holder could not transfer any IFQ, and the IFQ permit holder could not receive IFQ by transfer. An IFQ permit holder could pay, under protest, the disputed fee difference in order to avoid permit transfer restrictions. If the final agency action determines that the IFQ permit holder owes additional fees and if the IFQ permit holder has not paid such fees, all IFQ permit(s) held by the IFQ permit holder will be invalid until the required payment is received by NMFS. If NMFS does not receive such payment within 30 days of the issuance of the final agency action, NMFS would refer the matter to the appropriate authorities within the U.S. Treasury for purposes of collection.

5.19.B.5 Annual IFQ Report

An annual IFQ report for each IFQ shareholder would be generated. The report would include quarterly and annual information regarding the amount of IFQ shares allocated to permit holders, the associated royalty fees, and the status of those fees.

5.19.B.6 Limited Access System Administrative Fund (LASAF)

The royalties collected under a per-unit fee system would go to the LASAF (the same fund used to deposit process from cost recovery programs). However, funds collected from a royalty program are subject to annual appropriations while the funds collected via cost recovery programs are to be available without appropriations or fiscal year limitations. In other words, while the Council has the opportunity to collect royalties in a manner that is not subject to the constraints under the cost recovery program (3-percent ex-vessel value limitation), there is no guarantee that the funds will be appropriated for use in the fishery (NMFS 2007).

5.19.C Alternative 19C: A percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder directly pays

5.19.C.0 Alternative 19C

This alternative would implement a fee collection system for royalties similar to the fee and cost recovery system presented under alternative 6B. An IFQ permit holder would incur a royalty fee liability for every pound of IFQ tilefish that he or she lands. The IFQ permit holder would be responsible for self-collecting his or her own fee liability for all his or her IFQ tilefish landings. The IFQ permit holder would be responsible for submitting this payment to NMFS in order to receive their annual IFQ permit. The dollar amount of the fee due would be determined by multiplying the IFQ royalty fee

percentage by the actual ex-vessel value of each IFQ landing made on a permit. Managers would determine the fee to be paid by fishery participants prior to the fishing season. The level of the fee to be paid could be based on a specific revenue target.

5.19.C.1 Fee Determination and Responsibilities

Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. Under this alternative, the royalty fee would be based on a specific percentage at the start of each fishing year. While the specific percentage fee assessment has not been determined, a 2-percent fee is used to illustrate royalty calculations in this section.

The level of the fee to be paid could be based on a specific revenue target. The level of the fee may be change by managers as conditions in the fishery change. NMFS would encourage IFQ permit holders to set aside the amount of the fees throughout the fishing year in order to facilitate a lump sum payment by March 1 of the following fishing year. Early payments would be allowed but would not relieve a permit holder of associated reporting requirements.

5.19.C.2 Calculating Ex-vessel Value

The ex-vessel value of an IFQ landing would equal the sum of all payments of monetary worth made to fishermen for the sale of the fish. This would include any retro-payments (e.g., bonuses, delayed partial payments, post-season payments) made to the IFQ permit holder for previously landed tilefish. Retro-payments would be part of the ex-vessel value and as such have a fee liability. If they were received after the initial payment, but during the same fishing year, the royalty fee for those retro-payments also would be due by the following March 1. If retro-payments were received by IFQ permit holders during the year following the fishing season when those fish were landed, then royalty fees associated with those post-season retro-payments would be due the next March 1.

5.19.C.3 Actual Ex-vessel Value

Throughout this discussion, ‘‘value’’ refers to the worth, in U.S. dollars, of any amount of landed IFQ tilefish as determined by the sale, or potential economic return for the sale, of those fish. ‘‘Price’’ is the worth in U.S. dollars, for 1 lb (approximately 0.45 kg) of landed IFQ fish. Therefore, in this context, value and price only mean the same thing when describing the worth of 1 lb (approximately 0.45 kg) of IFQ fish when sold. For purposes of calculating IFQ royalty fees, NMFS would utilize actual ex-vessel value. Actual ex-vessel value would be the amount of money an IFQ permit holder received as payment for his or her IFQ fish sold as reported by a federally permitted dealer. In other words, this ex-vessel value amount will not be averaged with the other dealer prices for the purpose of calculating cost recovery fees.

5.19.C.4 Fees Based on Actual Ex-vessel Value

Under this alternative, the actual value of landed IFQ fish would be determined when tilefish are actually sold. The IFQ permit holder could calculate his or her fee liability for landed fish based on the actual monetary value received and reported to NMFS by the dealer. The fee amount would be the product (in U.S. Dollars) of multiplying that actual

ex-vessel value by the fee percentage (approximately 0.02). The following example shows how an IFQ permit holder would adjust the calculation by NMFS of fee liabilities.

5.19.C.5 Example of Actual Ex-vessel Value Determination

An IFQ fisherman makes a landing of IFQ tilefish in June that results in a debit of 10,000 lb (4,536 kg) whole (live) weight from his or her tilefish IFQ permit. He or she sells all the fish to a federally permitted dealer. The dealer reports the landing as either whole or gutted (dressed) to NMFS. If the landed fish are sold gutted then NMFS will convert the ITQ landings to whole (live) weight via the standard conversion factor of 1.09 for the purposes of monitoring the IFQ quota. With an IFQ fee percentage of 2-percent and an actual price of $1 pound, the IFQ permit holder would bear a total fee liability of $200.00 for the landing, determined as follows: (tilefish landed weight X price per lb) X fee percentage = permit holder fee (10,000 lb X $1.00 lb X 0.02 = $ 200.00).

The IFQ permit holder's fee liability would be based only on the actual price paid by the dealer regardless if the product was landed whole or gutted. The conversion to whole weight by NMFS is only for the purposes of monitoring IFQ landings, not fees.

5.19.C.6 Fee Payment Procedure

By January 1 of each year NMFS will mail a bill for the IFQ fee from the previous fishing year to each IFQ permit holder. Bills may also be made available electronically via the internet. Payment of the IFQ fee must be made by March 1. Payments of the IFQ fee must be made electronically via the federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator. The reason for the 100-percent electronic fee collection system is to minimize paper transactions, and is due to the fact that at the present time the NMFS Northeast Regional Office is not equipped to process paper collections. Instructions for electronic payment will be made available on both the payment website and the paper bill. Payment options will include payment via a plastic card (e.g. Visa, MasterCard, Discover, etc.), or direct ACH (automated clearing house) withdrawal from a designated checking account. Payment by check will be authorized only if the Regional Administrator has determined that the geographical area or an individual(s) is affected by catastrophic conditions.

5.19.C.7 Payment Compliance

An IFQ permit holder who has incurred a fee liability would be required to pay the fee to NMFS by March 1 of the fishing year following the fishing year in which the landing was made. If an IFQ permit holder has made a timely payment to NMFS of an amount less than the fee liability NMFS has determined, the IFQ permit holder has the burden of demonstrating that the fee amount submitted is correct. If, upon preliminary review of the accuracy and completeness of a fee payment, NMFS determines the IFQ permit holder has not paid a sufficient amount, NMFS would notify the IFQ permit holder by letter. NMFS would explain the discrepancy and the IFQ permit holder would have 30 days to either pay the remaining amount that NMFS has determined should be paid or provide evidence that the amount paid is correct. If the IFQ permit holder submits evidence in support of his or her payment, NMFS will evaluate it and, if there is any remaining disagreement as to the appropriate IFQ fee, prepare a Final Administrative Determination

(FAD). The FAD would set out the facts, discuss those facts within the context of the relevant agency policies and regulations, and make a determination as to the appropriate disposition of the matter. An FAD would become a final agency action. If the FAD has determined that the IFQ permit holder is out of compliance, the following conditions would exist: The IFQ permit holder could not transfer any IFQ, and the IFQ permit holder could not receive IFQ by transfer. An IFQ permit holder could pay, under protest, the disputed fee difference in order to avoid permit transfer restrictions. If the final agency action determines that the IFQ permit holder owes additional fees and if the IFQ permit holder has not paid such fees, all IFQ permit(s) held by the IFQ permit holder will be invalid until the required payment is received by NMFS. If NMFS does not receive such payment within 30 days of the issuance of the final agency action, NMFS would refer the matter to the appropriate authorities within the U.S. Treasury for purposes of collection.

5.19.C.8 Annual IFQ Report

An annual IFQ report for each IFQ shareholder would be generated. The report would include quarterly and annual information regarding the amount and value of IFQ tilefish landed during the fishing year, the associated royalty fees, and the status of those fees.

5.19.C.9 Limited Access System Administrative Fund (LASAF)

Same as outlined in section 5.19.B.6 above.

5.19.D Alternative 19D: A Percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder pays via a federally permitted dealer

5.19.D.0 Alternative 19D

This alternative would implement a fee collection system for royalties similar to the fee and cost recovery system presented under alternative 6C. Although the ultimate IFQ payment responsibility lies with the IFQ shareholder, this system would require the federally permitted dealer to collect the fee from the IFQ shareholder at the point of purchase for later submission to NMFS.

5.19.D.1 Fee Determination and Responsibilities

Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. Under this alternative, the royalty fee would be based on a specific percentage at the start of each fishing year. While the specific percentage fee assessment has not been determined, a 2-percent fee is used to illustrate royalty calculations in this section.

The IFQ allocation holder specified in the documented tilefish IFQ dealer landing report is responsible for payment of the applicable cost recovery fees. A dealer who receives tilefish subject to the IFQ program is responsible for collecting the applicable cost recovery fee for each IFQ landing from the IFQ allocation holder specified in the IFQ landing transaction report. Such dealer is responsible for submitting all applicable cost recovery fees to NMFS on a quarterly basis. The fees are due and must be submitted,

using the federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator, no later than 30 days after the end of each calendar-year quarter; however, fees may be submitted at any time before that deadline. Fees not received by the deadline are delinquent.

5.19.D.2 Calculating Ex-vessel Value

The ex-vessel value of an IFQ landing would equal the sum of all payments of monetary worth made to fishermen for the sale of the fish. This would include any retro-payments (e.g., bonuses, delayed partial payments, post-season payments) made to the IFQ permit holder for previously landed tilefish. Retro-payments would be part of the ex-vessel value and as such have a fee liability. If they were received after the initial payment, but during the same fishing year, the cost recovery fee for those retro-payments also would be due in the quarter inn which they were paid.

5.19.D.3 Actual Ex-vessel Value

Same as outlined in section 5.19.C.3 above.

5.19.D.4 Fees Based on Actual Ex-vessel Value

Same as outlined in section 5.19.C.4 above.

5.19.D.5 Example of Actual Ex-vessel Value Determination

Same as outlined in section 5.19.C.5 above.

5.19.D.6 Fee Payment Procedure

For each IFQ dealer, NMFS would make available, an end-of-quarter statement of royalty fees that are due. The dealer is responsible for submitting the royalty fee payments using the federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator. Authorized payments methods are credit card, debit card, or automated clearing house (ACH). Payment by check would be authorized only if the Regional Administrator has determined that the geographical area or an individual(s) is affected by catastrophic conditions.

5.19.D.7 Payment Compliance

The following procedures would apply to an IFQ dealer whose cost recovery fees are delinquent.

(A) On or about the 31st day after the end of each calendar-year quarter, the Regional Administrator would notify the dealer indicating the applicable fees are delinquent; the dealer's permit has been suspended pending payment of the applicable fees; and notice of intent to cancel the dealer's Federal permit.

(B) On or about the 61st day after the end of each calendar-year quarter, the Regional Administrator would mail to a dealer whose cost recovery fee payment remains delinquent, official notice documenting the dealer's Federal permit has been cancelled.

(C) On or about the 91st day after the end of each calendar-year quarter, the Regional Administrator would refer any delinquent IFQ dealer royalty fees to the appropriate authorities for collection of payment.

5.19.D.8 Annual IFQ Report
An annual IFQ report for each IFQ shareholder and participating dealer would be generated. The report would include quarterly and annual information regarding the amount and value of IFQ tilefish received by the dealer, the associated royalty fees, and the status of those fees. The dealer's acceptance of this report constitutes compliance with the annual dealer IFQ reporting requirement.

5.19.D.9 Limited Access System Administrative Fund (LASAF)
Same as outlined in section 5.19.B.6 above.

5.19.E Alternative 19E: <u>Considered but rejected for further analysis</u> - Implement an auction system for the collection of royalties if an IFQ program is put in place for the commercial tilefish fishery

The Council considered an auction system for the collection of royalties in the tilefish fishery. However, the Council decided not to proceed with such royalty collection system for the following reasons. First, the overall harvest level in the tilefish fishery is very small. The current tilefish TAL is less than 2 million pounds and the estimated MSY is 4.2 million pounds (when the stock is fully recovered). Second, the overall number of participants in the tilefish fishery is very small. When the FMP was first implemented, 4 vessels qualified for full-time tier 1 limited access permit; 4 for full-time tier 2 permit; and 42 for part-time permit. However, for the 2001 through 2005 period, on average, less than 10 vessels have landed the bulk (over 80 percent) of the tilefish TAL. Third, geographically, the majority of the tilefish landings occur in a few ports. For example, for the 2004 through 2005 period, over 93 percent of the tilefish landings occurred in the ports of Montauk (NY), Hampton Bays (NY), Long Beach/Barnegat Light (NJ), and Point Judith (RI). The Council considered that giving the limited number of fishery participants and ports of landings potential collusion among fishery participants could occur. This will in turn not allow for efficient price discovery and could potential limit the amount of royalties collected to a level below the administrative cost of implementing the royalty collection system. Lastly, the Council was concern that an auction system could prevent the participation of individuals with limited access to capital.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

This section serves to identify and describe the *valued ecosystem components* (VECs; Beanlands and Duinker 1984) that are likely to be directly or indirectly affected by the actions proposed in this document. These VECs comprise the affected environment within which the proposed actions will take place. Following the guidance provided by the Council on Environmental Quality (CEQ 1997), the VECs are identified and described here as a means of establishing a baseline for the impact analysis that will be presented in the subsequent document section (Analysis of Impacts; see section 7.0). The significance of the various impacts of the proposed actions on the VECs will ultimately be determined from a cumulative effects perspective, that is, in the context of other past, present, and reasonably foreseeable future actions and their additive impacts on these VECs.

Identification of the Selected Valued Ecosystem Components

As indicated in CEQ (1997), one of the fundamental principles of cumulative effects analysis, is that "… the list of environmental effects must focus on those that are truly meaningful." As such, the range of VECs is described in this section is limited to those for which a reasonable likelihood of meaningful impacts is expected. These VECs are listed below.

1. Managed resource - golden tilefish stock
2. Non-target species
3. Habitat including EFH for the managed resources and non-target species
4. Endangered and protected species
5. Human communities

Golden tilefish (the managed resource VEC) is managed under the Tilefish FMP. Overall changes to the FMP, such as those proposed in this amendment are not expected to have the potential to directly affect the condition of the stock. That is, the proposed management actions are not expected to either reduce or expand the direct harvest or bycatch of this species. Nevertheless, the proposed recreational management measures presented in this document are intended to incorporate mechanisms to control and address potential future increases in tilefish recreational landings. While recreational landings are very small and there is no substantial directed recreational fishery (see section 6.1), anecdotal information indicates that recreational interest in this fishery may be growing, and as such, addressing this issue could likely have a positive impact to the overall management program. In addition, some of the management actions contained in this document could potentially improve the collection of fishery dependent data used to conduct the stock assessment for this species.

Similarly, management actions presented in this amendment are not expected to change the distribution and/or magnitude of fishing effort for the managed resource that could indirectly affect the *non-target species* VEC (species incidentally captured as a result of fishing activities for the managed resources), the *habitat* VEC (especially types

vulnerable to activities related to directed fishing for the managed resource), and the *protected species* VEC.

The human communities VEC could be affected directly or indirectly through a variety of complex economic and social relationships associated with the either the managed species or any of the other VECs. However, the changes in social structure and cultural fabric that may have occurred under implementation of limited access are already largely in place. Some of the basis for implementing an IFQ system was already established when limited access was implemented in 2001. At that time, issues of status with regard to legitimacy of claims to participation were discussed and some decisions made. However, Individual Fishing Quotas (IFQs) are much more fixed in that they define not just access but level of access. Thus, they raise strong issues of equity and dependence. For fishermen, both equity and dependence are tied to concerns over maintaining their way of life, and as such can be highly emotional issues in addition to critical financial ones.

The fairness of the initial allocation along with transferability and accumulation of shares are some of the most contentious issues that need to be considered when developing IFQ programs (NRC 1999). When IFQ programs are considered, there is concern by many people that the program can generate windfall profits and increase profitability for a few individuals. In addition, apprehension also exists in the minds of many people due to the potential for quota consolidation in the hand of a few individuals (and potential reduction in employment opportunity for vessel crew members), the potential costs of new fishermen to enter the fishery, and the disruption of fishing communities and elimination of fishing traditions. Measures regarding transferability rules (alternative 7.2) and share accumulation (alternative 7.4) address some of these concerns by evaluating the consolidation of quotas and transfer of fishing privileges (quota shares) to other people; these alternatives, in addition the alternatives evaluating other elements of the IFQ program (alternatives 7.3 and 7.5 to 7.8) are intended to develop an IFQ program that addresses these issues while achieving specific goals and objectives for the tilefish fishery. These are evaluated in order to assist the Council design an IFQ system that balances socioeconomic and biological tradeoffs and improves the ability to achieve the goals and objectives of the FMP. Lastly, this action would allow for the expansion of the management measures that can be addressed via the framework process. As such, this action would allow the Council to address potential changes in the tilefish recreational fishery and facilitate any necessary modifications of the IFQ program.

Temporal Scope of the Selected VECs

The tilefish fishery began in 1879, but collapsed shortly thereafter, with mass mortalities in 1882 (Steimle et al. 1999). The stock began to recover in the late 1890s with an abundance of young fish (Bumpus 1899; Steimle et al. 1999). The species was again being fished and promoted by the United States Bureau of Commercial Fisheries when catches were first recorded in 1915 (325,000 pounds). A total of 10 million pounds were taken in 1916, which is the largest annual catch to date, but only 10,000 pounds were reported landed in 1920 (MAFMC 2000). Freeman and Turner (1977) stated that it was

the market conditions that dictated the amount of fishing in the early years and not the abundance of tilefish. Landings were low during WW II but then rose during the 1950s to between 3 and 4 million pounds, followed by a decline in the late 1960s to less than 100,000 pounds (MAFMC 2000). Landings immediately after WW II were mainly by otter trawls. Poor prices in the market and increased competition for the available fish on the southern New England grounds from foreign vessels led fishermen away from fishing for tilefish. By the late 1960's tilefish were taken only incidentally with other, more sought after species of fish (Freeman and Turner 1977). Landings increased during the 1970's as the longline fleet developed and peaked in 1979 at 8.7 million pounds. Through the mid 1980's landings were around 4 million pounds, but jumped significantly to 7 million in 1987 and then plummeted to only 1 million pounds in 1989 (MAFMC 2000). For the 1990 through 2005 period, landings have ranged from 1.1 million pounds in 1999 to 3.9 million pounds in 1997 (Table 3). Landings of this species are more accurate beginning in 1987 due to better reporting of landings by species. Observer coverage for this species started in 2004. There have been a total of 8 observed tilefish trips during the 2004 through 2006 (as of June 13) period.

As indicated before, the FMP which initiated the management for this species became effective November 1, 2001 (66 FR 49136; September 26, 2001) and included management and administrative measures to ensure effective management of the tilefish resource. The FMP established a TAL system as the primary control on fishing mortality. The FMP also implemented a limited entry program and a tiered commercial quota allocation of the TAL. Other elements of the FMP include permits and reporting requirements for commercial vessels, operators, and dealers.

While the effects of the historical fisheries are considered, the temporal scope of past and present actions for managed resources, non-target species, habitat and human communities is primarily focused on actions that have occurred after FMP implementation because use of this timeframe demonstrates changes to resources and human communities that have resulted through management under the Council process. For endangered and other protected species, the scope of past and present actions (see section 6.4) is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals.

The temporal scope of future actions for all five VECs, which includes the measures proposed by this amendment, extends five years into the future. This period was chosen because the dynamic nature of resource management and lack of information on projects that may occur in the future makes it difficult to predict impacts beyond this timeframe with any certainty.

Table 3. Tilefish commercial landings (in '000 lb live weight) from Maine through Virginia, 1990-2005.

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	Total	Percent
1990	16	-	16	42	2	1,335	512	-	4	*	1,927	5.2%
1991	9	-	2	41	1	1,588	978	-	2	*	2,621	7.0%
1992	18	*	6	322	6	2,124	1,168	-	-	*	3,644	9.8%
1993	129	*	32	609	10	2,210	1,069	-	*	2	4,061	10.9%
1994	55	*	6	112	-	1,279	281	-	*	*	1,733	4.6%
1995	19	-	2	63	2	1,215	167	-	-	*	1,468	3.9%
1996	13	-	*	194	12	2,016	233	-	2	*	2,470	6.6%
1997	29	-	*	143	9	3,294	432	-	*	*	3,907	10.5%
1998	33	-	8	553	18	1,962	341	-	*	*	2,915	7.8%
1999	7	*	4	189	3	798	94	-	*	*	1,095	2.9%
2000	14	-	*	138	1	916	36	-	*	*	1,105	3.0%
2001	*	-	*	73	2	1,835	9	-	*	*	1,919	5.1%
2002	9	-	20	159	12	1,593	72	-	-	5	1,870	5.0%
2003	4	-	27	231	11	1,755	459	-	-	3	2,490	6.7%
2004	*	-	258	305	56	1,335	724	-	*	2	2,680	7.2%
2005	*	-	4	29	3	1,117	306	-	*	3	1,462	3.9%
Total 90-05	355	0	385	3,203	148	26,372	6,881	0	8	15	37,367	
Percent 90-05	0.95%	0.00%	1.03%	8.57%	0.40%	70.58%	18.41%	0.00%	0.02%	0.04%	100.00%	
Mean 90-05	22	0	24	200	9	1,648	430	0	1	1	2,335	
Total 96-05	109	0	321	2,014	127	16,621	2,706	0	2	13	21,913	
Percent 96-05	0.50%	0.00%	1.46%	9.19%	0.58%	75.85%	12.35%	0.00%	0.01%	0.06%	100.00%	
Mean 96-05	11	0	32	201	13	1,662	271	0	0	1	2,191	

Note: * = less than 1,000 pounds. - = no landings. Source: NMFS unpublished dealer data.

Geographic Scope of the Selected VECs

The overall geographic scope for the *managed resources*, *non-target species*, *habitat*, and *endangered and protected species* can be considered as the total range of these VECs in the Western Atlantic Ocean. The management unit identified in the FMP (see section 4.3) covers a subset of the overall geographic scope, and is defined as the area under United States jurisdiction in the Atlantic Ocean north of the Virginia/North Carolina border. The analyses of impacts presented in this amendment focuses primarily on actions related to the harvest of the managed resources. Therefore, a more limited geographic area is used to define the core geographic scope within which the majority of harvest effort for the managed resources occurs. The shaded areas in Figure 10 illustrate the extent of these various geographic areas.

Because the potential exists for far-reaching sociocultural or economic impacts on U.S. citizens who may not be directly involved in fishing for the managed resources, the overall geographic scope for *human communities* is defined as all U.S. human communities. Limitations on the availability of information needed to measure sociocultural and economic impacts at such a broad level necessitate the delineation of core boundaries for the human communities. These are defined as those U.S. fishing communities directly involved in the harvest of the managed resource. These communities were found to occur in coastal states from Maine to North Carolina. Communities heavily involved in the managed fisheries are identified in the port and community description (see section 6.5) and are indicated in Figure 11. The directionality and magnitude of impacts on human communities directly involved in the tilefish fishery will be a function of their level of involvement and dependence on this fishery.

6.1 Description of the Managed Resources

In the description of the managed resources VEC presented here, the focus is on stock status and those fishery activities that *directly* affect stock status. These include the harvest of a given species, as well as discarding. The life history and ecological relationships of tilefish were addressed in detail in section 2.1 of the FMP and additional information is presented in Appendix F**.** A brief description of the stock is presented in the following three paragraphs for informative purposes. Additionally, specific life stage habitat requirements are presented in section 6.3 (Description of Habitat, Including Essential Fish Habitat Analysis). Fishery activities and non-fishing activities that may affect habitat quality are considered to indirectly affect the managed resources. These are also considered in section 6.3.

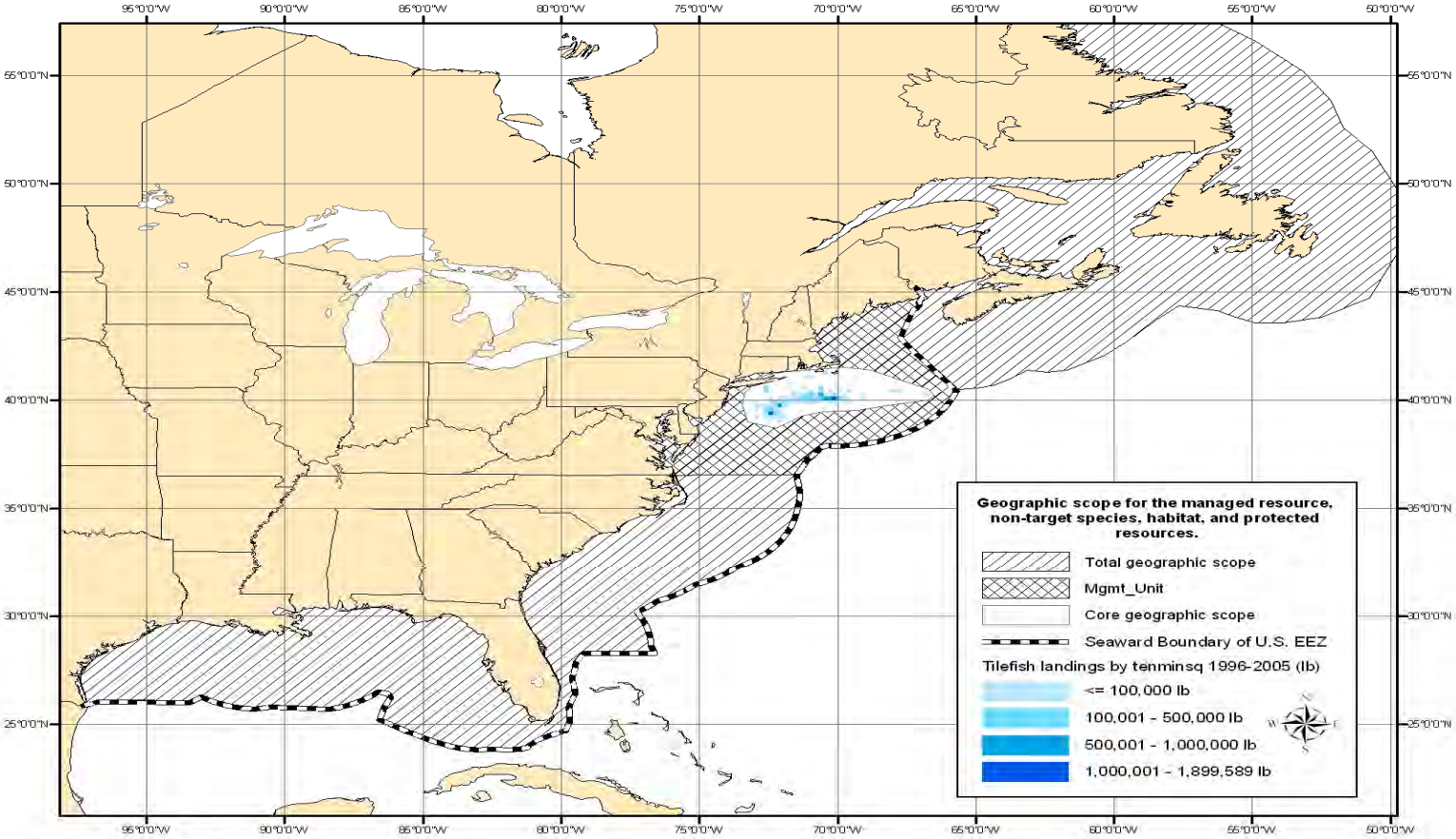

Figure 10. Geographic scope of the VECs, not including human communities.

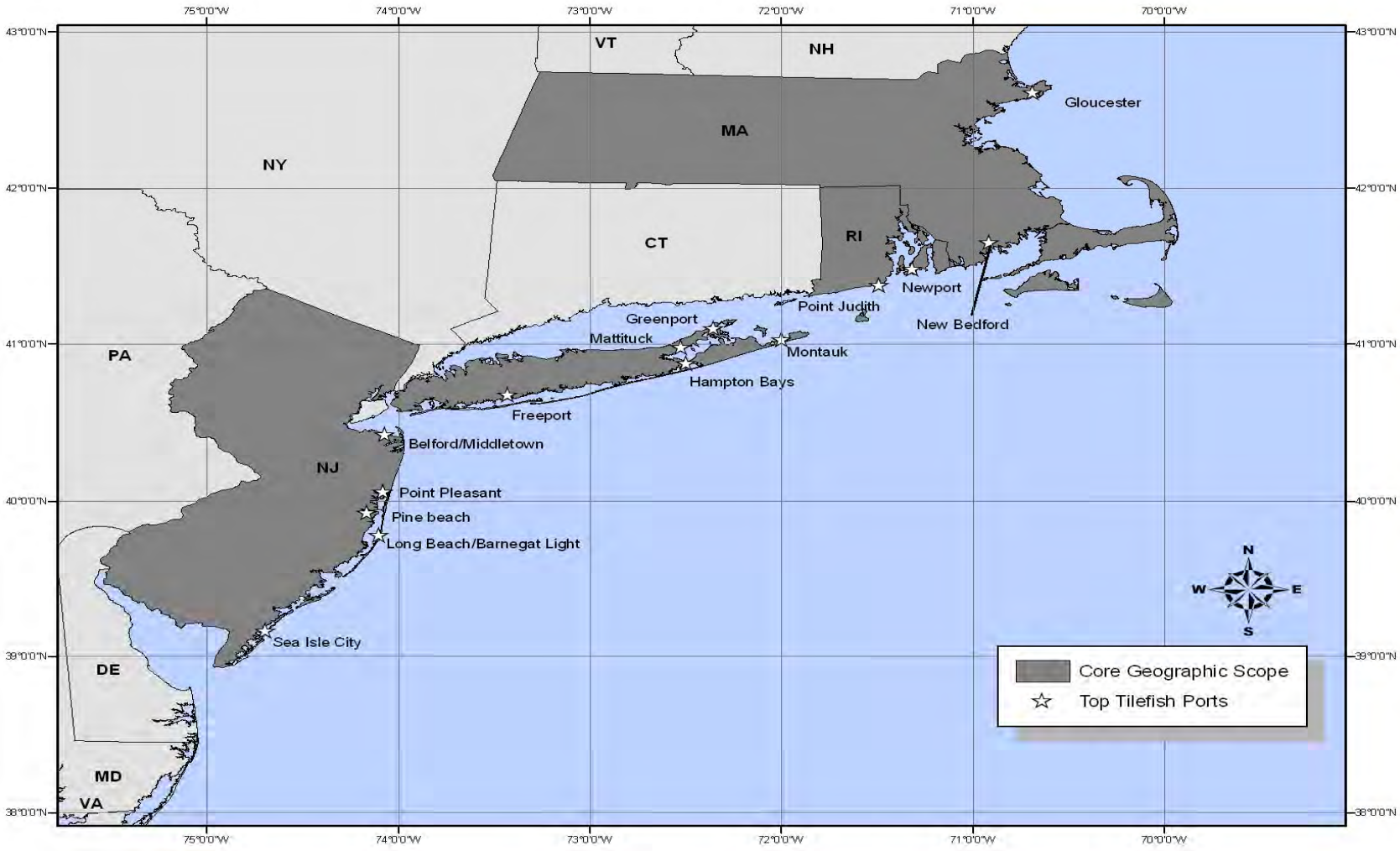

Figure 11. Core geographic scope of the human communities VEC.

Tilefish (*Lopholatilus chamaeleonticeps*) are found along the outer continental shelf and slope from Nova Scotia, Canada to Surinam on the northern coast of South America (Dooley 1978 and Markle et al. 1980) in depths of 250 to 1500 feet. In the southern New England/mid-Atlantic area, tilefish generally occur at depths of 250 to 1200 feet and at temperatures from 48°F to 62°F or 8.9^{o}C to 16.7^{o}C (Nelson and Carpenter 1968; Low et al. 1983; Grimes et al. 1986). Fish have been observed from Norfolk to Lydonia Canyons, but the majority of the fishery is concentrated between Hudson and Veatch Canyons.

Tilefish are abundant in the southern New England/mid-Atlantic area, where a commercial fishery has existed since 1879; off southeastern Florida; and in the Gulf of Mexico. Over the range of tilefish, the distribution can be discontinuous with gaps occurring where benthic substrates are unsuitable for building and maintaining burrows (Steimle et al. 1999). Katz et al. (1983) studied stock structure of tilefish from off the Yucatan Peninsula in Mexico to the southern New England region using both biochemical and morphological information. They identified two stocks -- one in the mid-Atlantic/southern New England and the other in the Gulf of Mexico and the south of Cape Hatteras (see footnote 7). Sulak and Ross (1996) reported that the ichthyofauna on the upper continental slope off Cape Hatteras was less diverse than on the upper slope off Virginia, and that individuals off Cape Hatteras were smaller and less active than their conspecifics off Virginia. This phenomenon (which they termed 'Lilliputian') was associated with low oxygen at the sediment surface and a high flux of particulate organic carbon from surface waters (Steimle et al. 1999). This upper slope, hypoxic area may be the cause of tilefish stock separation. Management of the stock south of the Virginia/North Carolina border is covered by the South Atlantic Fishery Management Council snapper grouper FMP.

The Magnuson-Stevens Act's National Standard 1 Guidelines establish specific stock status determination criteria for measuring the condition of a managed fishery resource. In the description of the managed resources VEC presented here, the conditions of the stocks, past, present or future, are described in comparison to the stock status determination criteria.

Specification of status determination criteria (Magnuson-Stevens National Standard 1):

Each FMP must specify, to the extent possible, objective and measurable status determination criteria for each stock or stock complex covered by that FMP and provide an analysis of how the status determination criteria were chosen and how they relate to reproductive potential. Status determination criteria must be expressed in a way that enables the Council and the Secretary to monitor the stock or stock complex and determine annually whether overfishing is occurring and whether the stock or stock complex is overfished. In all cases, status determination criteria must specify both of the following:

1) a maximum fishing mortality threshold or reasonable proxy thereof, and

2) a minimum stock size threshold or reasonable proxy thereof.

Two categories of mortality (natural mortality: M, and fishing mortality: F) contribute to total mortality (Z), the overall rate at which fish are removed from a given population (M + F = Z). Influences on natural mortality include disease, predation, senescence and any other non-human components of the ecosystem. Many of the ecological relationships for the managed resources have been identified, however, because of the complexity of these relationships, M is generally not directly estimated on an annual basis, and in most stock assessments the analyses focuses on fishing mortality and its relationship with stock size. This approach is consistent with providing information necessary to determine the status of a stock with regard to Magnuson-Stevens Act criteria (1) and (2) above. When an assessment indicates that fishing mortality has exceeded threshold levels, overfishing is said to be occurring. When an assessment indicates that stock size has fallen below the established threshold, then the stock is considered to be overfished. In either case, the Magnuson-Stevens Act requires that management measures be put in place to mitigate these outcomes. Several of the management actions proposed in this amendment were developed as a means of improving the conditions of the managed stock by mitigating the impacts of past and/or present fishing activities on the stock.

Status of the Stock

The Northeast Fisheries Science Center's (NEFSC 2005) Southern Demersal Working Group met in June 2005 to address the terms of reference for the 41st Stock Assessment Workshop (SAW 41). The 41st Stock Assessment Review Committee (SARC) panelist reports indicated acceptance of the benchmark tilefish stock assessment.

Updated estimates of biological reference points from the ASPIC model (B_{msy} = 20.69 million pounds; F_{msy} = 0.21; and MSY = 4.38 million pounds) did not greatly change from the 1998 assessment (B_{msy} = 18.62 million pounds; F_{msy} = 0.22; and MSY = 4.12 million pounds). For both assessments, F_{max} was the same (0.14). The updated stock assessment indicates that the stock is not overfished and overfishing is not occurring.

Fishing mortality was above F_{msy} for the 1978 to 1987 period. For the 1989 to 1998 period fishing mortality fluctuated above and below the F_{msy}. However, since 1999, fishing mortality has been below F_{msy}. In 2004, fishing mortality was 0.18 or approximately 14 percent below F_{msy}.

Stock biomass was above B_{msy} for the 1978 to 1980 period, but since then it has been below B_{msy}. The stock biomass was below ½ B_{msy} from 1988 through 2001; however, the biomass has increased to 14.80 million pounds or 72 percent of B_{msy}.

Estimates of recruitments for tilefish do not exist. Nevertheless, according to the 41st SAW assessment summary "strong recruitment events are evident in the size composition of the commercial landings. Most of the catch in 2002 and 2004 appears to have been from the 1999 year class with no signs of recruitment after this cohort."

Fishery Activities that Directly Affect Stock Status

Commercial Fishery

A brief historical description of the tilefish fishery is presented above (Temporal Scope of the Selected VECs). The modern tilefish longline fishery was developed in the 1970s after several periods of fishery contractions and expansions.

Tilefish landings from Maine through Virginia are summarized in Table 3. For the 1996 through 2005 period, tilefish landings have ranged from 1.1 million pounds in 1999 to 3.9 million pounds in 1997. On average, for the 1996 through 2005 period, about 2.2 million pounds of tilefish were landed. Commercial landings in 2005 were approximately 1.5 million pounds or 33 percent below the average for 1996 through 2005.

The directed commercial fishery for tilefish is largely prosecuted by longline. According to 2005 VTR data, 100% of the tilefish landed by directed commercial trips employed longline gear. Otter trawls (bottom) may also be used, but have limited utility because of the habitat preferred by tilefish. Otter trawls (bottom) are only effective where the bottom is firm, flat, and free of obstructions. Soft mud bottom, rough or irregular bottom, or areas with obstructions, which are those areas most frequented by tilefish, are not conducive to bottom trawling. However, tilefish are occasionally taken incidental to other directed fisheries, such as the trawl fisheries for lobster and flounder (Freeman and Turner 1977) and hake, squid, mackerel and butterfish (MAFMC 2000).

Tilefish are primarily caught by longline and bottom otter trawl. Based on dealer data from 1996 through 2005, the bulk of the tilefish landings are taken by longline gear (89%) followed by bottom trawl gear (9%). No other gear had any significant commercial landings. Minimal catches were also recorded for dredge (other), lobster pot/traps, and gillnets (Table 4).

Bottom-tending otter trawls harvested approximately 1.97 million lb live weight, or 9% of the tilefish landings, during the 10-year period, 1996-2005 (Table 4). A directed otter trawl fishery for tilefish was initiated in the late 1940s, but competition and market conditions caused this fishery to cease by the late 1960s (Freeman and Turner 1977). Tilefish are also an important component of the bycatch in the groundfish fishery, particularly for offshore hake, as well as the squid, mackerel, butterfish fisheries. According to a NMFS port agent in Rhode Island (Chiarella pers. comm. 2006), most of the Rhode Island's tilefish commercial landings are a bycatch from the squid fishery in the Hudson Canyon.

Table 4. Tilefish commercial landings ('000 lb live weight) by gear, Maine through Virginia, 1996-2005 combined.

Gear	Pounds	Percent
Otter Trawl Bottom, Fish	1,973	9
Otter Trawl Bottom, Scallop	*	*
Otter Trawl Bottom, Shrimp	*	*
Otter Trawl Bottom, Other	*	*
Otter Trawl, Midwater	*	*
Gillnet, Drift, Other	88	*
Pots and Traps, Lobster, Inshore/Offshore Combined	26	*
Pots and Traps, Fish/Other Combined	9	*
Lines Hand, Other	179	*
Lines Long Set with Hooks	19,501	89
Lines Trawl, Other	6	*
Dredge Scallop, Sea	*	*
Dredge, Other	4	*
Unknown, Other Combined Gears	132	*
All Gear	21,918	100

Note: * = less than 1,000 pounds or less than 1 percent.
Source: NMFS unpublished dealer data.

Temporal and Geographic Patterns of Commercial Tilefish Harvest

The tilefish fishery takes place year-round (Table 5). It is typically most intense from October to June when the market value and catch rates are the highest.

Based on dealer data, over 97 percent of the landings occurred in the following three states: New York (76%), New Jersey (12%), and Rhode Island (9%; Table 5). As indicated above, the vast majority of tilefish are taken by longline gear followed by bottom otter trawl (Tables 4 and 6). Rhode Island and Connecticut were the only states whose primary gear for tilefish was bottom otter trawl with 58 percent and 98 percent of their landings, respectively, by that gear during the past decade (Table 7). Longline landings for the three states with the greatest landings were approximately 96 percent of New York's total landings, 95 percent of New Jersey's total landings, and 41 percent of Rhode Island's total landings during the past decade.

Nearly 67 percent of the most recent landings (1996 through 2005) were caught in statistical area 537, which includes Atlantis and Block Canyons; statistical area 616 had 22 percent of the landings, which includes Hudson Canyon; and statistical area 613 had 5 percent of the landings. Less than 5 percent of the total landings were caught in statistical

areas 525 (includes Oceanographer, Lydonia, and Gilbert Canyons) and 526 (includes Hydrographer and Veatch Canyons; Table 8 and Figure 12).

Commercial Discards

According to VTR data, very little (< 0.01%) discarding was reported by longline vessels that targeted tilefish for the 1996 through 2005 period (Table 9). In addition, the 2005 stock assessment indicates that there is little reported discarding of tilefish in the trawl fishery according to VTR data. Reported tilefish otter trawls discards for the 1994 through 2004 period ranged from less than 1,000 pounds for most years to 28,713 pounds in 2003 (SAW 41, NEFSC 2005).

According to the latest stock assessment, dependable discard estimates for tilefish do not exist. Discard to keep ratios in the trawl fishery for the 1989 through 2004 period ranged from zero in 1993 to 1.4 in 2001. Observer data also indicates that from 1989 through 2004, less than 15 trips were sampled that caught tilefish in twelve of the sixteen year period (SAW 41, NEFSC 2005).

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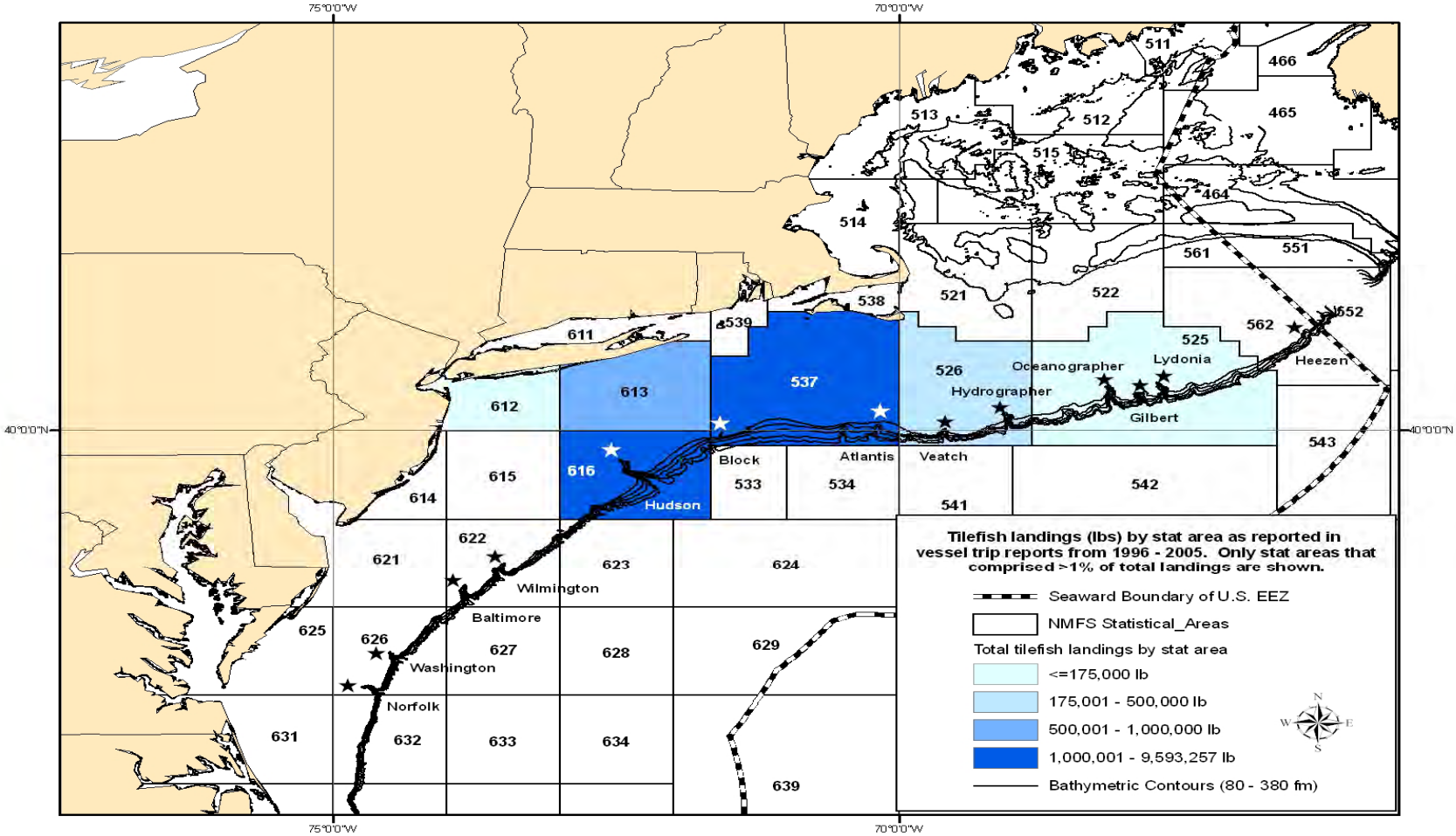

Figure 12. Tilefish landings by statistical area, 1996 through 2005.

Table 5. Tilefish commercial landings (in '000 lb live weight) by month and state, 1996-2005 combined.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
State													
ME	5	9	9	15	21	18	3	3	6	10	2	10	111
NH	-	-	-	-	-	*	*	*	-	-	-	-	0
MA	23	38	106	73	12	64	4	*	*	*	1	2	323
RI	287	444	527	201	76	30	61	48	52	56	104	129	2,015
CT	16	33	58	11	3	*	*	*	*	1	1	2	125
NY	1,251	1,684	1,650	1,591	1,331	1,189	1,119	1,323	1,265	1,470	1,167	1,579	16,619
NJ	113	192	574	413	301	177	130	178	163	138	206	121	2,706
MD	-	-	*	*	1	*	*	*	*	*	*	-	1
VA	*	1	*	*	*	4	*	*	2	3	2	*	12
All	1,695	2,401	2,924	2,304	1,745	1,482	1,317	1,552	1,488	1,678	1,483	1,843	21,912

Note: * = less than 1,000 pounds; - = no landings.
Source: NMFS unpublished dealer data.

Table 6. Tilefish commercial landings by year and gear (% of year total), Maine through Virginia combined, 1996-2005.

Gear	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Otter Trawl Bottom, Fish	9.9	4.5	10.7	5.8	8.9	7.1	9.9	11.6	16.3	2.2
Otter Trawl Bottom, Scallop	-	-	-	-	-	-	-	0.0	0.0	-
Otter Trawl Bottom, Shrimp	-	-	0.0	-	0.0	-	-	-	-	-
Otter Trawl Bottom, Other	0.0	-	-	-	-	-	-	-	-	0.0
Otter Trawl, Midwater	-	-	-	-	-	-	-	-	0.0	0.0
Gillnet, Drift, Other	0.0	0.0	0.0	0.2	1.0	0.0	0.1	0.0	1.6	2.0
Pots and Traps, Lobster, Inshore/Offshore Combined	0.0	-	0.0	0.0	0.0	-	-	0.3	0.7	-
Pots and Traps, Fish/Other Combined	-	-	-	0.3	-	0.0	0.0	0.0	0.1	0.3
Lines Hand, Other	0.0	0.0	0.0	0.2	0.0	0.0	0.7	0.7	5.3	0.2
Lines Long Set with Hooks	90.0	95.5	89.0	93.4	89.9	92.9	89.2	87.4	75.1	88.3
Lines Trawl, Other	-	-	-	-	0.0	-	-	-	0.2	0.1
Dredge Scallop, Sea	-	0.0	-	0.0	-	-	-	-	-	-
Dredge, Other	-	-	-	-	-	-	-	-	0.0	0.3
Unknown, Other Combined Gears	0.0	-	0.3	0.1	0.2	0.0	0.1	0.0	0.8	6.7
All Gear	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: - = no landings.
Source: NMFS unpublished dealer data.

Table 7. Tilefish commercial landings by state and gear (% of state total), 1996-2005 combined.

Gear	ME	NH	MA	RI	CT	NY	NJ	MD	VA
Otter Trawl Bottom, Fish	10.2	-	16.1	58.4	97.6	3.5	0.9	-	14.6
Otter Trawl Bottom, Scallop	-	-	-	-	-	-	-	-	0.3
Otter Trawl Bottom, Shrimp	-	-	-	-	0.0	-	-	-	0.1
Otter Trawl Bottom, Other	-	-	-	0.0	0.2	-	-	0.2	-
Otter Trawl, Midwater	-	-	-	-	-	-	0.0	-	-
Gillnet, Drift, Other	7.7	100.0	0.8	0.3	-	0.0	2.6	8.9	0.0
Pots and Traps, Lobster, Inshore/Offshore Combined	-	-	7.2	0.0	-	0.0	-	-	11.8
Pots and Traps, Fish/Other Combined	-	-	-	0.0	1.0	0.0	0.0	6.8	26.5
Lines Hand, Other	0.0	-	52.9	0.0	-	0.0	0.0	9.6	10.6
Lines Long Set with Hooks	82.0	-	22.8	40.9	0.0	95.8	95.2	73.4	31.3
Lines Trawl, Other	-	-	-	-	0.6	0.0	0.0	-	-
Dredge Scallop, Sea	-	-	0.0	-	-	-	-	-	-
Dredge, Other	-	-	0.1	0.2	0.0	0.0	-	-	2.9
Unknown, Other Combined Gears	-	-	0.2	0.2	0.5	0.6	1.2	1.1	1.9
All Gear	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: - = no landings.
Source: NMFS unpublished dealer data.

Table 8. Tilefish percent landings by statistical area and year, 1996-2005.

Year	Unknown	525	526	533	537	613	616	Other
1996	19.88	0.07	5.18	0.61	44.02	1.07	27.99	1.17
1997	23.30	0.03	0.67	0.01	56.21	2.59	16.40	0.80
1998	16.22	1.25	2.12	0.04	65.86	5.45	8.53	0.54
1999	2.57	0.97	0.21	0.01	55.07	3.68	36.79	0.70
2000	0.00	0.35	3.74	0.98	47.10	2.34	43.06	2.42
2001	-	0.23	3.14	0.01	23.31	3.22	69.44	0.64
2002	-	0.55	8.63	-	35.78	15.23	39.45	0.37
2003	-	0.89	1.80	0.08	38.80	11.94	46.07	0.42
2004	-	1.02	2.58	0.01	61.54	0.71	26.04	8.09
2005	-	0.11	0.21	1.77	66.68	5.34	22.13	3.77

Note: - = no landings.
Source: NMFS unpublished vessel trip report data

Table 9. Catch disposition for directed tilefish trips[a], Maine through Virginia, 1996-2005 combined.

Common Name	Kept lbs	% species	% total	Discarded lbs	% species	% total	Total lbs	Disc: Kept Ratio
TILEFISH	17,055,154	100.00%	99.43%	254	0.00%	1.90%	17,055,408	0.00
SILVER HAKE	36,708	100.00%	0.21%	0	0.00%	0.00%	36,708	0.00
WHITE HAKE	12,194	100.00%	0.07%	0	0.00%	0.00%	12,194	0.00
YELLOWFIN TUNA	9,848	100.00%	0.06%	0	0.00%	0.00%	9,848	0.00
SANDBAR SHARK	8,389	100.00%	0.05%	0	0.00%	0.00%	8,389	0.00
ANGLER	5,997	99.67%	0.03%	20	0.33%	0.15%	6,017	0.00
KING WHITING	1,924	100.00%	0.01%	0	0.00%	0.00%	1,924	0.00
BLUEFISH	1,899	100.00%	0.01%	0	0.00%	0.00%	1,899	0.00
PORBEAGLE SHARK	1,775	100.00%	0.01%	0	0.00%	0.00%	1,775	0.00
CONGER EEL	1,577	94.04%	0.01%	100	5.96%	0.75%	1,677	0.06
OTHER FISH	1,529	100.00%	0.01%	0	0.00%	0.00%	1,529	0.00
DOLPHIN FISH	1,467	100.00%	0.01%	0	0.00%	0.00%	1,467	0.00
MIX RED & WHITE HAKE	1,374	100.00%	0.01%	0	0.00%	0.00%	1,374	0.00
YELLOWTAIL FLOUNDER	1,313	100.00%	0.01%	0	0.00%	0.00%	1,313	0.00
MAKO SHARK	1,210	100.00%	0.01%	0	0.00%	0.00%	1,210	0.00
POLLOCK	1,177	100.00%	0.01%	0	0.00%	0.00%	1,177	0.00
RED HAKE	1,163	99.15%	0.01%	10	0.85%	0.07%	1,173	0.01
MAKO SHORTFIN SHARK	1,129	100.00%	0.01%	0	0.00%	0.00%	1,129	0.00
BLACK SEA BASS	1,004	100.00%	0.01%	0	0.00%	0.00%	1,004	0.00
BLACK BELLIED ROSEFISH	931	100.00%	0.01%	0	0.00%	0.00%	931	0.00
SPINY DOGFISH	924	6.91%	0.01%	12,450	93.09%	93.37%	13,374	13.47
SKATES	892	64.08%	0.01%	500	35.92%	3.75%	1,392	0.56
CUSK	533	100.00%	0.00%	0	0.00%	0.00%	533	0.00
AMERICAN EEL	310	100.00%	0.00%	0	0.00%	0.00%	310	0.00
GROUPER	308	100.00%	0.00%	0	0.00%	0.00%	308	0.00
BLACK WHITING	308	100.00%	0.00%	0	0.00%	0.00%	308	0.00
MAKO LONGFIN SHARK	304	100.00%	0.00%	0	0.00%	0.00%	304	0.00
COD	289	100.00%	0.00%	0	0.00%	0.00%	289	0.00
BLUELINE TILEFISH	278	100.00%	0.00%	0	0.00%	0.00%	278	0.00
BULL SHARK	264	100.00%	0.00%	0	0.00%	0.00%	264	0.00
DOGFISH (NK)	211	100.00%	0.00%	0	0.00%	0.00%	211	0.00
BLUEFIN TUNA	198	100.00%	0.00%	0	0.00%	0.00%	198	0.00
SHARK (NK)	165	100.00%	0.00%	0	0.00%	0.00%	165	0.00

Table 9 (continued). Catch disposition for directed tilefish trips[a], Maine through Virginia, 1996-2005 combined.

Common Name	Kept lbs	% species	% total	Discarded lbs	% species	% total	Total lbs	Disc: Kept Ratio
DUSKY SHARK	148	100.00%	0.00%	0	0.00%	0.00%	148	0.00
ALBACORE TUNA	142	100.00%	0.00%	0	0.00%	0.00%	142	0.00
SWORDFISH	83	100.00%	0.00%	0	0.00%	0.00%	83	0.00
REDFISH	76	100.00%	0.00%	0	0.00%	0.00%	76	0.00
LOLIGO SQUID	70	100.00%	0.00%	0	0.00%	0.00%	70	0.00
TIGER SHARK	64	100.00%	0.00%	0	0.00%	0.00%	64	0.00
SCUP	60	100.00%	0.00%	0	0.00%	0.00%	60	0.00
TUNA (NK)	47	100.00%	0.00%	0	0.00%	0.00%	47	0.00
AMBER JACK	24	100.00%	0.00%	0	0.00%	0.00%	24	0.00
BUTTERFISH	15	100.00%	0.00%	0	0.00%	0.00%	15	0.00
NORTHERN PUFFER	12	100.00%	0.00%	0	0.00%	0.00%	12	0.00
ALL SPECIES	17,153,487	99.92%	100.00%	13,334	0.08%	100.00%	17,166,821	0.00

[a] Directed trips for tilefish were defined as trips comprising 75 percent or more by weight of tilefish landed.
Source: NMFS unpublished vessel trip report data.
Number of trips = 1,263.
Note: It is highly unlikely that yellowtail flounder were caught with longline hook. However, it is possible that this was misreported as catch on a VTR longline trip.

Recreational Fishery

A small recreational fishery briefly occurred during the mid 1970's, with less than 100,000 pounds annually (MAFMC 2000). Subsequent recreational catches have been low for the last two decades ranging from zero for most years to less than 5,000 pounds in 2003 according to MRFSS data (Table 10).

Some Council members and stakeholders have indicated that thy have seen an increase in recreational tilefish landings in recent years (i.e., private boats and charter boats). However, VTR data indicates that for the last 10 years (1996-2005) the number of tilefish caught by party/charter vessels from Maine through Virginia is low, ranging from 81 fish in 1996 to 994 fish in 2003 (Table 11). Mean party/charter effort ranged from less than one fish per angler in 1999, 2000, and 2002 to approximately eight fish per angler in 1998. The latest stock assessment indicates that for the 2000 through 2005 period, only two trips in the MRFSS data had tilefish reported as the primary target species (SAW 41, NEFSC 2005).

Low numbers of tilefish are reported in the VTR data. According to VTR data, for the 1996 through 2005 period, the largest amount of tilefish caught by party/charter vessels were made by New Jersey vessels (2,432), followed by New York (1,547), Virginia (270), Rhode Island (178), Maine (14), and Maryland (2). Party/charter boats from New Jersey have shown a significant uptrend in the number of tilefish caught in the last six

years while the boats from New York has shown a significant downward trend in the number of fish caught for the same time period (Table 12).

The number of tilefish discarded by recreational anglers is low. According to VTR data, on average, approximately two fish per year were discarded by party/charter recreational anglers for the 1996 through 2005 period. The quantity of tilefish discarded by party/charter recreational anglers ranged from zero in most years to 12 in 2004.

Recreational anglers typically fish for tilefish when tuna fishing especially during the summer months (Freeman, pers. comm. 2006). However, some for hire vessels from New Jersey and New York are tilefish fishing in the winter months (Caputi pers. comm. 2006). In addition, recreational boats in Virginia are also reported to be fishing for tilefish (Pride pers. comm. 2006). However, it is not known with certainty how many boats may be targeting tilefish.

Anglers are highly unlikely to catch tilefish while targeting tuna on tuna fishing trips. However, these boats may fish for tilefish at any time during a tuna trip (i.e., when the tuna limit has been reached, on the way out or on the way in from a tuna fishing trip, or at any time when tuna fishing is slow). While fishing for tuna recreational anglers may trawl using rod and reel (including downriggers), handline, and bandit gear.[19] Rod and reel is the typical gear used in the recreational tilefish fishery. Because tilefish are found in relatively deep waters, electric reels may be used to facilitate landing (Freeman and Turner 1977).

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[19] Bandit gear means vertical hook-and-line gear with rods attached to a vessel, with no more than two hooks per line and with line retrieved by manual, electric, or hydraulic reels.

Table 10. Recreational tilefish data from marine recreational fishery statistics survey (MRFSS).

Year	no. of fish measured	Landed no. A and B1	Released no. B2	A and B1 kg	A and B1 lb
1982	0	984	0	98	216
1983	0	0	0	0	0
1984	0	0	0	0	0
1985	0	0	0	0	0
1986	0	0	0	0	0
1987	0	0	0	0	0
1988	0	0	0	0	0
1989	0	0	0	0	0
1990	0	0	0	0	0
1991	0	0	0	0	0
1992	0	0	0	0	0
1993	0	0	0	0	0
1994	0	608	0	0	0
1995	0	0	0	0	0
1996	0	10,167	0	0	0
1997	0	0	0	0	0
1998	0	0	0	0	0
1999	0	0	0	0	0
2000	0	0	0	0	0
2001	0	148	0	0	0
2002	0	20,068	1,338	0	0
2003	18	722	0	2,126	4,687
2004	3	90	0	206	454

1 kg = 2.20462 lb.
Source: Table modified from SAW 41 (NEFSC 2005; fishery statistics from Maine through North Carolina).

Table 11. Number of tilefish kept by party/charter anglers and mean effort from Maine through Virginia, 1996 through 2005.

Year	Number of tilefish kept	Mean effort
1996	81	1.4
1997	400	7.5
1998	243	8.1
1999	91	0.4
2000	147	0.5
2001	223	0.6
2002	810	0.9
2003	994	1.6
2004	902	1.4
2005	552	0.9

Source: NMFS unpublished vessel trip report data.

Table 12. Number of tilefish caught by party/charter vessels by state, 1996 through 2005.

Year	ME	NH	MA	RI	CT	NY	NJ	MD	VA	All
1996	0	0	0	0	0	81	0	0	0	81
1997	0	0	0	0	0	400	0	0	0	400
1998	0	0	0	102	0	141	0	0	0	243
1999	0	0	0	1	0	88	0	2	0	91
2000	0	0	0	0	0	108	39	0	0	147
2001	0	0	0	0	0	122	101	0	0	223
2002	0	0	0	0	0	427	383	0	0	810
2003	0	0	0	3	0	86	905	0	0	994
2004	0	0	0	0	0	12	636	0	254	902
2005	14	0	0	72	0	82	368	0	16	552
All	14	0	0	178	0	1,547	2,432	2	270	4,443

Source: NMFS unpublished vessel trip report data.

6.2 Non-Target Species

The non-target species VEC includes the major species incidentally captured and discarded as a result of directed fishing for the managed resources. When incidental catch is retained and landed, the catch is accounted for in the landings for that species. This is consistent with the definition of bycatch used by the NEFSC's bycatch estimation methodology (Rago et al. 2005). Discarding of managed resources by tilefish or other fishery activities is accounted for in the description of the managed resource VEC given above.

The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. Catch disposition analysis indicates that the tilefish fishery is very clean as the overall pounds landed and/or discarded of other species is low for directed tilefish trips.

Based on observer data, close to 100 percent of all the fish landed on directed tilefish trips for the 2004 through 2006 (as of June 13) were tilefish (Table 13). A total of 15 species were harvested in addition to tilefish in the 8 observed trips during that time period. Discard rates ranged from less than 100 pounds for most species to over 20,000 pounds for spiny dogfish. In fact, dogfish contributed with approximately 97 percent of all the discards in directed tilefish trips. It is important to note that the NMFS Observer Program was not designed to evaluate the discards of finfish. In addition, the small number of observed trips in the tilefish fishery makes discard evaluation using observer data difficult.

Based on VTR data, over 99 percent of all the fish landed on directed tilefish trips for the 1996 through 2005 were tilefish (Table 9). A total of 43 species were harvested in addition to tilefish in 1,263 trips. Most species had zero discard rates with the exception of red hake (0.07% of the total discards), angler (0.15%), conger eel (0.75%), skates (3.75%), and spiny dogfish (93.37%). VTR data indicates that the dogfish contributed with the bulk of the discards (12,450 pounds or 93.37%) on directed tilefish trips for the 1996 through 2005 period. However, according to VTR data, the relative contribution of the tilefish fishery to the total discards of dogfish (all fisheries and gears) is very low accounting for less than 0.04 percent of the total dogfish discards for the 1996 through 2005 period.

The relative contribution of the tilefish commercial fishery to the total discards (observed and self reported) of this species was evaluated in order to consider the importance of the commercial tilefish fishery to discards from a cumulative effects perspective. From this analysis, the tilefish fishery appears to be a relatively minor contributor to the overall discards of other species.

Table 13. Catch disposition for directed tilefish trips[a], NMFS observer program data base, 2004 through June 13 2006 combined.

Common Name	Kept lbs	% species	% total	Discarded lbs	% species	% total	Total lbs	Disc: Kept Ratio
TILEFISH	121,315	99.94%	99.09%	74	0.06%	0.34%	121,389	0.00
CONGER EEL	578	84.13%	0.47%	109	15.87%	0.50%	687	0.19
WHITE HAKE	251	98.43%	0.21%	4	1.57%	0.02%	255	0.02
EEL UNCLASIFIED	180	99.45%	0.15%	1	0.55%	0.00%	181	0.01
BUTTERFISH	64	45.71%	0.05%	76	54.29%	0.35%	140	1.19
BLACK SEA BASS	28	70.00%	0.02%	12	30.00%	0.06%	40	0.43
MONKFISH	12	100.00%	0.01%	0	0.00%	0.00%	12	0.00
BARNDOOR SKATE	0	0.00%	0.00%	129	100.00%	0.60%	129	-
FOURSPOT FLOUNDER	0	0.00%	0.00%	1	100.00%	0.00%	1	-
JONAH CRAB	0	0.00%	0.00%	2	100.00%	0.01%	2	-
RED HAKE	0	0.00%	0.00%	1	100.00%	0.00%	1	-
SEATROUT	0	0.00%	0.00%	12	100.00%	0.06%	12	-
SMOOTH DOGFISH	0	0.00%	0.00%	74	100.00%	0.34%	74	-
SPINY DOGFISH	0	0.00%	0.00%	20,894	100.00%	96.73%	20,894	-
SPOTTED HAKE	0	0.00%	0.00%	59	100.00%	0.27%	59	-
WINTER SKATE	0	0.00%	0.00%	152	100.00%	0.70%	152	-
ALL SPECIES	122,428	85.00%	100.00%	21,600	15.00%	100.00%	144,028	0.18

[a] Directed trips for tilefish were defined as trips comprising 75% or more by weight (live) of tilefish landed.
Source: Paul Nitschke (NMFS/NEFSC).
Observer data as of June 13 2006.
Number of trips = 8.

6.3 Habitat (Including EFH)

6.3.1 Description of Regional Habitat

In the description of the habitat VEC presented here, the focus is on habitat and EFH for the managed resource as well as EFH for other federally managed non-target species that is potentially affected by the tilefish fishery. Specifically, this section describes benthic marine habitats utilized by the tilefish and by other non-target species with benthic EFH that is vulnerable to adverse impacts from gears used in the prosecution of the tilefish fishery. Federally managed species with life stages that utilize benthic habitats that are vulnerable to gears used in the fishery are listed in Appendix E EFH for juvenile and adult tilefish is considered to be highly vulnerable to adverse impacts from bottom otter trawls. Specifically, there is potential for a high degree of impact to the physical structure of hard clay outcroppings in which tilefish create burrows (see Appendix E)

A technical memorandum entitled "Characterization of the Fishing Practices and Marine Benthic Ecosystems of the Northeast U.S. Shelf, and an Evaluation of the Potential Effects of Fishing on Essential Fish Habitat" was developed by NMFS (Stevenson et al. 2004; Appendix G) A draft of this report was used as the background document for a "Workshop of the Effects of Fishing Gear on Marine Habitats off the Northeastern United States October 23-25, 2001 Boston, Massachusetts. These documents provide additional descriptive information on habitat association and function, coastal features and regional subsystems in the Northeast Shelf Ecosystem, and how they relate to federally managed species in the northeast region. These documents are available by request through the NMFS Northeast Regional Office or electronically at:
http://www.nefsc.noaa.gov/nefsc/publications

Description of Regional Subsystems

The Northeast Shelf Ecosystem encompasses the core geographic area where the tilefish fishery is prosecuted and where tilefish EFH occurs. The Northeast Shelf Ecosystem has been described as the area from the Gulf of Maine south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream (Sherman et al. 1996). The Gulf of Maine, Georges Bank, and mid-Atlantic Bight are distinct subsystems within this region.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of sediment types. 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 fast-moving currents. The mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, NC. Pertinent aspects of the physical characteristics of each of these subsystems are described below. The description provided is based on several review documents (Cook 1988; Pacheco 1988; Stumpf and Biggs 1988; Abernathy 1989; Townsend 1992; Mountain et al. 1994; Beardsley et al. 1996; Brooks 1996; Sherman et al. 1996; Steimle et al. 1999).

Georges Bank: Georges Bank is a shallow (10 to 500 foot depth), elongate (100 miles wide by 200 miles long) extension of the continental shelf formed by the Wisconsinian glacial episode. It is characterized by a steep slope on its northern edge and a broad, flat, gently sloping southern flank. It is separated from the rest of the continental shelf to the west by the Great South Channel. The nature of the sea bed sediments varies widely, ranging from clay to gravel (Valentine and Lough 1991). Surficial sediments composed of a gravel-sand mix have been noted as important postlarval habitat for Atlantic cod, haddock, winter flounder, yellowtail flounder and other species. American plaice adults have been demonstrated to associate with gravel-sand sediments for a variety of potential reasons. Gravel-sand sediments have been noted as habitat for sea scallops, where movement of sand is relatively minor (Langton and Uzmann 1990; Valentine and Lough 1991). The gravel-sand mixture is usually a transition zone between coarse gravel and finer sediments.

Georges Bank is characterized by high levels of primary productivity, and historically, high levels of fish production. It has a diverse biological community that is influenced by many environmental conditions. Several studies have attempted to identify demersal fish assemblages over large spatial scales on Georges Bank. Overholtz and Tyler (1985) found five depth-related groundfish assemblages for Georges Bank and Gulf of Maine that were persistent temporally and spatially. Depth and salinity were identified as major physical influences explaining assemblage structure.

Mid-Atlantic Bight*:* The mid-Atlantic Bight includes the shelf and slope waters from Georges Bank south to Cape Hatteras, and east to the Gulf Stream. Like the rest of the continental shelf, the mid-Atlantic Bight was shaped largely by sea level fluctuations caused by past ice ages. The shelf's basic morphology and sediments are derived from the retreat of the last ice sheet, and the subsequent rise in sea level. Since that time, currents and waves have modified this basic structure.

The shelf slopes gently from shore out to between 75 and 150 miles offshore where it transforms to the slope (300 to 600 ft water depth) at the shelf break. In both the mid-Atlantic and on Georges Bank, numerous canyons incise the slope, and some cut up onto the shelf itself. The primary morphological features of the shelf include shelf valleys and channels, shoal massifs, scarps, and sand ridges and swales.

The sediment type covering most of the shelf in the mid-Atlantic Bight is sand, with some relatively small, localized areas of sand-shell and sand-gravel. On the slope, silty sand, silt, and clay predominate. Sand provides suitable habitat properties for a variety of fishes, invertebrates, and microorganisms. Invertebrates, such as surfclams, razor clams, and ocean quahogs, burrow between the grains to support their characteristic sessile behavior. Dunes and ridges provide refuge from currents and predators and habitat for ambush predators.

Canyons occur near the shelf break along Georges Bank and the mid-Atlantic, cutting into the slope and occasionally up into the shelf as well. They exhibit a more diverse fauna, topography, and hydrography than the surrounding shelf and slope environments.

The relative biological richness of canyons is in part due to the diversity of substrate types found in the canyons, and the greater abundance of organic matter.

Faunal assemblages were described at a broad geographic scale for mid-Atlantic Bight continental shelf demersal fishes, based on NMFS bottom trawl survey data between 1967 and 1976 (Colvocoresses and Musick 1984). There were clear variations in species abundance, yet they demonstrated consistent patterns of community composition and distribution among demersal fishes of the mid-Atlantic shelf. The boundaries between fish assemblages generally followed isotherms and isobaths.

Continental Slope and Canyon Areas

Because of the potential importance of canyon areas (particularly clay outcroppings) within the Northeast Shelf Ecosystem as habitat for tilefish, more detailed descriptions of canyon areas and their formation is provided. The following is a description of the continental slope and canyon environment excerpted from Stevenson et al. (2004).

"The continental slope extends from the continental shelf break, at depths between 60-200 m, eastward to a depth of 2000 m. The width of the slope varies from 10-50 km, with an average gradient of 3-6°; however, local gradients can be nearly vertical. The base of the slope is defined by a marked decrease in seafloor gradient where the continental rise begins. The morphology of the present continental slope appears largely to be a result of sedimentary processes that occurred during the Pleistocene, including, 1) slope upbuilding and progradation by deltaic sedimentation principally during sea-level low stands; 2) canyon cutting by sediment mass movements during and following sea level low stands; and 3) sediment slumping."

"The slope is cut by at least 70 large canyons between Georges Bank and Cape Hatteras (Figure 13), and by numerous smaller canyons and gullies, many of which may feed into the larger canyon systems. The New England Seamount Chain, including Bear, Mytilus, and Balanus Seamounts, occurs on the slope southeast of Georges Bank. A smaller chain (Caryn, Knauss, etc.) occurs in the vicinity in deeper water."

"A "mud line" occurs on the slope at a depth of 250-300 m, below which fine silt and clay-size particles predominate. Localized coarse sediments and rock outcrops are found in and near canyon walls, and occasional boulders occur on the slope because of glacial rafting. Sand pockets may also be formed because of downslope movements. Gravity induced downslope movement is the dominant sedimentary process on the slope, and includes slumps, slides, debris flows, and turbidity currents, in order from thick cohesive movement to relatively non-viscous flow. Slumps are localized blocks of sediment that may involve short downslope movement. However, turbidity currents can transport sediments thousands of kilometers."

"Submarine canyons are not spaced evenly along the slope, but tend to decrease in areas of increasing slope gradient (Figure 13). Canyons are typically "v" shaped in cross section and often have steep walls and outcroppings of bedrock and clay. The canyons

are continuous from the canyon heads to the base of the continental slope. Some canyons end at the base of the slope, but others continue as channels onto the continental rise. Larger and more deeply incised canyons are generally significantly older than smaller ones, and there is also evidence that some older canyons have experienced several episodes of filling and re-excavation. Many, if not all, submarine canyons may first form by mass-wasting processes on the continental slope, although there is evidence that some canyons formed as a result of fluvial drainage (i.e., Hudson Canyon)."

"Canyons can alter the physical processes in the surrounding slope waters. Fluctuations in the velocities of the surface and internal tides can be large near the heads of the canyons, leading to enhanced mixing and sediment transport in the area. Shepard et al. (1979) concluded that the strong turbidity currents initiated in study canyons were responsible for enough sediment erosion and transport to maintain and modify those canyons. Since surface and internal tides are ubiquitous over the continental shelf and slope, it can be anticipated that these fluctuations are important for sedimentation processes in other canyons as well. In Lydonia Canyon, Butman et al. (1982) found that the dominant source of low-frequency current variability was related to passage of warm core Gulf Stream rings rather than the atmospheric events that predominate on the shelf. The water masses of the Atlantic continental slope and rise are essentially the same as those of the North American Basin (defined in Wright and Worthington 1970). Worthington (1976) divided the water column of the slope into three vertical layers: deep water (colder than 4 °C), the thermocline (4-17 °C), and warm water (warmer than 17 °C). In the North American Basin the deep water accounts for two-thirds of all the water, the thermocline for about one quarter, and the warm water the remainder. In the slope water north of Cape Hatteras, the only warm water occurs in the Gulf Stream and seasonally influenced summer waters."

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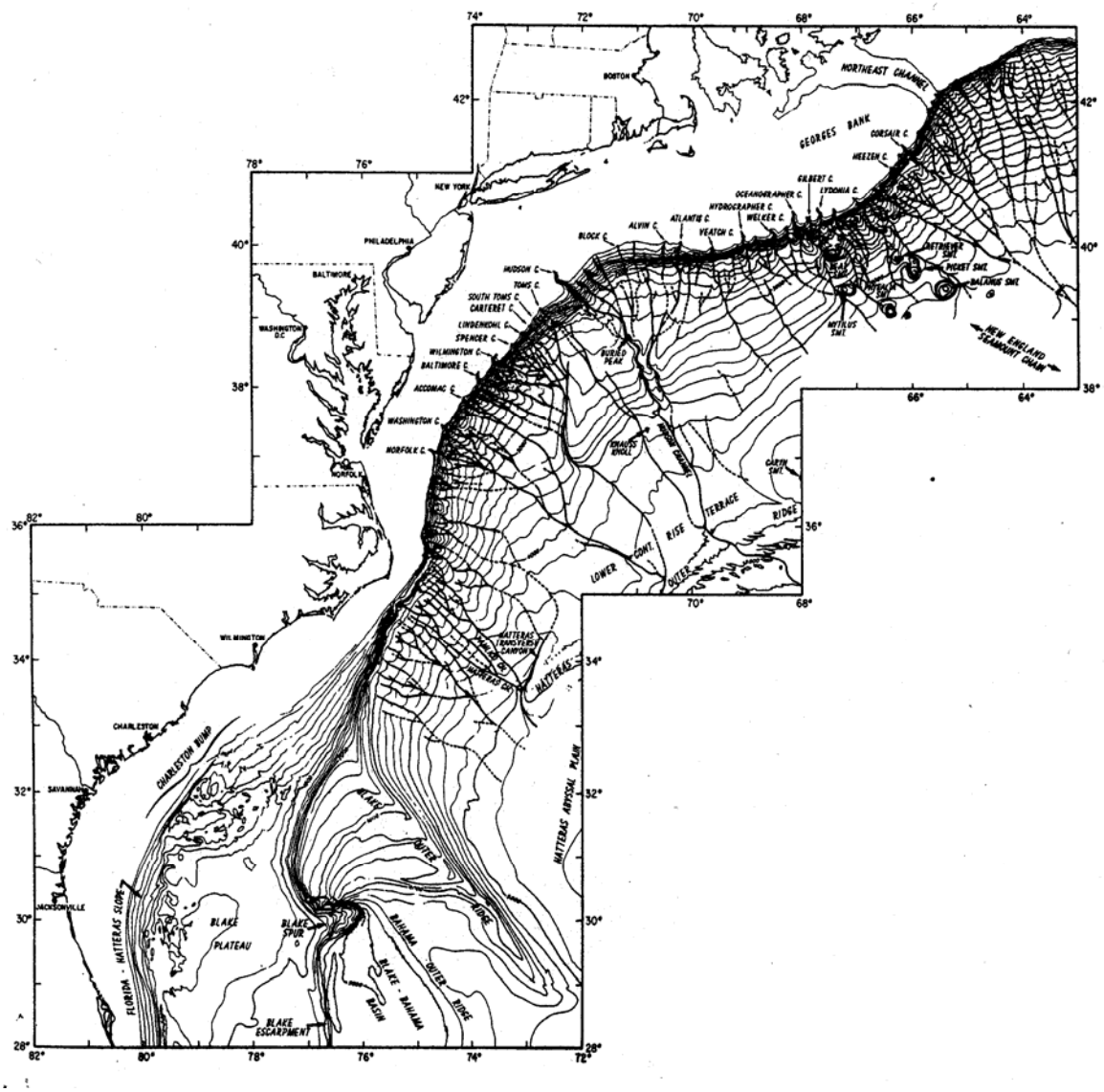

Figure 13. Bathymetry of the U.S. Atlantic continental margin. Contour interval is 200m below 1000 m water depth and 100 m above 1000 m. Axes of principal canyons and channels are shown by solid lines (dashed where uncertain or approximate). Source: Tucholke (1987).

"In general, slope-inhabiting benthic organisms are strongly zoned by depth and/or water temperature, although these patterns are modified by the presence of topography, including canyons, channels, and current zonations (Hecker 1990). Moreover, at depths of less than 800 meters, the fauna is extremely variable and the relationships between faunal distribution and substrate, depth, and geography are less obvious (Wiebe et al. 1987). Fauna occupying hardsurface sediments are not as dense as in comparable shallow-water habitats (Wiebe et al. 1987), but there is an increase in species diversity from the shelf to the intermediate depths of the slope. Diversity then declines again in the deeper waters of the continental rise and plain."

6.3.2 Description of Tilefish Habitat

Pursuant to the Magnuson Stevens Act/EFH Provisions (50 CFR Part 600.815 (a)(1)), an FMP must describe EFH by life history stage for each of the managed species in the plan. This information was previously described in the Tilefish FMP (MAFMC 2000).

Tilefish habitat is described using fundamental information on habitat requirements by life history stage that was summarized in "Essential Fish Habitat Source Document: Tilefish, *Lopholatilus chamaeleonticeps*, Life History and Habitat Characteristics" (Steimle et al. 1999; Appendix F). Updates to the information contained in this document were provided in an update memo in 2005 entitled "Essential Fish Habitat Source Document Update Memo: Tilefish, *Lopholatilus chamaeleonticeps*, Life History and Habitat Characteristics" (Steimle et al. 2005; Appendix F). These documents, as well as additional reports and publications, were used to provide the best available information on life history characteristics, habitat requirements, and ecological relationships for tilefish. Electronic versions of the source document and update memo are available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/

Tilefish habitat is almost exclusively restricted to the outer continental shelf and upper continental slope (80 to 540 m depth) south of the Gulf of Maine (Steimle et al. 2005). It has been suggested that substrate and temperature are the two factors responsible for restricting this species' range to that narrow geographic band. Substrate type and the temperature regime are important because adult tilefish require sediments in which they can burrow within a zone with a stable, moderate temperature regime (Grimes and Turner 1999). This burrowing behavior exhibited by tilefish may be for predator avoidance (Able et al. 1982; Grimes et al. 1986). Adult tilefish have been observed using rocks, boulders, scour depressions beneath boulders, exposed rock ledges, and horizontal and vertical burrows in semi-lithified clay outcrops on the upper slopes, flanks, and shoulders of submarine canyons as shelter (Valentine et al. 1980; Able et al. 1982, 1987b).

The key substrate property that allows tilefish to burrow is cohesiveness; this allows burrows to maintain their shape after they have been excavated (Wenner and Barans 2001). Burrows often occur in areas where there is a thin layer of loose sand or mud overlying semi-lithified clay, but not in areas with deep deposits of non-cohesive sediments where burrows can not be maintained (Guida 2001; 2002). In some submarine canyon areas, and elsewhere on the continental shelf, clay outcroppings occur where the

gradient is steep enough to allow loose sediments to slough-off and expose the more cohesive clay material. Complexes of burrows in clay outcroppings have been called "pueblo" habitats, because of their similarity to human structures in the southwestern United States (Cooper and Uzmann 1977). Tilefish burrows can be tubular or funnel shaped, horizontal or vertical, and may be up to 5 m wide and the mouth and several meters deep (Figure 14). There is typically a primary burrow for the tilefish, but secondary burrowing by other species occurs as a result of the habitat that has been created. Tilefish habitat is used by many other fish and invertebrates, particularly crustaceans (Grimes et al. 1986, Guida pers. comm. 2007).

There are indications that at least a component of the population has high site fidelity (Turner 1986). Warme et al. (1977) first reported that tilefish occupied excavations in submarine canyon walls along with a variety of other fishes and invertebrates, and they referred to these areas as "pueblo villages." Valentine et al. (1980) described tilefish use of scour depressions around boulders for shelter. Able et al. (1982) observed tilefish use of vertical burrows in Pleistocene clay substrates in the Hudson Canyon area, and Grimes et al. (1986) found vertical burrows to be the predominant type of shelter used by tilefish in the mid-Atlantic/southern New England region. Able et al. (1982) suggested that sediment type might control the distribution and abundance of the species, and the longline fishery for tilefish in the Hudson Canyon area is primarily restricted to areas with Pleistocene clay substrate (Turner 1986).

Able and Muzeni (1992) examined videotapes, bridge logs, and dive logs from ten submersible surveys of potential tilefish habitat areas on the outer continental shelf and slope that were conducted between 1979 and 1989 for evidence of trawling impacts on tilefish burrows. Data were available for 79 dives in Lydonia, Veatch, Hudson, Baltimore, and Norfolk canyons and from the “Middle Ground” south of Veatch Canyon, west of Atlantis Canyon, and an area off the east coast of Florida. Hudson, Lydonia, and Veatch canyons were more intensively surveyed than the other three. Tilefish were observed in three types of habitats: around boulders, in clay outcrops, and in vertical burrows. Vertical burrows were by far the most common habitat type (94% of the observations) and were the only tilefish habitat observed in Hudson Canyon, Atlantis Canyon, and the Middle Ground. Clay outcrops or pueblo habitats were observed in Lydonia, Norfolk, and Veatch canyons. Boulders with scour depressions were observed in Baltimore and Lydonia canyons.

Movement patterns of tilefish are poorly understood. Tilefish are not thought to be schooling fishes, but they do aggregate in their preferred habitat (Freeman and Turner 1977). It is generally stated that as tilefish become increasingly larger, they tend to live in progressively deeper depths (Freeman and Turner 1977; J. Nolan pers. comm. 2006; Farnham pers. comm. 2006). There are some indications that tilefish remain in an area for long periods of time while other information suggests that at least some members of the population are relatively mobile (Turner 1986). Tagging studies suggest that tilefish do not migrate long distances (Grimes et al. 1980) while Freeman and Turner (1977) reported local movements of up to 1 or 2 miles per day. Repeated observations from a submersible of individual fish at specific sites over 24 hours, after 32 hours and after one

year as well as limited tagging returns from fish at liberty between four and nineteen months indicated that some tilefish were long-term residents in an area (Grimes et al. 1983, 1986). In contrast, geographic and temporal changes in catch rates do indicate that tilefish concentrate in shallow depths inshore of Veatch Canyon in the late winter and spring in conjunction with decreasing bottom water temperatures both inshore and further east on Georges Bank (Grimes et al. 1980, 1986).

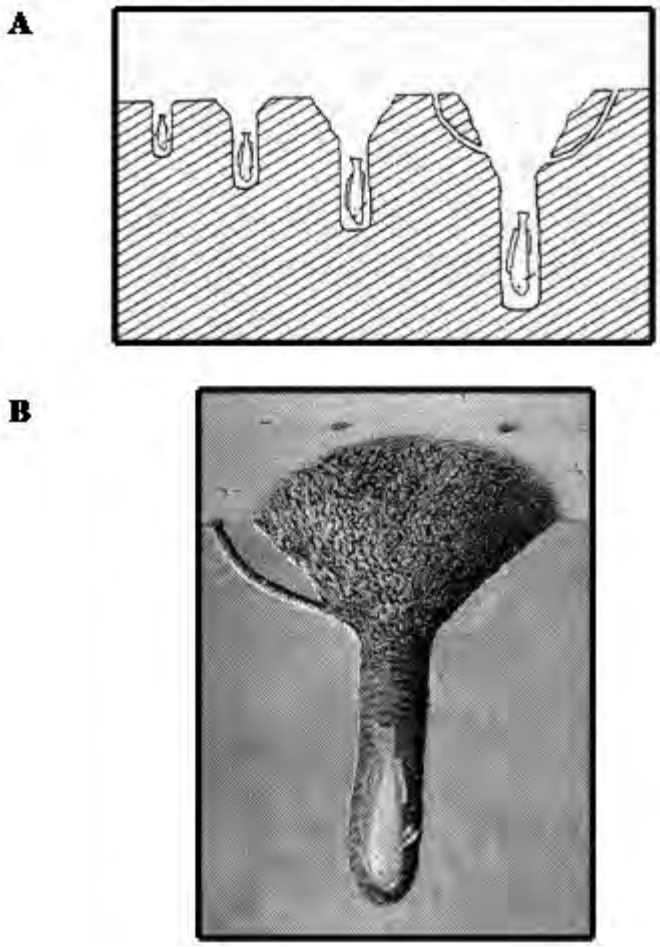

Figure 14. A) A schematic diagram of the developmental stages of a tilefish burrow with increasing size and age of tilefish. B) Depiction of the detail of a burrow based on submersible observations from various sources (Able and Muzeni 2002).

Coleman and Williams (2002) suggest that tilefish influence the habitats they occupy through two roles; as top-level predators and as marine ecosystem engineers. Tilefish not only create their own habitat, but create habitat for other species and play important roles as predators in their environment. It has been suggested that tilefish are the apex predator of the "pueblo village" submarine canyon community (Cooper et al. 1987). While food habit information for tilefish is very limited (NEFSC groundfish surveys 1977-1980; N=9), stomach contents were found to contain crustaceans (i.e., crabs, shrimps) and echinoderms (i.e., starfishes, brittlestars), as well as smaller amounts of mollusks (i.e., bivalves, gastropods), polychaetes (i.e., worms), and osteichthyes (i.e., bony fishes) (Bowman et al. 2000). Additional information on predator and prey species interactions for tilefish can be found in the original FMP (MAFMC 2000).

6.4 Endangered and Protected Species

There are numerous species which inhabit the environment within the management unit of this FMP that are afforded protection under the Endangered Species Act (ESA) of 1973 (i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA). Sixteen are classified as endangered or threatened under the ESA, while the rest are protected by the provisions of the MMPA. The Council has determined that the following list of species protected either by the Endangered Species Act of 1973 (ESA), the Marine Mammal Protection Act of 1972 (MMPA), or the Migratory Bird Act of 1918 may be found in the environment utilized by tilefish fishery:

Cetaceans

Species	Status
Northern right whale (*Eubalaena glacialis*)	Endangered
Humpback whale (*Megaptera novaeangliae*)	Endangered
Fin whale (*Balaenoptera physalus*)	Endangered
Blue whale (*Balaenoptera musculus*)	Endangered
Sei whale (*Balaenoptera borealis*)	Endangered
Sperm whale (*Physeter macrocephalus)*	Endangered
Minke whale (*Balaenoptera acutorostrata*)	Protected
Beaked whales (*Ziphius and Mesoplodon spp*.)	Protected
Risso's dolphin (*Grampus griseus*)	Protected
Pilot whale (*Globicephala spp*.)	Protected
White-sided dolphin (*Lagenorhynchus acutus*)	Protected
Common dolphin (*Delphinus delphis*)	Protected
Spotted and striped dolphins (*Stenella spp*.)	Protected
Bottlenose dolphin (*Tursiops truncatus*)	Protected

Sea Turtles

Species	Status
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered

Hawksbill sea turtle (*Eretmochelys imbricata*)	Endangered
Loggerhead sea turtle (*Caretta caretta*)	Threatened

Fish

Species	Status
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)	Endangered
Smalltooth sawfish (*Pristis pectinata*)	Endangered

Birds

Species	Status
Roseate tern (*Sterna dougallii dougallii*)	Endangered
Piping plover (*Charadrius melodus*)	Endangered

Critical Habitat Designations

Species	Area
Right whale	Cape Cod Bay
	Great South Channel

Under section 118 of the MMPA, the NMFS must publish and annually update the List of Fisheries (LOF), which places all US commercial fisheries in one of three categories based on the level of incidental serious injury and mortality of marine mammals in each fishery (arranging them according to a two tiered classification system). The categorization of a fishery in the LOF determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. The classification criteria consists of a two tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock (Tier 1) and then addresses the impact of the individual fisheries on each stock (Tier 2). If the total annual mortality and serious injury of all fisheries that interact with a stock is less than 10 percent of the Potential Biological Removal[20] (PBR) for the stock then the stock is designated as Tier 1 and all fisheries interacting with this stock would be placed in Category III. Otherwise, these fisheries are subject to categorization under Tier 2.

Under Tier 2, individual fisheries are subject to the following categorization:

Category I. Annual mortality and serious injury of a stock in a given fishery is greater than or equal to 50 percent of the PBR level;

Category II. Annual mortality and serious injury of a stock in a given fishery is greater than one percent and less than 50 percent of the PBR level; or

Category III. Annual mortality and serious injury of a stock in a given fishery is less than one percent of the PBR level.

[20] PBR is the product of minimum population size, one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997).

In Category I, there is documented information indicating a "frequent" incidental mortality and injury of marine mammals in the fishery. In Category II, there is documented information indicating an "occasional" incidental mortality and injury of marine mammals in the fishery. In Category III, there is information indicating no more than a "remote likelihood"[21] of an incidental taking of a marine mammal in the fishery or, in the absence of information indicating the frequency of incidental taking of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is no more than a remote likelihood of an incidental take in the fishery.

For the 2008 List of Fisheries[22], NMFS is proposing to list bottom longline/hook-and-line as category III fishery (72 FR 35393, June 28, 2007). Tilefish have unique spatial and temporal behavior; their habitat is a relatively restricted band approximately 250 to 1200 feet deep and 47°F to 65° F (8.3^{o}C to 18.3^{o}C) referred to as the "warm belt" on the outer continental shelf and upper slope of the United States Atlantic coast. Although tilefish are found along the entire United States Atlantic coast and the Gulf of Mexico, the FMP is concerned only with the stock of tilefish inhabiting the area north of the Virginia/North Carolina border. This stock has been identified as a biologically discrete stock (Katz et al. 1983). Because of their restricted habitat and low biomass, the fishery for tilefish, in recent years, has occurred in a relatively small area in the mid-Atlantic Bight, south of New England and west of New Jersey. The traditional fishery has occurred as far south as Virginia. Logline vessels targeting tilefish occur mainly in southern New England and mid-Atlantic using bottom longline/hook-and-line gear. There have been no interactions documented between this fishery and species/stocks of marine mammals and, thus, the fishery is currently classified as a Category III fishery.

The status of the species listed above and other marine mammal populations inhabiting the Northwest Atlantic has been discussed in detail in the U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments. Initial assessments were presented in Blaylock et al. (1995) and are updated in Waring et al. (1999). The most recent information on the stock assessment of various marine mammals (cetaceans: whales, dolphins, and porpoises; and pinnipeds: seals, sea lions, and walruses) can be found at: http://www.nmfs.noaa.gov/pr/sars/species.htm. Information about marine turtles can be

[21] 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 will 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.

[22] Available at: http://www.nmfs.noaa.gov/pr/interactions/lof/

found at: http://www.nmfs.noaa.gov/pr/species/turtles/. Additional information regarding these species is found in Appendix H.

Two other useful websites on marine mammals are:
http://www.nmfs.noaa.gov/pr/species/mammals/
http://spo.nwr.noaa.gov/mfr611/mfr611.htm

Fishery Interactions
NMFS fisheries observers operated on tilefish vessels for years 1995, 1997 through 2000, and 2002 through 2005 (NMFS observer program), indicate that only in the last two years (2004-2005) have any interactions occurred, when there were a total of 30 takes and all were seabirds (northern fulmer; unknown gulls; great black-back gull; herring gull; and greater shearwater) but none of the known sea bird takes are listed as endangered or threatened (Kelliher, pers. comm. 2006). NMFS observers on tilefish vessels have not recorded interactions between tilefish vessels and endangered and/or protected species, however, it is important to note that observed coverage on tilefish vessels have been relatively low. Nevertheless, Laurie Nolan, a Council member and lifelong tilefish fisher indicated that she has never known of any interaction between tilefish bottom longline gear and marine mammals, sea turtles, or any other endangered and/or threatened species (L. Nolan, pers. comm. 2006).

While not known with certainty, it is possible that the type of gear and fishing methods used in the tilefish fishery may contribute to longline/hook-and-line gear (gear used in the directed tilefish fishery) having no observed interactions with endangered and/or threatened species. More specifically, commercial tilefish vessels have used circular hooks for many years, in fact, the tilefish fleet in Montauk switched from J hooks to circular hooks back in the early 1980s. Even when J hooks were used in the tilefish fishery, they were very light weight when compared to the hooks used in Atlantic pelagic longline fisheries (e.g., swordfish, shark, tuna) because tilefish vessels were targeting smaller size animals, typically less than 40 lb (longline pelagic vessels use heavier lines and hooks because they target larger/heavier animals). In addition, tilefish fishermen use less bait per hook compared to Atlantic pelagic longline fishermen. For example, a tilefish fisherman may use one mackerel fish to bait up to eight hooks or one squid to bait two hooks, while pelagic fishermen use an entire squid or mackerel to bait each hook as the hooks used in the Atlantic pelagic fishery are longer than those used in the tilefish fishery. Finally, tilefish fishermen deploy their gear early in the morning, securing it to the bottom of the ocean and retrieving it after a relatively short 2 to 4 hour soak. Conversely, Atlantic pelagic fishermen typically deploy their gear in the afternoon or evening and in some cases fishing all night drifting. The specific fishing gear configuration and methods of fishing used by longline tilefish vessels described above (gear type, location/depth of fishery, amount of bait used) are all positive reasons why the gear type used in the typical tilefish vessel may not interact (no known observed or anecdotal interactions) with ESA-listed endangered or protected species (including marine mammals and sea turtles).

6.5 Human Communities

6.5.1 Key Ports and Communities

Human Environment - Defining What Constitutes a Community

Before beginning, a few words are necessary about how community is defined in this document. By National Standard 8 requirements, a fishing community must be a geographic entity. Generally speaking, we use any geographic unit that the U.S. Census recognizes as a "place". This includes cities, towns, and some townships, boroughs or other small administrative entities. However, it must be smaller than a county. Occasionally a town may be unincorporated and not have been surveyed as a "Census Designated Place" or CDP. In this case, there are no available census data for the entity. Unless it appears as important in terms of landings or residence of permit holders, such an entity will be aggregated into the next smallest available census place. In this document the port/town is the most basic unit of analysis. Because in some cases there is a port which serves as the base for fishing activity but most fishermen do not reside directly in that port town, both owner's home address and primary port of landing for a vessel are discussed. Further, many small towns within the same county share social and economic networks as well as cultural characteristics, making it useful to discuss them as a unit. Thus relevant county and state data will also be highlighted.

The universe examined in these documents is all those who currently possess a tilefish permit. As of June 23, 2006 there were 3 vessels with a category A permit (full-time tier 1 category), 5 vessels with a category B (full-time tier 2 category) permit, 22 vessels with a category C (part-time category) permit and 2,304 vessels with a category D permit (incidental category). However, the number of individuals that may qualify for IFQ shares may be greater because they may have a Confirmation of Permit History (CPH) for a vessel that is no longer permitted, but meets the qualification criteria.

There are a total of 315 primary ports and 593 towns/ports of residence provided by tilefish permit holders on their 2005 application forms. Ports with 30 or more permit holders resident include: New Bedford, MA; Gloucester, MA; Cape May, NJ; Montauk, NY; Wakefield, RI; Fairhaven, MA; and Long Beach/Barnegat Light, NJ. For primary port, those with 30 or more permit holders claiming them are: New Bedford, MA; Montauk, NY; Cape May, NJ; Point Judith, RI; Portland, ME; Chatham, MA; Long Beach/Barnegat Light, NJ; Point Pleasant, NJ; and Newport News, VA (Table 14).

Table 15 provides insight into the patterns of residence versus landing port in the region. There are vessels from North Carolina, Georgia, Florida, Pennsylvania and even Alaska among the residences and primary ports. Given the mandate of this Amendment to cover only those tilefish landed in the Mid-Atlantic Management Region, any vessel listing ports outside the Northeast Region for both home port and primary port was excluded from the list. However, because a vessel whose owner moves between the regions may be affected, mixed region matches were retained. When port matches with fewer than 10 permits involved are eliminated, however, no North Carolina ports appear.

Table 14. Towns of residence by category and number of vessels for all vessels with active permits (CPH vessels not included in this table) in categories A, B & C and towns with 10 or more category D permits (N.B. Data as of June 23, 2006).

ST	City of Residence	Category	Number of Permits
NY	MONTAUK	A	3
NJ	LONG BEACH/BARNEGAT LIGHT	B	2
NY	OAKDALE	B	1
ME	ELIOT	B	1
MA	SCITUATE	B	1
NJ	LONG BEACH/BARNEGAT LIGHT	C	11
NJ	TUCKERTOWN	C	1
ME	BUXTON	C	2
RI	JAMESTOWN	C	1
RI	NORTH KINGSTOWN	C	1
RI	WAKEFIELD	C	1
NJ	FORKED RIVER	C	1
NJ	NEW GRETNA	C	1
MA	MARSHFIELD	C	1
MA	MONUMENT BEACH	C	1
NC	MANTEO	C	1
MA	NEW BEDFORD	D	192
MA	GLOUCESTER	D	91
NJ	CAPE MAY	D	76
NY	MONTAUK	D	67
RI	WAKEFIELD	D	51
MA	FAIRHAVEN	D	42
ME	PORTLAND	D	25
VA	HAMPTON	D	24
VA	VIRGINIA BEACH	D	22
NJ	LONG BEACH/BARNEGAT LIGHT	D	20
NY	HAMPTON BAYS	D	18
RI	NARRAGANSETT	D	17
ME	HARPSWELL	D	17
MA	CHATHAM	D	17
MA	SCITUATE	D	17
MA	HARWICH	D	16

Table 14 (continued). Towns of residence by category and number of vessels for all vessels with active permits (CPH vessels not included in this table) in categories A, B & C and towns with 10 or more category D permits (N.B. Data as of June 23, 2006).

ST	City of Residence	Category	Number of Permits
MD	BERLIN	D	15
MA	ROCKPORT	D	15
NJ	POINT PLEASANT	D	14
NH	NEWINGTON	D	14
RI	CHARLESTOWN	D	13
NJ	CAPE MAY COURT HOUSE	D	13
MA	WESTPORT	D	13
RI	NEWPORT	D	12
MA	PLYMOUTH	D	12
VA	NEWPORT NEWS	D	11
NH	HAMPTON	D	11
NY	BROOKLYN	D	10
NJ	BELFORD	D	10
ME	TENANTS HARBOR	D	10

N.B. = *Nota Bene* = "pay attention" or "take notice".

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Table 15. Relationships between primary ports of landing* and home towns for all vessels with active permits (CPH vessels not included in this table) in categories A, B & C and towns with 10 or more category D permits (N.B. Data as of June 23, 2006).

PST	Primary Port of Landing	ST	City of Residence	Category	Number of Permits
NY	MONTAUK	NY	MONTAUK	A	3
MA	SCITUATE	MA	SCITUATE	B	1
NH	PORTSMOUTH	ME	ELIOT	B	1
NJ	LONG BEACH/BARNEGAT LIGHT	NJ	LONG BEACH/BARNEGAT LIGHT	B	2
NY	NEW YORK	NY	OAKDALE	B	1
MA	HYANNIS	MA	MARSHFIELD	C	1
MA	HYANNIS	MA	MONUMENT BEACH	C	1
MA	CLOUCESTER	NJ	TUCKERTOWN	C	1
ME	PORTLAND	ME	BUXTON	C	2
NJ	LONG BEACH/BARNEGAT LIGHT	NJ	FORKED RIVER	C	1
NJ	LONG BEACH/BARNEGAT LIGHT	NJ	NEW GRETNA	C	1
NJ	LONG BEACH/BARNEGAT LIGHT	NJ	LONG BEACH/BARNEGAT LIGHT	C	10
PA	PHILADELPHIA	NJ	LONG BEACH/BARNEGAT LIGHT	C	1
RI	NEWPORT	RI	JAMESTOWN	C	1
RI	NEWPORT	RI	NORTH KINGSTOWN	C	1
RI	POINT JUDITH	RI	WAKEFIELD	C	1
NC	WANCHESE	NC	MANTEO	C	1
MA	CHATHAM	MA	CHATHAM	D	15
MA	FAIRHAVEN	MA	FAIRHAVEN	D	10
MA	GLOUCESTER	MA	GLOUCESTER	D	89
MA	NEW BEDFORD	MA	FAIRHAVEN	D	30
MA	NEW BEDFORD	MA	NEW BEDFORD	D	174
MA	PLYMOUTH	MA	PLYMOUTH	D	10
MA	ROCKPORT	MA	ROCKPORT	D	10
MA	SCITUATE	MA	SCITUATE	D	16
MD	OCEAN CITY	MD	BERLIN	D	14
ME	PORTLAND	ME	PORTLAND	D	25
NH	NEWINGTON	NH	NEWINGTON	D	12
NJ	LONG BEACH/BARNEGAT LIGHT	NJ	LONG BEACH/BARNEGAT LIGHT	D	20
NJ	CAPE MAY	NJ	CAPE MAY COURT HOUSE	D	11
NJ	CAPE MAY	NJ	CAPE MAY	D	67
NY	MONTAUK	NY	MONTAUK	D	66
NY	SHINNECOCK	NY	HAMPTON BAYS	D	10
RI	NEWPORT	RI	NEWPORT	D	12
RI	POINT JUDITH	RI	CHARLESTOWN	D	11
RI	POINT JUDITH	RI	NARRAGANSETT	D	11
RI	POINT JUDITH	RI	WAKEFIELD	D	39
VA	NEWPORT NEWS	VA	HAMPTON	D	10
VA	VIRGINIA BEACH	VA	VIRGINIA BEACH	D	19

* Primary port of landing in this table is the port listed on the permit application as the primary port for the vessel. PST = Primary port state. N.B. = *Nota Bene* or "pay attention" or "take notice".

Though they do not rise to the level of 10 permits each, there are some mixed NC/other state matches for primary landing port/residence (Table 16). In total, they account for 16 permits, 8 towns and 3 counties (Dare with 10 permits; Pamlico with 5 permits and Craven with 1 permit).

Table 16. North Carolina Towns listed as primary port or port of residence for tilefish vessel owners (N.B. Data as of June 23, 2006).

PST	Primary Port of Landing	County, for NC Ports	ST	City of Residence	County, for NC Towns	Category	Number of Permits
NC	BATH	Pamlico	VA	CHINCOTEAGUE		D	2
NC	HATTERAS	Dare	VA	LANEXA		D	1
NC	MANTEO	Dare	VA	RICHMOND		D	1
NC	OREGON INLET	Dare	VA	NORFOLK		D	1
NC	WANCHESE	Dare	NY	NORTHPORT		D	1
NC	WANCHESE	Dare	VA	HAMPTON		D	5
NJ	CAPE MAY		NC	VANDEMERE	Pamlico	D	1
VA	HAMPTON		NC	WANCHESE	Dare	D	1
VA	HAMPTON		NC	ORIENTAL	Pamlico	D	2
VA	NEWPORT NEWS		NC	NEW BERN	Craven	D	1

N.B. = *Nota Bene* or "pay attention" or "take notice".

Dependence of Individual Communities on Tilefish Relative to the Universe of Tilefish Ports

NMFS databases show 52 Northeast ports or port groupings (such as “Other Suffolk County”) -- located in 24 counties, with at least 1 lb. of tilefish landed in one of the years 2000-2005. These include 45 individually named ports (including ports in North Carolina).

However, this Amendment affects only tilefish landed in the Mid-Atlantic Management Area (which excludes North Carolina), leaving only 44 named ports to be considered. Five ports account for almost 98% of all tilefish landed: Montauk [60% of landings, 66% of value] and Hampton Bays [13% of landings, 15% of value], NY (Suffolk county); Long Beach/Barnegat Light [13% of landings, 11% of value], NJ (Ocean county); Point Judith [7% of landings, 5% of value], RI (Washington county) and Gloucester [2% of landings, 1% of value], MA (Essex county). See Table 17 for ports in order of landings.

Table 17. All mid-Atlantic management area ports with any tilefish landings between 2000 and 2005, ports listed in descending order by landings.

State	County	Port
NY	Suffolk	Montauk
NY	Suffolk	Hampton Bays
NJ	Ocean	Long Beach/Barnegat Light
RI	Washington	Point Judith
MA	Essex	Gloucester
RI	Newport	Newport
CT	New London	Stonington
CT	New London	New London
NJ	Ocean	Pine Beach
MA	Bristol	New Bedford
ME	Cumberland	Portland
VA	Accomack	Chincoteague
NJ	Cape May	Sea Isle City
NY	Suffolk	Greenport
NJ	Ocean	Point Pleasant
NY	Suffolk	Mattituck
RI	Washington	New Shoreham
MA	Suffolk	Boston
NY	Nassau	Freeport
NY	Nassau	Point Lookout
NJ	Cape May	Cape May
NY	Suffolk	Other Suffolk
MA	Barnstable	Other Barnstable
RI	Newport	Tiverton
MA	Plymouth	Scituate
NY	Not-specified	Other NY
MA	Bristol	Other Bristol
MA	Barnstable	Chatham
VA	City of Hampton	Hampton
NJ	Monmouth	Belford
NY	Kings	Brooklyn
RI	Washington	South Kingstown
MD	Worcester	Ocean City
CT	Not-specified	Other CT
VA	City of Virginia Beach	Virginia Beach
NJ	Monmouth	Middletown
MA	Bristol	Fairhaven
VA	City of Newport News	Newport News

Table 17 (continued). All mid-Atlantic management area ports with any tilefish landings between 2000 and 2005, ports listed in descending order by landings.

State	County	Port
RI	Newport	Little Compton
NY	Nassau	Other Nassau
MA	Bristol	Westport
NY	New York	New York City
RI	Washington	North Kingstown
NJ	Union	Elizabeth
NY	Suffolk	Islip
MA	Dukes	West Tisbury
MD	Not-specified	Other Maryland
VA	Northampton	Norfolk
NJ	Cape May	Wildwood
MA	Barnstable	Falmouth
MA	Barnstable	Woods Hole

Of these, there are 33 ports or port groupings (29 individual ports) -- located in 17 counties, that show a 0.01% or greater dependence on tilefish either as a percentage of total pounds landed in that port of all species or as a percentage of total revenue in that port from all landings (fishing revenue dependence) for the combined years of 2000-2005 (Table 18).

Only 7 ports, however, have at least a 1.0% fishing revenue dependence on tilefish: Pine Beach and Long Beach/Barnegat Light, NJ (Ocean county) Montauk, Hampton Bays and Mattituck, NY (Suffolk county), Middletown, NJ (Monmouth county), and Point Judith, RI (Washington county). Ports showing at least a 1% landings dependence on tilefish are all of these except Point Judith.

By these calculations, Pine Beach and Middletown, NJ and Mattituck, NY (which were not in the upper tiers of tilefish ports in general) come to the fore. And Gloucester, which was in the top 5 tilefish ports in terms of tilefish landings, drops out of the top list when tilefish landings are compared to total landings for the port. We must remember, however, that Gloucester still has high tilefish landings and revenue relative to the tilefish fishery. Further, though Pine Beach is highly dependent based on tilefish landings relative to all landings, its total landings are still very low.

Table 18. Ports with tilefish at least 0.01% of total lbs landed or total value all species, 2000-2005.

Port	State	County	Tilefish as a % of Landings for all Species	Tilefish as a % of Value for all Landed Species
PINE BEACH	NJ	OCEAN	72.58%	77.48%
MONTAUK	NY	SUFFOLK	11.93%	21.48%
MIDDLETOWN	NJ	MONMOUTH	7.12%	6.11%
HAMPTON BAYS	NY	SUFFOLK	3.80%	8.79%
LONG BEACH/BARNEGAT LIGHT	NJ	OCEAN	3.03%	2.10%
MATTITUCK	NY	SUFFOLK	0.55%	0.59%
NEW SHOREHAM	RI	WASHINGTON	0.39%	0.15%
SEA ISLE CITY	NJ	CAPE MAY	0.31%	0.22%
POINT JUDITH	RI	WASHINGTON	0.30%	0.47%
BROOKLYN	NY	KINGS	0.24%	0.33%
WEST TISBURY	MA	DUKES	0.19%	0.22%
NEWPORT	RI	NEWPORT	0.16%	0.10%
OTHER NEW HAVEN	CT	NEW HAVEN	0.15%	0.11%
GREENPORT	NY	SUFFOLK	0.15%	0.29%
STONINGTON	CT	NEW LONDON	0.14%	0.07%
SHINNECOCK	NY	SUFFOLK	0.14%	0.23%
PT. LOOKOUT	NY	NASSAU	0.12%	0.34%
NEW LONDON	CT	NEW LONDON	0.11%	0.12%
SOUTH KINGSTOWN	RI	WASHINGTON	0.07%	0.02%
GLOUCESTER	MA	ESSEX	0.07%	0.12%
CHINCOTEAGUE	VA	ACCOMAC	0.06%	0.05%
FREEPORT	NY	NASSAU	0.05%	0.09%
OTHER BARNSTABLE	MA	BARNSTABLE	0.02%	0.01%
OTHER SUFFOLK	NY	SUFFOLK	0.02%	0.01%
TIVERTON	RI	NEWPORT	0.01%	0.01%
SCITUATE	MA	PLYMOUTH	0.01%	0.01%
PORTLAND	ME	CUMBERLAND	0.01%	0.02%
PT. PLEASANT	NJ	OCEAN	0.01%	0.02%
BOSTON	MA	SUFFOLK	0.01%	0.01%
NEW YORK CITY	NY	NEW YORK	0.01%	0.01%
BELFORD	NJ	MONMOUTH	0.00%	0.01%

By county, 11 counties have at least a 0.1% poundage or revenue dependence on tilefish as a percentage of all fish. But only 4 counties have at least a 1.0% poundage or revenue dependence on tilefish. By both poundage and revenue, Ocean county in New Jersey is most dependent, followed by Suffolk county in New York, Monmouth county in New Jersey, and Washington county in Rhode Island (Table 19).

Table 19. Counties with at least 0.1% poundage or value dependence on tilefish.

State	County	Tilefish as a % of Landings for all Species	Tilefish as a % of Value for all Landed Species
NJ	OCEAN	75.61%	79.61%
NY	SUFFOLK	16.59%	31.38%
NJ	MONMOUTH	7.12%	6.12%
RI	WASHINGTON	0.76%	0.63%
CT	NEW HAVEN	0.40%	0.30%
NJ	CAPE MAY	0.31%	0.22%
NY	KINGS	0.29%	0.42%
MA	DUKES	0.19%	0.22%
RI	NEWPORT	0.17%	0.11%
MA	ESSEX	0.07%	0.12%
VA	ACCOMAC	0.06%	0.05%

Dependence of Individual Communities on Fishing as a Percentage of All Industries

The dependency levels above are only community dependence on tilefish within the fishing industry. If we look at the total dependence of these communities on all fishing in relation to other industries, then yet a different pattern emerges. This general dependence can be described using two different types of data: IMPLAN data on employment and sales, and County Business Patterns Data (CBP) on numbers of establishments and employment. The differences between the IMPLAN employment data and the CBP employment data are mostly due (apart from some minor differences in data sources) to the fact that IMPLAN covers only commercial fishing and seafood processing, while CBP data cover a broad range of industries tied to varying degrees to the marine sector (see list below in the CBP section of all included industries).

IMPLAN

These 2001 data (the most recent available) are prepared using IMPLAN input-output software and are only reportable at the county and not the port level. These tables describe all counties where tilefish is landed and where either the county as a whole or some port within the county has at least a 0.01% dependence on commercial fishing and seafood processing as measured by employment, sales or personal income. Of course, since these are only commercial data, bait and tackle shops, marine hardware stores, etc. are not included. With these added in, the percentages would rise. Similarly, other sectors such as ice manufacturing, boat building, retail sales, and grocery sales are also fishing dependent to some degree but have substantial non-fishing sales as well and thus were not included. However, because there is some degree of fishing dependence associated with these non-included components, all the percentages below should be assumed to be lower bound estimates. The North Carolina counties of Dare and Pamlico are included because they appeared in our mixed region permit table above with 5 or more permits.

For employment, there are 23 counties with employment dependence of at least 0.01%, 11 counties with at least a 1.0% employment dependence (Table 20; Pamlico, NC;

Northampton, Accomack, and City of Newport News, VA; Cape May, NJ; Bristol, Barnstable and Essex, MA; Washington and Newport, RI; Worcester, MD), and no counties with at least a 10% dependence. Counties with between 5 and 10% dependence are: Pamlico county in North Carolina and Northampton county in Virginia. (In all cases percentages are rounded up to be as inclusive as possible, e.g. 0.5% is counted as 1.0%.)

Table 20. Counties with at least a 1% dependence on fishing employment.

State	County[a]	Population[b]	Employment[c]	Commercial Fishing Employment	Seafood Processing And Packaging Employment	Commercial Fishing & Seafood Processing & Packaging Employment	Percent Commercial Fishing & Seafood Processing & Packaging Employment Relative to All Employment
NC	Pamlico	12,929	4,396	173	150	323	7.35%
VA	Northampton	13,125	6,971	324	*	*	4.65%
VA	Accomack	38,414	18,444	93	281	374	2.03%
NJ	Cape May	102,352	55,562	796	294	1090	1.96%
MA	Bristol	540,360	269,977	3,232	917	4149	1.54%
RI	Washington	125,991	62,870	793	96	889	1.41%
MD	Worcester	48,084	32,443	405	46	451	1.39%
MA	Barnstable	226,809	132,491	793	0	793	0.60%
MA	Essex	730,296	391,367	1,325	858	2183	0.56%
VA	City of Newport News	180,305	114,024	0	548	548	0.48%
RI	Newport	85,218	52,334	239	0	239	0.46%

[*] < 10 observations.
[a] Data obtained from the Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive West, Suite 140, Stillwater, MN 55082, www.implan.com, 2001.
[b] Year-round population.
[c] Includes both full-time and part-time workers.

Again using IMPLAN 2001 data, we can examine dependence relative to sales from commercial fishing and seafood processing, as well as personal income from these sources. There are 17 counties with at least a 0.1% dependency and 9 with at least a 1% dependency (Table 21; Pamlico, NC; Cape May, NJ; Northampton, VA; Bristol and Essex, MA; Washington, RI; Accomack and City of Newport News, VA; and Worcester, MD). Only one county (Pamlico, NC) has at least a 5% dependence on either fishery-related sales or income.

Table 21. Counties with at least a 1% dependence on fishing sales and income.

State	County[a]	Total Sales (million $'s)	Total Personal Income[b] (million $'s)	Percent Sales Commercial Fishing & Seafood Processing	Percent Income Commercial Fishing & Seafood Processing	Percent of Sales From Commercial Fishing
NC	Pamlico	381.62	96.05	7.98%	4.06%	1.18%
NJ	Cape May	4,099.09	1,606.87	2.14%	1.27%	0.80%
VA	Northampton	438.18	171.41	2.01%	1.54%	1.68%
MA	Bristol	24,555.60	9,251.45	1.89%	1.40%	1.19%
RI	Washington	4,867.35	1,922.37	1.21%	1.25%	0.81%
VA	Accomack	1,466.50	479.04	1.04%	1.55%	0.82%
VA	City of Newport News	10,038.60	4,383.13	1.02%	0.40%	0%
MD	Worcester	2,376.08	775.24	0.59%	0.38%	0.24%
MA	Essex	42,605.30	16,005.53	0.56%	0.42%	0.13%

[*] < 10 observations.
[a] Data obtained from the Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive West, Suite 140, Stillwater, MN 55082, www.implan.com, 2001.
[b] Includes employee compensation (wage and salary payments and benefits paid by employers) and proprietary income (payments received by self-employed individuals as income).

County Business Patterns Data

County Business Patterns data are not yet available for 2004-2005. Therefore, data are presented only for 2000-2003. Two main types of CBP data are presented here: number of establishments and employment. A third potential variable, annual payroll was not used due to the multiple instances of non-reportability that would have seriously affected the reliability of any averages or summary statistics. Some additional caveats are also important.

First, the CBP data represent data collected from establishments that have paid employees subject to payroll taxes. As such, reported employment and number of establishments do not include sole proprietorships. Data are also not collected for employees of private households, agricultural production, railroad, or most governmental employees. For this reason, total reported employment in a county or state will be less than the total number of people employed and employment for sectors with a large number of sole proprietorships, commercial fishing for example, would be under-represented.

Second, each establishment is classified by NAICS (North American Industry Classification System) according to the primary product or service produced by the establishment. This means that establishments that produce multiple products or services are classified into only one sector. In this manner the total number of employees and establishments classified as seafood processing, for example, would be less than the total number of establishments that are engaged in the processing of seafood. For number of

establishments, an average of 2000-2003 is presented, similar to the average of 2000-2005 used for the fishery data. However, unlike landings data that can have significant year-to-year fluctuations for individual fisheries, these data are relatively stable. Thus, the lack of more recent data is unlikely to mean significant change has been missed.

Third, although employment is seasonal CBP collects employment based on numbers of employees (both part-time and full-time) in Mid-March for each calendar year. Fourth, employment data are suppressed in cases where the number of reporting establishments is fewer than three, or one or more establishments are dominant in the reporting area (i.e. state or county). However, even for suppressed data, CBP does report the number of establishments by employment size category. Each category has a defined range based on a minimum and a maximum number of employees from which a mid-point may also be computed. In cases where the number of employees is suppressed, a range estimate was calculated by summing the product of the lower and upper end of each employee size category by the number of establishments across each size category. The mid-point estimate of employment is calculated in the same manner using the mid-point for each size category. Since this is already a calculated variable, it is presented by year and not as an average of the 4 years so as not to introduce calculation errors.

The counties represented here are all those that had landings or permits in at least one year of 2000-2005 and reached the level of 1% of total marine establishments or of mid-range total employees in the marine sector in 2000-2003, as described above.

Finally, the marine sector is defined as those businesses falling under the following NAICS:

Fishing	General line grocery wholesale
Seafood product preparation & packaging	Packaged frozen food wholesale
Ice manufacturing	Fish & seafood wholesale
Food product machinery manufacturing	Recreational vehicle dealers
Engine, turbine & power transmission equipment	Boat dealers
Ship & boat building	Meat markets
Motorcycle, bicycle & parts manufacturing	Fish & seafood markets
Sporting & athletic goods manufacturing	Sporting goods stores
Refrigeration equipment & supplies	Heating oil dealers
Industrial machinery & equipment wholesale	Liquefied petroleum gas (bottled gas)
Sporting & recreational goods & supplies	Other fuel dealers
Toy & hobby goods & supplies wholesale	Water transportation
Scenic & sightseeing transportation	Refrigerated warehousing & storage
Port & harbor operations	Direct property & casualty insurance
Marine cargo handling	Reinsurance carriers
Navigational services to shipping	Recreational goods rental
Sports & recreation instruction	Recreational, vacation camps (excluding campgrounds)
Nature parks & other similar institutions	Commercial transportation equipment (excluding Motor Vehicles) rentals
Marinas	

There are 28 counties with at least a 1% dependence based on employment, and 9 counties with at least 5% dependence. These are City of Newport News and City of Hampton, VA; Suffolk, Dukes and Plymouth, MA; Brunswick and Pamlico, NC; New London, CT and Ocean, NJ. Suffolk, MA has close to a 10% dependence, and City of Newport News, VA has almost a 20% dependence (Table 22).

Table 22. Counties with at least 1% dependence on employment in the marine sector.

County	State	Mid-Point Estimate of Percent of Marine Sector Employment of Total County Employment			
		2000	2001	2002	2003
NEWPORT NEWS (CITY)	VA	0.79%	1.25%	1.27%	18.80%
SUFFOLK	MA	9.50%	8.59%	9.13%	9.88%
DUKES	MA	7.82%	7.37%	7.15%	8.02%
BRUNSWICK	NC	8.45%	7.50%	7.93%	6.77%
NEW LONDON	CT	6.72%	6.75%	6.88%	6.73%
PLYMOUTH	MA	9.04%	5.75%	6.19%	6.17%
OCEAN	NJ	1.46%	1.92%	0.91%	5.91%
HAMPTON (CITY)	VA	7.88%	8.38%	5.40%	5.71%
PAMLICO	NC	4.94%	5.05%	5.09%	5.11%
CUMBERLAND	ME	4.16%	4.18%	4.13%	4.37%
BRISTOL	MA	3.46%	3.22%	3.22%	3.41%
ACCOMACK	VA	2.76%	2.68%	2.46%	3.06%
ESSEX	MA	2.47%	2.07%	2.30%	2.91%
WORCESTER	MA	2.63%	2.63%	2.97%	2.86%
BARNSTABLE	MA	2.29%	2.42%	2.35%	2.62%
UNION	NJ	9.71%	10.12%	8.32%	2.61%
NASSAU	NY	1.18%	1.18%	1.15%	2.61%
SUFFOLK	NY	2.04%	1.79%	1.79%	2.36%
CARTERET	NC	1.84%	2.08%	2.17%	2.25%
WASHINGTON	RI	2.97%	3.28%	3.04%	2.17%
KINGS	NY	3.84%	2.84%	3.22%	2.11%
MONMOUTH	NJ	1.86%	1.94%	1.98%	1.98%
NEWPORT	RI	5.05%	6.14%	6.05%	1.94%
VIRGINIA BEACH (CITY)	VA	1.08%	1.80%	1.94%	1.79%
DARE	NC	2.00%	2.12%	2.16%	1.70%
NEW YORK	NY	1.92%	1.83%	1.80%	1.10%
CAPE MAY	NJ	0.70%	0.60%	0.64%	1.06%
NORTHAMPTON	VA	1.12%	1.14%	1.49%	1.05%

There are 28 counties with at least a 1% dependence on fishing and related employment as measured by number of establishments, and 9 with at least a 5% dependence. These are Pamlico, Dare and Carteret, NC; Northampton and Accomack, VA; Newport and Washington, RI; Dukes, MA and Cape May, NJ. Pamlico, NC in fact has just over a 16% dependence, much higher than the not quite 8% of the next highest county – Dare, NC (Table 23).

Table 23. Counties with at least 1% dependence on establishments in the marine sector.

County	State	Annual Average Marine Sector Establishments 2000 to 2003	Annual Average Total Establishments 2000 to 2003	Average Annual Percent Marine Sector Establishments 2000 to 2003
PAMLICO	NC	36	220	16.29%
DARE	NC	143	1806	7.92%
NORTHAMPTON	VA	25	340	7.36%
CARTERET	NC	134	1907	7.02%
NEWPORT	RI	153	2735	5.60%
DUKES	MA	56	1002	5.54%
ACCOMACK	VA	44	817	5.36%
CAPE MAY	NJ	196	4080	4.80%
WASHINGTON	RI	171	3630	4.70%
CUMBERLAND	ME	428	10521	4.07%
BRISTOL	MA	520	13492	3.85%
BARNSTABLE	MA	324	8524	3.80%
NEW LONDON	CT	204	5816	3.51%
OCEAN	NJ	381	11455	3.33%
BRUNSWICK	NC	59	1810	3.26%
ESSEX	MA	600	18662	3.21%
SUFFOLK	NY	1419	44735	3.17%
PLYMOUTH	MA	335	12010	2.79%
MONMOUTH	NJ	430	18871	2.28%
NASSAU	NY	1062	47151	2.25%
HAMPTON (CITY)	VA	54	2444	2.22%
UNION	NJ	319	14650	2.18%
NEWPORT NEWS (CITY)	VA	79	3688	2.14%
WORCESTER	MA	391	18278	2.14%
VIRGINIA BEACH (CITY)	VA	208	10276	2.03%
KINGS	NY	791	39608	2.00%
SUFFOLK	MA	363	20431	1.78%
NEW YORK	NY	1093	105321	1.04%

All Four Measures of Dependence

The only county which consistently comes up in the at least 5% dependent category in all four measures (two from IMPLAN and two from CBP) is Pamlico county, NC. Northampton county, VA and Duke county, MA show up in two. Only Pamlico county and Northampton county show up in both IMPLAN and CBP measures. Other counties vary from measure to measure. However, none of these counties has even a 1% dependence on tilefish, specifically.

Processors

NMFS conducts an annual Processed Products survey. Because there are so few tilefish processing plants in the database, figures on employment and pounds/value cannot be reported even at the regional level. However, as of 2004 (the most recent year for which data are available) there was only one plant (located in Florida) listed as processing tilefish. There were two plants (both in Texas) in 1998 (Table 24).

Table 24. Plants processing tilefish in the U.S., as listed in the NMFS processed products survey, 2000-2004.

Year	No. Processing Plants	No. States with Processing Plants
2000	2	2
2001	2	2
2002	3	2
2003	2	2
2004	1	1

Dealers

Fish dealers also depend on tilefish. In the combined years of 2000-2005 there were 324 dealers with Federal permits who reported tilefish (though not all dealers operated in each of those years). For comparison, there were 83 tilefish dealers in 1998 and 93 in 2005. Thus there is a fair amount of turn over from year to year.

Just over 34% of these 324 dealers earned less than 5% of their total revenue from tilefish (12% of the 93 for 2005). An additional 23% reported earnings from tilefish equal to 96% or more of their revenues from all species; 154 reported dependence of 25% or more; and 135 reported dependence of 50% or more. However, for example, among the 75 dealers reporting 96-100% dependence on tilefish, 24 had absolute income from tilefish of $100 or less, 45 claimed income of $1000 or less and 64 had income of $10,000 or less, though 2 claimed income of $500,000 to $1 million (Table 25).

Overall, in the combined years of 2000-2005, 56 dealers depended on tilefish revenues for over $10,000 (14 in 2005), 31 for over $50,000 (8 in 2005) and 2 for between 1 and 5 million dollars (1 in 2005). (N.B. Numbers in this section are not additive, i.e., the numbers for 25% or more includes the numbers for 50% or more, and the numbers for under $10,000 are included in the numbers for under $50,000, etc.)

Table 25. Federally permitted dealer dependence on tilefish, combined years 2000-2005.

Percentage Level of Dependence	Number of Dealers	Absolute Level of Dependence	Number of Dealers
0-5%	111	$0-100	90
6-10%	24	$101-1000	105
11-15%	13	$1001-10,000	72
16-20%	7	$10,001-50,000	25
21-25%	5	$50,001-$100,000	13
26-30%	10	$100,001-500,000	14
31-35%	3	$500,001-1,000,000	2
36-40%	6	$1,000,001-5,000,000	2
41-45%	6		
46-50%	4		
51-55%	7		
56-60%	9		
61-65%	6		
66-70%	4		
71-75%	6		
76-80%	4		
81-85%	7		
86-90%	6		
91-95%	11		
96-100%	75		
TOTAL	324		324

The counties with the largest number of tilefish dealers are: Suffolk county, NY (92; 25 in 2005); Washington county, RI (38; 9 in 2005); Bristol county, MA (35; 15 in 2005); Ocean county, NJ (28; 8 in 2005), Nassau county, NY (18; 1 in 2005), Newport county, RI (15; 5 in 2005) and Cape May county, NJ (10; 4 in 2005; Table 13).

It is important to remember, however, that some dealers buy in more than one county or port. Therefore, numbers of dealers by county and by port involve multiple counts of individual dealers. Therefore total numbers of dealers in Tables 26 and 27 below may exceed the total of unique dealers reported in the first table.

Since, again, this amendment only concerns tilefish landing in the Mid-Atlantic Management area, only dealer reports from the Northeast Region were included. Some dealers may buy in, e.g., both Virginia and North Carolina, but in such a case only their Virginia landings would be counted. As such, dependence reported should – if anything – be on the high side as it would divide tilefish landings by Northeast landings only and not all landings for such a dealer.

The ports with the largest number of tilefish dealers are: Montauk, NY (44; 15 in 2005); Point Judith, RI (32; 9 in 2005); New Bedford, MA (30; 11 in 2005); Hampton Bays, NY (28; 6 in 2005); Freeport, NY (15; 0 in 2005); Long Beach/Barnegat Light, NJ (14; 6 in 2005), Pt. Pleasant NJ (12; 1 in 2005) and Greenport, NY (10; 1 in 2005; Table 27).

Table 26. Federally permitted dealer dependence on tilefish, combined years 2000-2005 – by county.*

State	County	Number of Federal Tilefish Dealers	Percentage Dependence on Tilefish of These Dealers as a Group	Number of Federal Tilefish Dealers	Absolute Dependence on Tilefish of These Dealers as a Group
Connecticut	New London	3/2	0-10%; *	5	$0--$10,000
Massachusetts	Barnstable	5/2	0-30%;*	7	$0-$10,000
	Bristol	14/9/12	0-15%/26-65%/86-100%	9/20/6	$0-100/$101-1000/$1001-10,000
	Dukes	1		1	
	Essex	4/4	0-45%/51-100%	6/2	$0-1000/*
	Plymouth	2		1/1	
	Suffolk	3		2/1	
Maryland	Worcester	2		2	
	Not-specified	1		1	
Maine	Cumberland	3		1/2	
New Jersey	Cape May	4/6	0-25%/36-100%	6/1	$0-10,000/*
	Monmouth	3		1/1/1	
	Ocean	19/6/3	0-15%/26-70%/*	5/10/9/7	0-$100/$101-10,000/$10,001-100,000/$100,001-$1 million
	Union	1		1	
New York	Kings	1		1	
	Nassau	13/5	0-10%/41-100%	6/10/2	$0-100/$101-1000/*
	New York	1		1	
	Suffolk	48/7/11/26	0-25%/26-50%/51-75%/76-100%	35/28/19/9	$0-1000/$1001-10,000/$10,001-100,000/100,001-$5 million
	Not-specified	2		1/1	
Rhode Island	Newport	6/9	0-10%/56-100%	14/1	$0-10,000/*
	Washington	15/5/18	0-15%/26-75%/76-100%	20/9/9	$0-1000/$1001-$10,000/$10,001-500,000
Virginia	Accomack	6	0-100%	6	$0-10,000
	City of Newport News	3		3	
	City of Norfolk	1		1	
	City of Hampton	4	0-85%	4	$0-1000
	City of Virginia Beach	3		2/1	

* Grayed out cells and asterisks (*) indicate data not published for reasons of confidentiality.

Table 27. Federally permitted dealer dependence on tilefish, combined years 2000-2005 – by port.*

State	Port	Number of Federal Tilefish Dealers	Percentage Dependence on Tilefish of These Dealers	Number of Federal Tilefish Dealers	Absolute Dependence on Tilefish of These Dealers
Connecticut	Stonington	2		1/1	
	New London	3		2/1	
Massachusetts	Chatham	4	0-95%	4	$0-1000
	Other Barnstable	1		1	
	Falmouth	1		1	
	Woods Hole	1		1	
	New Bedford	13/5/12	0-15%/26-60%/86-100%	8/16/6	$0-100/$101-1000/$1001-$10,000
	Other Bristol	2		2	
	Westport	1		1	
	Fairhaven	2		2	
	West Tisbury	1		1	
	Gloucester	4/4	0-45%/51-100%	6/2	$0-1000/*
	Scituate	2		1/1	
	Boston	3		2/1	
Maryland	Ocean City	2		2	
	Not-specified	1		1	
Maine	Portland	3		3	
New Jersey	Cape May	5	11-100%	5	$101-10,000
	Wildwood	1		1	
	Sea Isle City	4	0-80%	4	$101-50,000
	Middletown	1		1	
	Belford	2		1/1	
	Pt. Pleasant	10/2	0-5%/*	12	$0-10,000
	Pine Beach	2		1/1	
	Long Beach/Barnegat Light	9/5	0-30%/56-100%	10/4	$1001-100,000/$100,001 - $1 million
	Elizabeth	1		1	
New York	Brooklyn	1		1	
	Freeport	12/3	0-10%/56-100%	15	$0-10,000
	Other Nassau	1		1	
	Pt. Lookout	2		1/1	
	New York City	1		1	
	Islip	1		1	
	Greenport	9/1	0-20%/*	10	$0-10,000
	Montauk	17/7/6/14	0-15%/16-50%/51-75%/76-100%	25/12/7	$0-10,000/ $10,001-100,000/$100,001 - $10 million
	Hampton Bays	16/12	0-30%/56-100%	10/8/6/4	$0-1000/$1001-10,000/$10,001-50,000/$50,001-$5 million
	Other Suffolk	2		1/1	
	Mattituck	5	0-100%	5	$0-10,000
	Shinnecock	2		1/1	
	Not-specified	2		1/1	

Rhode Island	Newport	4/4	0-10%/91-100%	7/1	$0-10,000/*
	Tiverton	5	0-100%	3/2	$0-1000
	Little Compton	2		2	
	Pt. Judith	12/4/5/12	0-15%/11-50%/61-95%/96-100%	15/8/7	$0-1000/$1001-10,000/$10,000-500,000
	New Shoreham	1		1	
	South Kingstown	3		2/1	
	North Kingstown	2		1/1	
Virginia	Chincoteague	5/1	0-55%/*	6	$0-10,000
	Newport News	3		3	
	Norfolk	1		1	
	Hampton	4	0-85%	4	$0-1001
	Virginia Beach	3		2/1	

* Grayed out cells and asterisks (*) indicate data not published for reasons of confidentiality.

Port Profiles

The ports profiled in more depth are any ports/communities that appeared as important due to their total landings or value of tilefish, their dependence on tilefish relative to other species, or the number of tilefish dealers present in this Affected Human Environment section. They are: Montauk, Hampton Bays/Shinnecock, Mattituck, Freeport and Greenport, NY; Long Beach/Barnegat Light, Pine Beach, Belford/Middletown, and Pt. Pleasant/Point Pleasant Beach, NJ; Gloucester and New Bedford, MA; and Point Judith and Newport, RI. In addition, Sea Isle City, NJ appears as important in the Social Impact section, where rather than combined data from 2000-2005, only 2005 data are used. (While 2000-2005 combined data give a more holistic picture of the community historically, it is assumed that impacts will follow the most current available landings data.) See Table 28 below.

Table 28. Communities profiled.

State	County	Port
New York	*Suffolk*	Montauk
		Hampton Bays/Shinnecock
		Mattituck
		Freeport
		Greenport
New Jersey	*Ocean*	Long Beach/Barnegat Light
		Pine Beach
		Point Pleasant/Point Pleasant Beach
	Monmouth	Belford/Middletown
	Cape May	Sea Isle City
Massachusetts	*Essex*	Gloucester
	Bristol	New Bedford
Rhode Island	*Newport*	Newport
	Washington	Point Judith

While full profiles are available in Appendix I, a few points of interest will be excerpted here. The historical beginnings of the tilefish fishery are succinctly described in Kitts et al. (2007, p. 192; Appendix C).

> Since the early 1900s, tilefish have been harvested off the Mid-Atlantic and New England coasts using longline gear, and to a lesser extent, otter trawls. After World War II, a trawl fishery developed in New England and accounted for most of the landings through the mid-1960s. In the early 1970s, a directed commercial longline fishery rapidly developed and expanded in the Mid-Atlantic region. In the early 1980s, several New Jersey-based vessels switched to other fisheries such as swordfish. By the late 1980s and early 1990s, participants in the tilefish fishery were primarily from eastern Long Island, NY and had upgraded their vessels and adapted to newer technologies. These larger steel-hulled vessels were more resilient to bad weather and able to steam further offshore. Trip length increased and the fleet became more dedicated to tilefish fishing.

Most (over 80%) of commercial tilefishing is now done with longlines, with the majority of the catch trucked to Fulton Fish Market in New York. The majority of landings come from Montauk and Hampton Bays (on Long Island), and even landings in other ports such as Gloucester and Point Judith are largely by New York vessels.

New York

Some fishermen in New York are concerned about the accuracy of their assigned historical landings by species for fisheries (often used for promulgating new regulations), as the method used to land fish in New York varies from that in most other states. Called the “box method” it involves fish being boxed at sea, then landed at a consignment dock and from there shipped to Fulton Fish Market in New York City. Prior to the implementation of dealer electronic reporting, NMFS port agents counted the number of boxes landed from each vessel and received a species breakdown from the dock manager (who did not open the boxes but rather based the breakdown on his knowledge of the vessel’s general fishing patterns). This system allowed greater potential for accidental mis-reporting. Now, the boxes are landed at the consignment dock and immediately shipped to Fulton, where the dealer opens the boxes and reports the landings. (Further, individual fishermen report using VTR, logbooks and other methods.)

While this method is more accurate in terms of the number and type of fish landed, it can still lead to another type of accidental reporting error. That is, landings are assigned to the incorrect state. This can have inequitable effects on states should an allocation scheme be developed, such as the one for summer flounder fishery management plan, that bases a state's allocation on the landings of a particular species in that state.

The docks make money by charging $10-12 per box (2007 prices) and by selling fuel. Catch limits and trip limits reduce the number of boxes to be shipped, and have made it

very difficult for the docks to stay in business. New York is losing much of its infrastructure, and many of the docks have closed or changed hands in recent years.

Nonetheless Erik Braun, a former port agent for this part of New York, was not hopeful about the future of the fishing industry. He said there are no new fishermen getting into commercial fishing, and that even those who have done well are not encouraging their children to get into the industry. Much of the fishing infrastructure is disappearing, and those who own docks can make much more by turning them into restaurants.

Suffolk County

Montauk

The Tier 1 tilefish vessels have formed the Montauk Tilefishermen's Association (MTA), "a registered non-profit organization whose objective is to provide an organizational structure for making collective decisions for its members. The MTA also provides members protections under the Fishermen's Collective Marketing Act" (Kitts et al. 2007, p. 195; Appendix C). Further, it "has worked to create and foster a fisheries management regime that is efficient and encourages resource stewardship at the local level. Other important outcomes from this collaboration include fresher fish for the market and a more stable operating environment. (Kitts et al. 2007, p. 192; Appendix C)".

Montauk has a very diverse fishery, using a number of different gear types and catching a variety of species. The village of Montauk is the largest fishing port in the state of New York. Montauk's main industry has been fishing since colonial times, and it continues to be an important part of its economy and traditions. The species group for which there are the highest federal commercial landings is squid, mackerel, butterfish. Montauk is also home port of a large charter and party boat fleet, and a major site of recreational fishing activity. Montauk has several annual festivities that celebrate sport fishing and one that celebrates commercial fishing. However, the majority of the employers in Montauk are seasonal and dependent on the tourist industry, including restaurants and hotels. In 2000, the median cost for a home in this area was $290,400.

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 103 positions or 6.1% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 314 positions or 18.5% of jobs. Arts, entertainment, recreation, accommodation and food services (20.3%), construction (18.5%) and retail trade (10.1%) were the primary industries.

Median household income in Montauk was $42,329 (up from 32.9% from 1990) and per capita income was $23,875. For full-time year round workers, men made approximately 41.6% more per year than women.

The average family in Montauk consists of 2.90 persons. With respect to poverty, 8.3% of families (up from 0% in 1990) and 10.6% of individuals earned below the official U.S.

Census poverty threshold ($8,794), while 40.0% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine).

The comprehensive plan for the town of East Hampton (which includes Montauk) recognizes the importance of the commercial and recreational fishing industries here, and includes a commitment to supporting and retaining this traditional industry. There has been discussion of developing a large wholesale seafood market on Long Island similar to the Fulton Fish Market so that fish caught here could be sold directly on Long Island rather than being shipped to New York.

Hampton Bays/Shinnecock

Hampton Bays and Shinnecock here are considered to be the same community. Shinnecock is the name of the fishing port located in Hampton Bays on the barrier island next to Shinnecock Inlet, and does not actually refer to a geopolitical entity. Fishermen use either port name in reporting their catch, but they are considered to be the same physical place. In 2000, the median cost for a home in this area was $178,000.

The population of the town of Southampton has been growing steadily, and a number of seasonal home owners are choosing to live here year round. This is changing the population structure and dynamics of the town, and is likely to cause house prices to increase in an area where affordability is already a problem. The area around Shinnecock Inlet is one where much growth is expected to occur. As in many other coastal communities with a fishing industry, the soaring costs of waterfront property make it very difficult for fishermen and others in the industry to afford or retain necessary waterfront property for water access. Most of the infrastructure at Shinnecock has disappeared in the last few years; where there were at one time three docks for commercial fishermen to pack out at, now only one remains.

The New York Seafood Council, located in Hampton Bays, is a non-profit organization made up of individuals, businesses, and organizations involved in the fishing industry whether through harvesting, processing, distribution or service. The council has over 200 members and their primary goal is to promote seafood and the seafood industry. The Southampton Town Baymen's Association serves the interests of the inshore watermen utilizing Shinnecock Bay and the other bays within the town of Southampton. Also relevant to this area is the Long Island Commercial Fishing Association, which promotes commercial fishing throughout Long Island. The species group for which there are the highest federal commercial landings is squid, mackerel, butterfish. Recreational fishing is an important part of the tourist industry in Hampton Bays, and sportfishing tournaments are a popular event in this area.

The largest employer in Southampton Town is Southampton Hospital, which employs over 100 people. Other significant sources of employment for residents are in businesses related to tourism or the second home industry, including landscaping, pool maintenance, and construction. Many employers in the fishing industry have noted the difficulty in

attracting employees here when many can make more money in the landscaping business, which has a high demand for laborers, particularly from April through November

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 95 positions or 1.7% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 789 positions or 13.9% of jobs. Educational, health and social services (20.3%), construction (18.9%), and retail trade (14.4%) were the primary industries.

Median household income in Hampton Bays in 2000 was $50,161 (up 40.0% from $35,736 in 1990) and per capita income was $27,027. For full-time year round workers, men made approximately 56.6% more per year than women.

The average family in Hampton Bays consisted of 3.0 persons. With respect to poverty, 6.7% of families (up from 2.4% in 1990) and 10.7% of individuals earned below the official U.S. Census poverty threshold ($8,794), while 23.2% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine).

As in many other areas of Long Island where clams and other shellfish are a significant part of the fishing industry, water quality is a consistent problem in the increasingly populated shallow bays where the clams are dug. The bays have had several problems with algal blooms of *Aureococcus anophagefferens*, or brown tide, which killed off bay scallop populations here, and is believed to be related to nutrient depletion in the bay. Shinnecock Inlet needs to be dredged consistently because of siltation to allow commercial fishermen and recreational vessels to pass in and out of the inlet into the Atlantic Ocean, which is a costly process.

The master plan for the Town of Southampton includes a commitment to preserving the town's fisheries by protecting the industry from growth and development pressures, recognizing the importance of fisheries to both the economy and character of the area. The Master Plan, adopted in 1999, includes a plan to expand the town's commercial fishing dock. Nonetheless, Bryan Oles notes: "The resilience of the commercial fishing industry in Hampton Bays is threatened by the cumulative effects of fisheries management and the forces of gentrification that are sweeping the area".[23]

Mattituck

As in many other areas of Long Island where clams and other shellfish are a significant part of the fishing industry, water quality is a consistent problem in the increasingly populated shallow bays where the clams are dug. The bays have had several problems with algal blooms of *Aureococcus anophagefferens*, or brown tide, which killed off bay scallop populations here, and is believed to be related to nutrient depletion in the bay. The Mattituck Inlet channel needs to be dredged frequently.

[23] Oles, B. no date. Hampton Bays/Shinnecock, New York Community Profile (Draft), Fishing Communities of the Mid-Atlantic (accessed 7/15/05).

Mattituck has difficulty providing sufficient affordable housing for its residents. In 2000, the median cost for a home in this area was $203,900. The town of Southold (within which the village of Mattituck is located) has instituted a program to assist its residents with rising housing costs.

Southold's Department of Public Works estimates that the largest employers in the town of Southold where Mattituck residents might work are Northfork Bank, Mattituck School District, the Town of Southold, and Greenport Hospital.

According to Census 2000 data, jobs with agriculture, forestry, fishing and hunting accounted for 59 or 3.0% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 124 or 6.3% of the labor force. Educational, health and social services (25.1%), retail trade (11.3%), construction (8.9%), public administration (8.9%), and professional, scientific, management, administrative, and waste management services (8.6%) were the primary industries.

Median household income in Mattituck was $55,353 (up 52.0% from $36,415 in 1990) and median per capita income was $26,101. For full-time year round workers, men made approximately 23.3% more per year than women.

The average family in Mattituck consisted of 2.97 persons. With respect to poverty, 4.5% of families (up from 4.4% in 1990) and 5.6% of individuals earned below the official U.S. Census poverty threshold ($8,794), and 23.2% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine).

The township of Southold has developed a local waterfront revitalization program concerned with, among other goals, protecting water dependent uses, maintaining and strengthening a stable commercial fishing fleet, promoting the sustainable use of living marine resources, enhancing community character, preserving open space, preserving public access, and making use of the coastal location. The town has two Marine Use zoning types in place. Mattituck Inlet and Creek were identified as two places within the town most suitable for water-dependent uses.

Fishermen in Mattituck have recently formed the Mattituck Fisheries Association. The Long Island Commercial Fishing Association promotes commercial fishing throughout Long Island. The North Fork Captain's Association represents charter boats on Long Island's North Fork.

Mattituck is known primarily as a lobstering port; the lobster boats work on Long Island Sound. There are also some otter trawls here. The species group for which there are the highest federal commercial landings is summer flounder, scup, black sea bass. The highest landings of federal commercial species here are for summer flounder, scup and black sea bass. Fishing operations in Mattituck are based out of Mattituck Creek, which opens onto Long Island Sound via Mattituck Inlet and is protected by a jetty. There are a total of five marinas in Mattituck providing a total of 200 slips. Most of these are for recreational use, but there are some slips used commercially at the mouth of the inlet.

Freeport

After WWII, Freeport became a bedroom community for New York City. Today the Freeport waterfront has been revitalized. In 2000, the median cost for a home in this area was $179,900. Woodcleft Road, which had massive flooding problems, was raised, and now a number of restaurants, shops, and an open air market can be found along this area now known as "Nautical Mile". This same area is where both the commercial and party/charter fishing fleets are located. Redevelopment of Freeport's waterfront is likely to continue, with both positive and negative consequences for the fishermen who use this area.

Many fishermen in Freeport feel they are simply a tourist attraction, and that, despite zoning some of the waterfront as designated for marine industrial use, the community has no real interest in the industry's viability other than having a few fishing vessels around to be able to define the port as a "working waterfront" and apply for redevelopment grants. Many disagree with the assertion by town officials that they are benefiting the industry. Currently an increase in businesses such as waterfront restaurants combined with increased enforcement of use ordinances is forcing commercial fishing businesses into smaller and smaller spaces, and eliminating their parking. The fishermen's use of public space is highly restricted. Commercial fishermen frequently have to schedule their work to avoid peak tourist times.

According to Census 2000 data, jobs in agriculture, forestry, fishing and hunting, and mining accounted for 23 positions or 0.1% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 988 positions or 4.8% of jobs. Educational, health and social services (22.1%), retail trade (12.0%), professional, scientific, management, administrative, and waste management services (9.4%), and manufacturing (9.0%) were the primary industries.

Median household income in Freeport in 2000 was $55,948 (up 27.3% from $43,948 in 1990) and per capita income was $21,288. For full-time year round workers, men made approximately 17.6% more per year than women.

The average family in Freeport consisted of 3.65 persons. With respect to poverty, 8.0% of families (up from 5.4% in 1990) and 10.6% of individuals earned below the official U.S. Census poverty threshold ($8,794), while 26.5% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine).

Freeport has traditionally had a highly diverse fishery, targeting squid, whiting, flounder, fluke, bluefish, weakfish, butterfish, striped bass, lobster, soft and hard clams, eels, and green crabs, among other species. Most fishing boats in Freeport are day boats or smaller bay boats. The species group for which there are the highest federal commercial landings is squid, mackerel, butterfish. Freeport's focus has shifted since the early 2000s from commercial to recreational fishing with an influx of tourists.

The Freeport Tuna Club is dedicated to promoting rod and reel fishing and protecting the interests of rod and reel fishermen targeting a variety of species. They have over 200 members and participate in and sponsor numerous fishing tournaments. Some fishermen from Freeport are involved in the Long Island Commercial Fishing Association.

Greenport

Many commercial fishermen from Greenport have gone out of business entirely in recent years, and have difficulty finding decent jobs after they leave, because of a lack of skills. Few children of fishermen are choosing to pursue this career. The town of Southold has instituted a program to assist its residents with rising housing costs. It is estimated that the Hispanic population in Greenport (and elsewhere on Long Island) is much greater than what census data indicate, due to the likely presence of illegal immigrants. Officials wish to conduct a survey of undocumented immigrants here in order to better serve their needs.

As in many other areas of Long Island where clams and other shellfish are a significant part of the fishing industry, water quality is a consistent problem in the increasingly populated shallow bays where the clams are dug. The bays have had several problems with algal blooms of *Aureococcus anophagefferens*, or brown tide, which killed off bay scallop populations here, and is believed to be related to nutrient depletion in the bay.

The annual Greenport Maritime Festival features a clam chowder competition, pirate events, whale boat races, a children's fishing competition, and many other events in a celebration of the area's maritime heritage. Tens of thousands of visitors descend upon the village for this event, and the main streets are closed. The East End Seaport Museum and Maritime Foundation sponsors this annual event. The museum promotes the rich maritime heritage of Long Island's East End through exhibits, events, and the maintenance of the Bug Light. The Museum has a number of displays relating to the maritime heritage of the area, including exhibits on the menhaden and oyster fisheries. Greenport also has a monument dedicated to commercial fishermen lost at sea.

According to Census 2000 data, jobs with agriculture, forestry, fishing and hunting accounted for 4 or 0.5% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 81 or 9.3% of the labor force. Educational, health and social services (21.7%), retail trade (15.1%), arts, entertainment, recreation, accommodation and food services (11.5%), and professional, scientific, management, administrative, and waste management services (9.7%) were the primary industries.

Median household income in Greenport was $31,675 (an increase of 23.9% from $25,562 in 1990) and median per capita income was $17,595. For full-time year round workers, men made approximately 66.2% more per year than women.

The average family in Greenport consisted of 3.10 persons. With respect to poverty, 21.2% of families (up from 9.8% in 1990) and 19.7% of individuals earned below the

official U.S. Census poverty threshold ($8,794), and 48.2% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine).
The township of Southold has developed a local waterfront revitalization program concerned with, among other goals, protecting water dependent uses, maintaining and strengthening a stable commercial fishing fleet, promoting the sustainable use of living marine resources, enhancing community character, preserving open space, preserving public access, and making use of the coastal location. The town has two Marine Use zoning types in place. Greenport is a New York State Local Waterfront Revitalization Program community, through the state's Coastal Management Program; the community has prepared a comprehensive land and water use plan for its waterfront.

The Long Island Commercial Fishing Association promotes commercial fishing throughout Long Island. There is also a Greenport Baymen's Association that is not very active. The North Fork Captain's Association represents charter boats on Long Island's North Fork.

Today commercial fishing in Greenport is a shadow of what it once was. Vessels still working here include about four pound-netters, some of whom also gillnet, three inshore bay draggers, two of which are full-time, and a handful of bay clammers. The species groups for which there are the highest federal commercial landings are striped bass, smallmesh groundfish and squid, mackerel, butterfish. Fishing is a popular leisure time activity in Suffolk county. Bluefish, rainbow trout, as well as an assortment of other fish reside in ponds, rivers, and ocean waters. Shellfishing is also a popular activity here.

The Village of Greenport is has been designated as a historic maritime area, and Town of Southold is dedicated to preserving traditional maritime uses and the maritime character of the village. The township of Southold has identified Greenport as an area where the town's maritime activity should be focused, and thus this area will be a target for infrastructure improvements from the town, including new infrastructure for commercial fishing. Specifically, the town wishes to promote the provision of "commercial fishing support facilities, including docks and dock space; off-loading areas; gear storage space; commercially-priced fuel and service yards; ice and refrigeration; road access to commercial fishing docks; affordable housing for fishery industry personnel; and fish processing facilities". There is some discussion at the moment of developing Greenport as a port for boats servicing an offshore LNG (Liquefied Natural Gas) plant, which coincides with the village's intent to maintain a working waterfront

New Jersey

<u>Ocean County</u>

Long Beach/Barnegat Light

Long Beach Island is an 18-mile barrier beach on New Jersey's eastern shore, about 4 to 6 miles from mainland New Jersey, within Ocean county. It is made up of the Township of Long Beach, along with five independent boroughs: Barnegat Light, Beach Haven,

Harvey Cedars, Ship Bottom, and Surf City. The city of Barnegat Light is a major commercial port, while much of the rest of the island specializes in recreational fishing. However, to avoid confidentiality issues due to a small number of dealers, all Barnegat Light/Long Beach landings are combined.

Until the 1995 construction of a jetty by the Army Corps of Engineers, boats on the other side of the island had to pass through one of several narrow and often dangerous inlets. This difficulty limited the growth of maritime industries along this part of the New Jersey shore, in contrast with the tourism industry, which has taken advantage of the area's numerous sandy beaches. Along with the jetty, the Corps project also produced a three-quarter-mile beach and a fishing pier, further developing the tourist appeal of Barnegat Light. Commercial and recreational fishing have a long tradition in this area, and both industries are still strong today.

The age structures of both Long Beach Township and the municipality of Barnegat Light in the 2000 Census showed the most predominant age groups to be the 60's and 70s, indicating a large retirement population.

As of 2006 the Army Corps of Engineers wishes to begin a beach nourishment project on Long Beach Island to restore the eroding beaches here, but is meeting with resistance from homeowners, who are concerned that the planned dunes will obstruct their water view, and that more beach space will mean more beach goers in front of their homes. The government would require easements from property owners to access the shore for construction, and the home owners are reluctant to provide them. If the beach nourishment project does not take place, the beach and the waterfront homes may soon be lost.

One emerging trend (as of 2006) on Long Beach Island and in other similar summer resort areas is that as real estate prices soar, many year-round residents are selling their homes for bigger homes on the mainland, tempted by the large price they can get. These homes are bought up by those using them as summer homes. The result is dwindling year-round populations on places like Long Beach Island, and a resulting loss in year-round businesses and students in local schools.

Like many other coastal communities, Barnegat Light must deal with the forces of rapidly increasing home prices and the resulting gentrification. Because the community is physically so small, there is very little land area for development, and the development of condominiums or other properties generally involves land in existing use. The high housing costs are encouraging many families to move to the mainland, and many of those employed in the commercial fishing industry now do not reside in Barnegat Light.

There are a number of events throughout the summer held all over Long Beach Island. Long Beach Island Surf Fishing Tournament is an annual competition that has been held for over fifty years. It takes place throughout most of October and November, with cash prizes and trophies being awarded in angling competitions for bluefish and striped bass, and includes a popular surfcasting seminar. Chowderfest is an annual event that is held in

Beach Haven in early October and features a competition between all the restaurants on Long Beach Island as they vie for the honor of creating the tastiest chowder. The Alliance for a Living Ocean hosts beach seining events and the annual FantaSea Festival to educate the public about the coastal resources surrounding Long Beach Island. Barnegat Light holds an annual Blessing of the Fleet in the Barnegat Light Yacht Basin each June to pray for the community's commercial fishermen.

The small businesses of Barnegat Light are very reliant on the summer tourist economy and the year round fishing industry. The town relies heavily on its commercial fishing industry year round, but in winter it becomes the economic mainstay for the town – employing as many as 150 local people to work at the marinas. The most significant sources of employment in the town are the fishing industry and real estate. Barnegat Light is one of the most important fishing ports in Ocean county. Barnegat Light port has a significant offshore longline fishery, targeting tuna species (especially yellow fin and big eye) for most of the year, and swordfish part of the year. The species groups for which there are the highest federal commercial landings are sea scallops, monkfish, swordfish and tilefish.

The Beach Haven Charter Fishing Association represents charter boats in the borough of Beach Haven and around Long Beach Island. Blue Water Fishermen's Association is located in Barnegat Light. This association is made up of tuna and swordfishermen as well as others involved in the commercial fishery of highly migratory species. The Jersey Coast Anglers Association (JCAA) located in nearby Toms River NJ, is an association of more than 75 saltwater fishing clubs, with a combined membership exceeding 30,000. The Recreational Fishing Alliance, a national lobbying group, is headquartered near Barnegat Light.

According to Census 2000 data, jobs with agriculture, forestry, fishing and hunting accounted for 10 positions or 0.8% of all jobs in *Long Beach*. Self employed workers, a category where fishermen might be found, accounted for 141 positions or 11.0% of the labor force. Educational health and social services (18.2%), arts, entertainment, recreation, accommodation and food services (17.1%), construction (14.6%), and retail trade (11.5%) were the primary industries.

According to Census 2000 data, jobs with agriculture, forestry, fishing and hunting accounted for 24 positions or 8.2% of all jobs in *Barnegat Light*. Self employed workers, a category where fishermen might be found, accounts for 55 positions or 18.8% of the labor force. Educational health and social services (16.8%), arts, entertainment, recreation, accommodation and food services (11%), construction (10.3%), finance, insurance, real estate and rental and leasing (10.3%), and professional, scientific, management, administrative and waste management services (9.2%) were the primary industries.

Median household income in *Long Beach* was $48,697 (up 53.3% from $31,775 in 1990) and median per capita income was $33,404. For full-time year round workers, men made approximately 33.2% more per year than women. The average family in Long Beach

consists of 2.5 persons. With respect to poverty, 5.1% of families (down from 4.2% in 1990) 3.8% of individuals earn below the official U.S. Census poverty threshold ($8,794), while 34.9% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $334,400.

Median household income in *Barnegat Light* was $52,361(up 17.3% from 1990) and median per capita income was $34,599. For full-time year round workers, males made approximately 17.6% more per year than females. The average family in Barnegat Light consists of 2.6 persons. With respect to poverty, 2.6% of families (down from 4.2% in 1990) and 4.7% of individuals earn below the official U.S. Census poverty threshold ($8,794), while 33.7% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $299,400.

Pine Beach

The borough of Pine Beach is located within Berkeley Township, Ocean county, New Jersey on the Toms River, and occupies just 1.62 square kilometers of land. Beginning in 1908 Pine Beach was advertised as a summer get-away. Today Pine Beach still has the feel of a summer community, where residents and visitors swim, boat, and fish, but today most residents live here year round. Roughly 72% of the land in Berkeley Township is located within the New Jersey Pinelands National Reserve.

The Barnegat Bay Shellfish Restoration Program is working to restore oyster beds in the Toms River where oysters have traditionally been harvested; in 2006 their goal was to raise 1.2 million clams, which would provide a substrate to which oysters could attach themselves.

Many Pine Beach residents are likely to work in Toms River, which is only about a five-minute drive. The largest employer in Toms River is the Community Medical Center with 2,870 full- and part-time employees. Many other residents work in the offices of doctors and other health care professionals. The Toms River school district is the second-largest employer in Toms River, with about 2,200 employees; Pine Beach, Beachwood and South Toms River are all included in the school district. The third-largest employer is the Ocean county government, based in Toms River, with 1,550 full- and part-time workers. Ocean county has a $3 billion-a-year tourism economy.

According to Census 2000 data, jobs in agriculture, forestry, fishing and hunting, and mining accounted for 4 positions or 0.4% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 54 positions or 5.5 % of jobs. Educational, health, and social services (28.8%), retail trade (13.2%), and construction (10.5%) were the primary industries.

Median household income in Pine Beach in 2000 was $57,336 (up 45.2% from $39,500 in 1990) and per capita income was $26,487. For full-time year round workers, men

made approximately 47.6% more per year than women. The average family in Pine Beach in 2000 consisted of 3.01 persons. With respect to poverty, 2.5% of families (down from 2.7% in 1990) and 3.5% of individuals earned below the official U.S. Census poverty threshold ($8,794), while 19.0% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $149,100.

Pine Beach has little commercial fishing activity. Of the ten years 1997-2006, there were landings in Pine Beach in only three years: 2000, 2003, and 2005. There were no vessels listing Pine Beach as their home port during that period. Between 2001-2003, there was one vessel owner residing in Pine Beach. In 2003, the most valuable landings were of summer flounder, worth $9,955, followed by *Loligo* squid ($1,280) and scup ($642). When averaging 1997-2006 landings, the most valuable species was tilefish. However, there were no 2003 landings of tilefish at all.

Some websites listing Pine Beach as a tourist destination mentioned fishing as one activity in the community, but no other information about recreational fishing could be found. The Pine Beach Yacht Club also mentions fishing from their facilities.

The borough is planning to develop a waterfront park and River Walk along the Toms River, which would include a municipal dock and boat basin. There is also a proposal in the works for the state to assist in providing affordable coastal housing in Pine Beach.

Point Pleasant/Point Pleasant Beach

Because of the close relation between Point Pleasant and Point Pleasant Beach with regard to the commercial and recreational fishing industries, they are being considered here as a single community. The first community in the Point Pleasant area was called Lovelandtown, and was made up of settlers who fished, clammed, hunted, and otherwise subsisted from bay environment. Over the years, Point Pleasant has transitioned from an existence as a summer resort town to becoming a family community of about 19,000 year-round residents. Point Pleasant Beach, NJ, located 1.5 miles from Point Pleasant, is known as a destination for recreational fishermen. Point Pleasant supports a large recreational fishing fleet, and a small commercial fleet targeting fluke, squid, silver and red hake, and scallops (mostly in local waters) and surfclams. Though the surfclam fishery was pioneered here and surfclams continue to be landed, there are no longer any processing plants in Point Pleasant.

In 2005 a Virginia company was pushing to open the waters off New Jersey for pursuing menhaden with seine nets, an idea to which recreational fishermen are strongly opposed. Menhaden are a favorite bait fish for striped bass fishermen, and menhaden are also an important food source for striped bass.

The majority of the docks, bait and tackle shops, and other infrastructure for the commercial fishing industry are located in Point Pleasant Beach. However, because real estate is likely to be much more expensive within the borough of Point Pleasant Beach,

the majority of fishermen are likely to live in the borough of Point Pleasant. Point Pleasant, located along the Manasquan Inlet, is also in itself an important destination for recreational fishing, with numerous boats docked in Point Pleasant along the river.

According to Census 2000 data, in *Point Pleasant* jobs with agriculture, forestry, fishing and hunting accounted for 31 positions or 0.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 619 positions or 6.4% of jobs. Educational health and social services (23.4%), retail trade (12.4%), construction (10.9%), professional, scientific, management, administrative and waste management services (9.3%), arts, entertainment, recreation, accommodation and food services (8.2%), and finance, insurance, real estate and rental and leasing (7%) were the primary industries.

According to Census 2000 data, in *Point Pleasant Beach* jobs with agriculture, forestry, fishing and hunting accounted for 65 positions or 2.6% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 104 positions or 4.4% of jobs. Educational health and social services (19.2%), arts, entertainment, recreation, accommodation and food services (14.6%), retail trade (11.8%), public administration (10.2%), professional, scientific, management, administrative and waste management services (9.4%), and finance, insurance, real estate and rental and leasing (7.2%) were the primary industries.

Median household income in *Point Pleasant* was $55,987 (up 27.1% from 1990) and median per capita income was $25,715. For full-time year round workers, men made approximately 54.5% more per year than women. The average family in Point Pleasant consisted of 3.06 persons. With respect to poverty, 2% of families (up from 1.6% in 1990) and 3.2% of individuals earned below the official U.S. Census poverty threshold ($8,794), while 15.9% of families in 2000 earned less than $35,000 per year(the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $160,100.

Median household income in *Point Pleasant Beach* was $51,105 (up 48.9% from $34,799 in 1990) and median per capita income was $27,853. For full-time year round workers, men made approximately 8.0% more per year than women (significantly different than in Point Pleasant). The average family in Point Pleasant Beach consisted of 2.96 persons. With respect to poverty, 5% of families (up from 1.6% in 1990) and 6.1% of individuals earned below the official U.S. Census poverty threshold ($8,794), while 18.3% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $223,600.

Much of the economy of Point Pleasant and Point Pleasant Beach is based on tourism, and a substantial segment of the tourist population travel to this area to fish. Even during the winter, Point Pleasant will sometimes maintain some tourism during years when fish are more plentiful during the winter months. The largest employers in Point Pleasant Beach are mostly related to the tourist industry: Jenkinson's Beach and Boardwalk (with a beach, amusement rides, aquarium, night club, and restaurants), Meridian Health

Center, Food Town, Chef's International (restaurant chain), and motels. The most significant sources of employment in Point Pleasant, by contrast, are banks and car dealerships.

The Fishermen's Dock Cooperative on Channel Drive in Point Pleasant Beach is one of two active fishing cooperatives in New Jersey. Incorporated as a cooperative in the early 1950s, the "Co-op" is an integral part of the waterfront community of Point Pleasant Beach. The Co-op markets its members' catch, and offers them fuel, packing, and ice at a discounted rate. Becoming a member of the Co-op is difficult; it requires a vacancy and proof of being an able fisherman, as well as the purchase of a share in the Co-op. Many existing members of the Co-op are the sons of the original founders, and some are third or fourth generation fishermen. The Greater Point Pleasant Charter Boat Association in Township was formed in 1981.

The fleet of the Fishermen's Dock Co-op is comprised mostly of smaller draggers, up to about 80 feet in length. They fish mostly in the New York Bight, in mixed trawl fisheries. The development of the shellfishery here has been very important to maintaining a commercial fishing industry in Point Pleasant. Point Pleasant Beach was listed as the eighth largest commercial fishing port on the East Coast in 2003. The top three landed species by value in Point Pleasant for 2003 were ocean quahog, surfclam and sea scallop. Other important species include monkfish, *Loligo* squid, and summer flounder. Tilefish landings averaged less than $500 per year.

Monmouth County

Belford/Middletown

The community of Belford, New Jersey is located on the Bayshore in the township of Middletown, in Monmouth county. Belford lies along Sandy Hook Bay (part of the Raritan Bay complex), and occupies 1.3 square miles of land. While NMFS shows landings for both Belford and Middletown, the data reaffirm that most fishing in Middletown takes place from Belford itself. Thus they are grouped as a single fishing community.

Fishing has been a long tradition in this area; the Lenni Lenape Indians fished in the bay here before white settlers arrived and the Dutch were fishing here in the 1600s. A menhaden processing plant was built in Belford in the late 1800s, which operated until 1982; this was once the town's largest employer. The presence and stench of the menhaden plant helped maintain Belford as a relatively unchanged fishing port while the rest of the shore around it was subject to intense development and tourism. Belford has notoriously been home to pirates, blockaders, rum runners, and even through the 1980s, fish poachers. Some consider Belford to be the longest continuously operating fishing village on the East Coast.
The promised clam depuration plant and renovation of the cooperative and other fishing infrastructure in Belford, which may be of great benefit to the fishing community here, have been continuously postponed, and fishermen are concerned that condominiums will

be built on the property instead. The project was being headed by the Bayshore Economic Development Corporation, which later became surrounded with controversy and had some of its state funding cut off.

As Belford becomes more accessible to commuters to New York City and elsewhere, and as housing is increasingly scarce around the city, many people are moving to Belford and forcing up the price of homes. The resulting increase in property taxes may force some residents who have lived in Belford their entire lives to relocate. Belford represents some of the last untouched waterfront real estate in New Jersey within commuting distance to New Jersey, and development pressures here are increasing. In 2006 the Town of Middletown was awarded a $75,000 Smart Future planning grant from the state to study ways to improve the economic vitality of the fishing industry in Belford.

There is frequently conflict between menhaden purse seine vessels from Belford and recreational fishermen, who criticize the vessels for catching large amounts of oysters and sport fish species along with the menhaden. For this and other reasons, there is frequently animosity between recreational and commercial fishermen.

The site of the Belford Fisherman's Co-op has an interpretive exhibit about the commercial fishing industry here. Monmouth county wishes to promote the co-op as a regional tourist attraction. The Leonardo Party and Pleasure Boatman's Association hosts fishing tournaments out of the Leonardo State Marina. The NY/NJ Baykeeper is working to protect and preserve the Hudson/Raritan Estuary for the benefit of both natural and human communities. The organization worked unsuccessfully in conjunction with the Belford fishermen in an attempt to prevent the construction of the New York City ferry dock in Belford.

The largest employers in the township of Middletown are the following: AT&T (3,300+ employees), Food Circus Supermarkets, Inc. (1,263 employees), Brookdale Community College (737 employees), and T&M Associates (200 employees). There are many other large employers throughout Monmouth county where Middletown residents are likely to be employed. Additionally, many of Middletown's residents commute to work in New York City.

According to Census 2000 data, in *Belford* jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 17 positions or 2.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 46 positions or 6.2% of jobs. Construction (17.5%), educational, health, and social services (16.5%), professional, scientific, management, administrative, and waste management services (12.8%), and manufacturing (8.9%) were the primary industries.

According to Census 2000 data, in Middletown jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 95 positions or 0.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 1,587 positions or 4.9 % of jobs. Educational, health, and social services

(18.6%), finance, insurance, real estate, and rental and leasing (13.4%), professional, scientific, management, administrative, and waste management services (12.6%), and retail (12.0%) were the primary industries.

Median household income in *Belford* in 2000 was $66,964 (1990 population data was unavailable for Belford) and per capita income was $25,412. For full-time year round workers, men made approximately 47.9% more per year than women. The average family in Belford consisted of 3.29 persons. With respect to poverty, 1.3% of families (1990 population data was unavailable for Belford) and 3.2% of individuals earned below the official U.S. Census poverty threshold ($8,794), while 14.4% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $146,000.

Median household income in Middletown in 2000 was $75,566 (up 38.6% from $54,503 in 1990) and per capita income was $34,196. For full-time year round workers, men made approximately 67.7% more per year than women. The average family in Middletown consisted of 3.27 persons. With respect to poverty, 1.9% of families (similar to 1.8% in 1990) and 3.1% of individuals earned below the official U.S. Census poverty threshold ($8,794), while 11.3% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $210,700.

Belford is listed as one of the six major commercial fishing ports in the state of New Jersey. Belford has a tradition of fishing for menhaden that dates back to the 1800s, when a processing plant was constructed here. Although the plant is no longer in existence, today menhaden are still pursued from Belford with trawlers fitted with purse seines. Menhaden have experienced a resurgence recently (2006), primarily for use as bait. The commercial fishing activity is based out of Compton Creek.

Commercial catches all go through the Belford Seafood Cooperative, which sells most of its product to Fulton Fish Market and to other markets along the East Coast. The Belford Seafood Cooperative, founded in 1953, handles members' catches, purchases fish from non-members, arranges for the sale and transportation of the fish, and leases a lot of the docks to the fishermen. There are about 20-30 vessels associated with the Co-op, including about 14-15 draggers, about 12 lobster boats, and a number of crabbing boats. There are about 40 vessels in total located in Belford. The species group for which there are the highest federal commercial landings is summer flounder, scup, black sea bass. Tilefish bring in only a few hundred dollars per year.

Recreational fishing is important to the Bayshore region; there are a number of bait and tackle shops and marinas located here. However, there is little recreational fishing in Belford itself.
The Middletown Master Plan recognizes the importance of Belford as a fishing community and expresses a determination to maintain this character. There is a proposed fishing center for Belford called the Bayshore Technology Center, which would include a research and development facility, a fish farming center, and a clam depuration plant. The

goals of the technology center would be to create jobs, promote growth in the Bayshore's commercial fishing industry, and secure the future of the Cooperative. There are also plans in the works to refurbish the cooperative itself. These plans have recently been stalled, but the town has just received a grant from the state to begin working on this project itself. The township and county have been making major infrastructure improvements in and around Belford to roads, bridges, etc. in an effort to revitalize the community and to draw people from elsewhere.

The community of Belford, despite its proximity to many large urban centers, had been relatively isolated and underdeveloped. However, recently ferry service began between Belford and New York City, and a large upscale condominium development was built, bringing an influx of people to the community. Fishermen anticipate the community will change a great deal. The town has expressed a desire to maintain fishing here, but commercial fishermen perceive this as referring to only recreational fishing activity. There is concern that the new residents won't like the sight and smell of the fisherman's co-op, and the resulting conflict will harm the fishing industry. Many fishermen believe the proposed construction of a clam depuration plant could boost the industry; currently all clams taken from the bay need to be purified to rid them of pollution, and the depuration plants in nearby communities don't have the capacity to take many clams from Belford.

Cape May County

Sea Isle City

In 1880 Thomas Landis purchased the barrier island then known as Ludlum Island (now Sea Isle City) and transformed it into a vacationland modeled off of Venice, Italy. The island was connected to mainland New Jersey with roads and rail lines, and became a "Sea and Sand Family Vacationland", which is how it is known today. Many hotels and restaurants were built near the beachfront providing for a development in tourism. Today, the town serves as a year round residency comprised mainly of middle-aged to elderly residents, and a summer vacationland for tourists. Sea Isle City is sometimes referred to as a "fishermen's paradise" because of the large number of charter boats and the amount of fishing which occurs here.

According to the Census 2000 data, Sea Isle City has a total population of 2,835, up 66.8% from a reported population of 1,700 in 1990. The population structure for Sea Isle City clearly shows an aging population, with the vast majority of residents in their 50s, 60s, and 70s, with quite a few residents in the 80+ category as well. This paints a picture of Sea Isle City as largely a retirement community.

According to Census 2000 data, jobs with agriculture, forestry, fishing and hunting accounted for no jobs. Self employed workers, a category where fishermen might be found, accounts for 89 or 6.9% of the labor force. Finance, insurance, real estate and rental and leasing (9.4%), educational, health and social services (19.4 %), retail trade

(13.3%), professional, scientific, management, administrative, and waste management services (5.1%), and construction (7.1%) were the primary industries.

Median household income in Sea Isle City is $45,708 (up 7.1% from $32,218 in 1990) and median per capita income is $28,754. For full-time year round workers, males made approximately 25.6% more per year than females. The average family in Sea Isle City consists of 2.07 persons. With respect to poverty, 6.4% of families (up from 2.0% in 1990) and 7.6% of individuals earned below the official U.S. Census poverty threshold ($8,794), and 31.6% of families in Sea Isle City in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine).[24] In 2000, the median cost for a home in this area was 280,100.

Recreational fishing is available near-shore and deep-sea. Many Recreational boats that depart from Sea Isle City are members of the Cape May County Party and Charter Boat Association. There are various marinas in Sea Isle City. Surfcasting is also popular in Sea Isle City, at beach locations at 93rd Street and North of 20th Street, and fishing piers at 59th Street and Sounds Avenue.

Sea Isle City has a small commercial fishing port, which is entirely dependent on a highly dynamic inlet for access to the sea. There is a small offshore longline fishery out of Sea Isle City for tuna and swordfish, as well as offshore pot fisheries for lobster, conch, and black sea bass, and gillnetting for monkfish. The most significant landings category in Sea Isle City is the "other" category, which reflects the longlining for tuna and swordfish, as well as the conch fishery. Additional valuable species are lobster and black sea bass.

Sea Isle City, like most places of the New Jersey Shore, experiences severe annual coastal zone erosion. Erosion and other coastal hazards threaten the physical structure and livelihood of communities, pressing for continued development of coastal zone management.

Massachusetts

Essex County

Gloucester

The history of Gloucester has revolved around the fishing and seafood industries since its settlement in 1623. Part of the town's claim to fame is being the oldest functioning fishing community in the United States. In 1924 a town resident developed the first frozen packaging device, which allowed Gloucester to ship its fish around the world without salt. The town is still well-known as the home of Gorton's frozen fish packaging company, the nation's largest frozen seafood company. Gloucester demonstrates dedication to its fishing culture through numerous social events, cultural memorial structures, and organizations. These include the famous "Man at the Wheel" statue commemorating fishermen lost at sea, and a 2001 statue honoring fishermen's wives.

[24] http://www.census.gov/hhes/www/poverty/threshld/thresh00.html (accessed April 12, 2007)

According to Griffith and Dyer (1996): “Probably 80 percent of Gloucester's fishermen are Italian (mostly Sicilian). Although large immigration flows ended in the mid-1970's, there are at least 26 vessels (out of approximately 200) on which only Italian is spoken.”

Gloucester Seafood Display Auction, opened in 1997 by the Cuilla family, quickly grew to become the largest open display auction of fresh seafood in North America as of 2000. This allows buyers to purchase fish directly from the boats rather than having to rely on fish brokers, as they did in the past.

Cape Pond Ice employing 30 people in the busy summer season of 2004, was started in 1848. It is the only ice business remaining in Gloucester, and provides other ice services, such as vegetable transport and ice sculptures to offset the declining business from the fishing industry. B&N Gear is the only bottom trawl gear seller in town (Finch 2004). Gorton’s employs approximately 500 people, but it is important to note that at least as of 2000, the company had been processing and packaging only imported fish since the mid 1990s.

According to Census 2000 data, jobs with agriculture, forestry, fishing and hunting accounted for 382 or 2.5% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 1,319 or 8.6% of the labor force. Educational, health and social services (20.2%), manufacturing (16.7%), retail trade (10.8%) and entertainment, recreation, accommodation and food services (9.2%) were the primary industries.

Major employers that provide over 100 jobs in Gloucester include the following businesses with the number of employees in parentheses: Varian Semi Conductor Equipment Associates (950), Gorton’s (500), Battenfeld Gloucester Engineering (400), Shaw’s Supermarkets (350), Addison Gilbert Hospital (325), NutraMax Products (220), and Seacoast Nursing and Retirement (160).

The median household income in 2000 was $47,772 (a considerable increase from 1990 when the median household income was $32,690) and median per capita income in 2000 was $25,595. For full-time year round workers, men made approximately $10,899 more per year than women. The average family in Gloucester in 2000 consisted of 3.0 persons. With respect to poverty, 7.1% of families (up from 6.7% in 1990) and 8.8% of individuals earned below the official U.S. Census poverty threshold ($8,794), and 26% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $204,600.

Both the Gloucester Fishermen’s Association and Gloucester Lobstermen’s Association are located in Gloucester. The Massachusetts Fishermen’s Partnership, established in Gloucester in 1995, is an organization for fishermen of any sector within the Massachusetts fishing industry. The Gloucester Fishermen and Family Assistance Center was established in 1994. Currently it is run and funded by grants from the Department of Labor. The Gloucester Fishermen’s Wives Association (GFWA) was founded in 1969 by

the wives of Gloucester fishermen. The Northeast Seafood Coalition is also located in Gloucester.

Gloucester has been a full service port for the commercial fishing industry in the region; however, this status would be jeopardized if one or more of the facilities went out of business. Gloucester remains an important port nationally; the largest species group landings in Gloucester are of groundfish. Gloucester is also home to roughly a dozen fishing charter companies and party boats fishing for bluefin tuna, sharks, striped bass, bluefish, cod, and haddock.

The Massachusetts Department of Housing and Community Development recognize that the fishing industry is changing. The city must adapt to these major economic changes. Although the city is preparing for other industries, such as tourism, they are also trying to preserve both the culture of fishing and the current infrastructure necessary to allow the fishing industry to continue functioning. The city is also currently working with the National Park Service to plan an industrial historic fishing port, which would include a working fishing fleet. This would preserve necessary infrastructure for the fishing industry and preserve the culture to further develop tourism around fishing.

Bristol County

New Bedford

New Bedford, originally part of Dartmouth, was settled by Plymouth colonists in 1652. Fishermen established a community in 1760 and developed it into a small whaling port and shipbuilding center within the next five years. By the early 1800s New Bedford had become one of the world's leading whaling ports.

The discovery of petroleum greatly decreased the demand for sperm oil, bringing economic devastation to New Bedford and all other whaling ports in New England. The last whale ship sailed out of New Bedford in 1925. In attempts to diversify the economy, the town manufactured textiles until the southeast cotton boom in the 1920s. Since then, New Bedford has continued to diversify its economy, but the city is still a major commercial fishing port. It consistently ranks in the top two ports in the U.S. for landed value.

In terms of ancestry, the residents of New Bedford trace their backgrounds to several countries, but most of all to Portugal (41.2% in 2000). In addition there were 8.9% who were Portuguese speaking Cape Verdeans.

New Bedford struggles with a highly contaminated harbor and harbor sediment. New Bedford Harbor is contaminated with metals and organic compounds, including polychlorinated biphenyls (PCBs).[25] Because of the high concentrations of PCBs in the sediment, New Bedford Harbor was listed by the U.S. EPA as a Superfund site in 1982 and cleanup is underway.

[25] http://www.brownfields.noaa.gov/htmls/portfields/pilot_newbed.html (accessed December 22, 2006)

Another issue is crews. According to a 2002 newspaper article, fishing vessel owners complain of a shortage of crewmen. They attribute this scarcity to low unemployment rates that have kept laborers from the docks.

New Bedford hosts multiple cultural events celebrating its fishing and maritime history, and is also home to the Azorean Maritime Heritage Society, the New Bedford Whaling Museum and the New Bedford Whaling National Historical Park.

The New Bedford Economic Development Council (NBEDC), Inc was established in 1998 to improve the city's economic development by helping to attract business and job opportunities to the city. The NBEDC also provides small business funds and offers financial support (in loans) for new businesses or those who want to expand. One of their loan funds is specifically targeted at fishermen. The Community Economic Development Center is a non-profit organization vested in the economic development of the local community. The organization is unique in that it is involved with fisheries management.

According to Census 2000 data, jobs with agriculture, forestry, fishing and hunting accounted for 407 or 1.1% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 1,485 or 3.9% of the labor force. Educational, health and social services (20.9%), manufacturing (20.7%), retail trade (12.1%), entertainment, recreation, accommodation and food services (7.4%), and construction (7.1%) were the primary industries.

Median household income in New Bedford in 2000 was $27,569 (an increase from $22,647 in 1990) and median per capita income was $15,602. For full-time year round workers, men made approximately $9,110 more per year than women. The average family in New Bedford in 2000 consisted of 3.01 persons. With respect to poverty, 17.3% of families (up slightly from 16.8% in 1990) and 20.2% of individuals earned below the official U.S. Census poverty threshold ($8,794), and 48.8% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $113,500.

There are a variety of fishing associations which aid the fishing industry in New Bedford, including the American Dogfish Association, the American Scallop Association and the Commercial Anglers Association. New Bedford also is home to a Fishermen's Wives Association which began in the early 1960s. Shore Support has been the primary fishing assistance center in New Bedford since 2000, though the New Bedford Fishermen and Families Assistance Centers are also available as is the Trawlers Survival Fund. There are several other fishing related organizations and associations that are vital to the fishing industry such as the Fisheries' Survival Fund (Fairhaven), the New Bedford Fishermen's Union, the New Bedford Seafood Coalition, the New Bedford Seafood Council and the Offshore Mariner's Association.

According to the federal commercial landings data, New Bedford's most successful fishery has been scallops, followed by groundfish. New Bedford contains approximately 44 fish wholesale companies, 75 seafood processors and some 200 shore side industries.

Maritime International has one of the largest U.S. Department of Agriculture-approved cold treatment centers on the East Coast. Its terminal receives approximately 25 vessels a year, most carrying about 1,000 tons of fish each. While fishing in New Bedford Harbor is discouraged, a number of companies in New Bedford offer the public recreational fishing excursions including boat charters.

For several years work was underway to construct the New Bedford Oceanarium that would include exhibits on New Bedford's history as a whaling and fishing port, and was expected to revitalize the city's tourist industry and create jobs for the area. The Oceanarium project failed to receive its necessary funding in 2003 and 2004, and while the project has not been abandoned, it seems unlikely the Oceanarium will be built anytime in the near future.

According to a 2002 newspaper article, many fishermen believe that based on the quantity and ages of the specimens they catch – the fish are coming back faster than studies indicate. While most admit that regulations have worked, they believe further restrictions are unnecessary and could effectively wipe out the industry. "If they push these regs too hard, the whole infrastructure of fishing here could collapse," according to a New Bedford fishermen.[26]

Rhode Island

Washington County

Point Judith/Narragansett

Point Judith is located in Washington county 4 miles south of Narragansett along Highway 108 near Galilee State Beach, located at the western side of the mouth of Rhode Island Sound, within the Census Designated Place (CDP) of Narragansett Pier. Narragansett is located in Washington county 30 miles south of Providence. Point Judith itself is not a CDP or incorporated town, and as such has no census data associated with it. Thus, this profile provides census data from Narragansett Pier CDP and other data from both Point Judith itself and Narragansett. As Point Judith is not actually a residential area, and those who fish from Point Judith live in surrounding communities, this actually is more representative of the "fishing community" than would be any data on Point Judith alone.

By the 1800's many area farmers began to supplement their income by fishing for bass and alewife, or digging oysters. Eventually, the Port of Galilee was established in the mid 1800's as a small fishing village. By the early 1900's Point Judith's Port of Galilee became one of the largest fishing ports on the east coast. This was largely due to a series of construction projects that included dredging the present breachway and stabilizing it with stone jetties and the construction of three miles of breakwater that provided refuge from the full force of the ocean. By the 1930's wharves were constructed to facilitate large ocean-going fishing vessels. At this point the port became important to the entire

[26] http://www.csmonitor.com/2002/0429/p15s03-wmwo.html (accessed December 22, 2006)

region's economy. Today, Point Judith is not only an active commercial fishing port but supports a thriving tourism industry that includes restaurants, shops, whale watching, recreational fishing, and a ferry to Block Island. It also has a number of fish processing companies that do business locally, nationally, and internationally.

Not unlike many fishing communities in the Northeast, increasingly stringent fishing regulations could jeopardize the viability of Point Judith as a fishing port. Specifically, Point Judith processing companies have difficulty handling drastic deviations in the number of landings, commonly due to the lifting or expanding of quotas, as well as sudden changes in what species are landed. Additionally, the boom in tourism at Point Judith has had an adverse effect on the commercial fishing industry. Not only do fishermen battle parking issues but shore front rents for fish processing companies and the cost of dockage and wharfage for vessels have increased.

According to the U.S. Census 2000, jobs with agriculture, forestry, fishing and hunting accounted for 31 jobs (1.6% of the labor force). Self employed workers, a category where fishermen might be found, accounted for 171 jobs or 8.6% of the labor force. Educational, health and social services (30.9%), professional, scientific, management, administrative, and waste management services (12.1%), manufacturing (10.9%) and arts, entertainment, recreation, accommodation and food services (10.3%) were the primary industries.

Median household income in Narragansett Pier CDP in 2000 was $39,918 (up from $31,853 in 1990) and median per capita income was $26,811. For full-time year round workers, men made approximately $4,934 more per year than women. The average family in Narragansett Pier CDP consisted of 2.7 persons. With respect to poverty, 8.8% of families (up from 2.7% in 1990) and 14.1% of individuals earned below the official U.S. Census poverty threshold ($8,794), and 31.3% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $195,500.

Point Judith Fishermen's Cooperative was purchased in 1994 and is now run as an independent fish marketing organization. Rhode Island Seafood Council, a not-for-profit organization established in 1976, promotes quality seafood products. The American Seafood Institute was established in 1982 in conjunction with the Rhode Island Seafood Council and provides assistance to the fishing industry in exporting product overseas. The Bay Company was developed under the Rhode Island Marine Trade Education Initiative and attempts to link academia to the marine industry to improve productivity and economic viability.

Point Judith vessels employ a wide range of gear types and fish for diverse species. The top federally managed species groups landed here are lobster, squid/mackerel/butterfish, groundfish and monkfish. Point Judith also has a substantial recreational fishing sector.

Point Judith fishermen are not very positive about the future of Point Judith as a fishing port. Besides the main concern of stringent fishing regulations Point Judith fishermen

also must contend with the ever increasing tourism at the port. This has caused parking issues and rent increases.

Newport County

Newport

Although Newport's port is now largely dedicated to tourism and recreational boating, it has had a long commercial fishing presence. In the mid 1700s Newport was one of the five largest ports in colonial North America and until Point Judith's docking facilities were developed it was the center for fishing and shipping in Rhode Island.

Unlike many fishing communities, according to the 2000 U.S. Census Newport's age structure was skewed to some degree to the younger age groups; the largest percentage of the population is to be found in the age group from 20 to 29, which in part reflects the presence of the nearby naval base.
Like other fishing communities, Newport must cope with increasingly strict regulations for many species. In addition, pollution impacts, increased tourism, increasing property values, and competition with recreational vessels for limited wharf space have restricted fishing industry infrastructure and led to declines in Newport's fleet.

According to Census 2000 data, jobs with agriculture, forestry, fishing and hunting accounted for 91 or 0.7% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 1,056 or 8.3% of the labor force. Educational, health and social services (19.9%), arts, entertainment, recreation, accommodation and food services (18.6%), professional, scientific, management, administrative, and waste management services (12.3%), retail trade (10.9%), and manufacturing (7.2%) were the primary industries.

The median household income in 2000 was $40,669 (up from $30,534 in 1990) and median per capita income was $25,441. For full-time year round workers, men made approximately $10,288 more per year than women. The average family in Newport in 2000 consisted of 2.86 persons. With respect to poverty, 12.9% of families (up from 10.0% in 1990) and 14.4% of individuals earned below the official U.S. Census poverty threshold ($8,794), and 32.4% of families in 2000 earned less than $35,000 per year (the poverty threshold for a family of nine). In 2000, the median cost for a home in this area was $161,700.

There are several fishing associations which aid the fishing industry in Newport. The Ocean State Fishermen's Association is located in nearby Barrington; the Rhode Island Commercial Fishermen's Association, as well as the Rhode Island Lobstermen's Association, are in nearby Wakefield; and the Massachusetts Lobstermen's Association is in nearby Scituate, Massachusetts. The State Pier 9 Association and Atlantic Offshore Fishermen's Association are involved in the Newport's fishing industry. The Rhode Island Seafood Council is located in nearby Charlestown. The local Seamen's Church

Institute is an organization that brings soup around to the docks for workers and fishermen

Newport has the State pier #9 which is the only state owned facility for commercial fishing in Newport Harbor, providing dockage for approximately 60 full-time fishing vessels primarily used by the lobster fleet. There are also multiple marinas and moorings. The top three federally managed species groups landed here are lobster, squid/mackerel/butterfish, and large mesh groundfish. Recreational species targeted out of Newport include: striped bass, tuna, shark, bluefish and fluke. Charter options are numerous.

From interviews collected for the "New England Fishing Communities" report (Hall-Arber et al. 2001), Hall-Arber and others found that fishermen fear that increasing tourism and cruise ships will cause the State Pier 9 to be used more for tourism than a harbor for commercial fishing, as the fishing industry is far from being a major economic input to Newport.

6.5.2 Economic Environment

Characteristics of the top tilefish ports are identified and described in the preceding section (6.5.1). The focus in this section is on participation, fleet characteristics, and economic trends in the fisheries.

Commercial Fishery

Access to the Commercial Fishery

With the implementation of the Tilefish FMP in November 1, 2001 (66 FR 49136; September 26, 2001), commercial fishing permit requirements were required to participate in the fishery. There are four Federal permits that pertain to harvest of tilefish by commercial fishing vessels in accordance with 50 CFR Part 648.4. There are three limited access tilefish permits (full-time tier 1 category, full-time tier 2 category, part-time category) and an incidental catch permit category. Any U.S. fishing vessel fishing under a tilefish incidental catch category permit is prohibited from possessing more than 300 lb of tilefish per trip.

NMFS vessel permit files indicate that there were 3 vessels permitted to participate in the tilefish fishery as full-time tier 1 vessels; 5 vessels as full-time tier 2 vessels; 20 as part-time vessels; and 2,256 vessels as incidental vessels in 2005. According to dealer data files, all permitted vessels in the full-time tier 1 category landed tilefish in 2005, while only 40 percent (2 vessels) of the permitted vessels in the full-time tier 2 category and 35 percent (8 vessels) of the permitted vessels in the part-time category landed tilefish that year. In addition, approximately 142 vessels landed tilefish under the incidental catch permit category in 2005. According to dealer data, the vast majority of the tilefish landings in 2005 (approximately 90%) came from vessels permitted to participate in the limited access fishery.

Fleet Characteristics

NMFS vessel permit files indicate that the vessels with tilefish limited access permits in 2005 were primarily home ported in Barnegat Light, New Jersey (12 vessels) and Montauk, New York (3 vessels), and other ports (including Eliot and Portland in Maine; Sciatute, Boston, Gloucester, and New Bedford in Massachusetts; New York in New York; Philadelphia in Pennsylvania; New Port, Providence, and Wakefield in Rhode Island; and Wanchese in North Carolina). However, the top four vessels with the largest landings in 2005 (approximately 50% of the tilefish landed) were home ported in the ports of Montauk and New York (New York). New York, New Jersey, and Rhode Island are the primary states where tilefish are landed commercially (Table 3). For the last five years, a significant downward trend and a significant upward trend in landings is evident in New York and New Jersey, respectively. Landings in Rhode Island show a slightly upward trend for the last five years.

With regard to specific ports, the majority of the tilefish landings (98%) in recent years (2000-2005) came from five ports: Montauk [60% of landings, 66% of value] and Hampton Bays [13% of landings, 15% of value], NY (Suffolk county); Long Beach/Barnegat Light [13% of landings, 11% of value], NJ (Ocean county); Point Judith [7% of landings, 5% of value], RI (Washington county) and Gloucester [2% of landings, 1% of value], MA (Essex county). Only 7 ports, however, have at least a 1.0% fishing revenue dependence on tilefish: Pine Beach and Long Beach/Barnegat Light, NJ (Ocean county) Montauk, Hampton Bays and Mattituck, NY (Suffolk county), Middletown, NJ (Monmouth county), and Point Judith, RI (Washington county). Ports showing at least a 1% landings dependence on tilefish are all of these except Point Judith. Pine Beach and Middletown, NJ and Mattituck, NY (which were not in the upper tiers of tilefish ports in general) come to the fore. And Gloucester, which was in the top 5 tilefish ports in terms of tilefish landings, drops out of the top list when tilefish landings are compared to total landings for the port. We must remember, however, that Gloucester still has high tilefish landings and revenue relative to the tilefish fishery. Further, though Pine Beach is highly dependent based on tilefish landings relative to all landings, its total landings are still very low (see section 6.5).

Tilefish vessels are usually of steel construction and range in length from 50 to 100 feet (MAFMC 2000). NMFS permit data for 2005 indicates that regardless of permit category held, the bulk of the permitted commercial tilefish vessels are located in New Jersey, followed by Massachusetts, and New York. These vessels range in size from less than 35 to 91 gross tons and between 49 and 76 feet in length. Crew size for these vessels ranges between 3 and 6.

According to the 2005 permit data, full-time tier 1 vessels are primarily home ported in New York. These vessels average 73 gross tons and 70 feet in length. The average crew size for these vessels is 5. According to NMFS dealer data files, full-time tier 1 vessels contributed with the bulk of the landings (60%) in 2005, followed by part-time vessels (18%) and full-time tier 2 vessels (12%).

Full-time tier 2 vessels are evenly distributed along the states (with homeports in Massachusetts, Maine, New Jersey, Pennsylvania, and New York). These vessels range in average size from 35 to 91 gross tons and are between 9 and 75 feet in length. Crew size for these vessels ranges between 2 and 6.

Part-time vessels are mostly concentrated in New Jersey and Massachusetts. These vessels range in average size from 57 to 64 feet in length and are between 60 and 88 gross tons. Crew size for these vessels ranges between 4 and 5 people. Except for full-time tier 2 vessels in New Jersey and part-time vessels in Rhode Island, a high percentage of commercial vessel owners list the same state as both the vessel owner's declared principal port of landing and their identified home port.

Trends in Tilefish Revenues and Prices

Commercial tilefish ex-vessel revenues have ranged from $2.5 to $4.9 million for the 1996 through 2005 period (Table 29). Ex-vessel revenues have experienced a slight downward trend for the 1996 through 2005 period and they have closely matched trends in landings (Figure 15). The ex-vessel value of tilefish was over 3.3 million in 2005 and accounted for less than 0.4 percent of the total value of all finfish and shellfish species landed from Maine through Virginia. In 2005, New York had the highest landings value at approximately $2.7 million, followed by New Jersey ($0.6 million), and Rhode Island (<$50 thousand). Maine, Massachusetts, Connecticut, Maryland, and Virginia had very low landings values (ranging from a few hundred dollars to $6,000; Table 30).

Table 29. Tilefish commercial ex-vessel value and price[a] by year, Maine through Virginia combined.

Year	Nominal Value (in '000 $)	Nominal Price (mean)	Adjusted Price[b] (mean)
1996	4,159	1.83	1.49
1997	4,869	1.36	1.10
1998	4,793	1.79	1.42
1999	2,557	2.54	2.03
2000	2,479	2.45	2.42
2001	3,310	1.88	1.60
2002	3,502	2.04	1.70
2003	3,608	1.58	1.39
2004	3,461	1.41	1.31
2005	3,345	2.48	2.48

[a] Price was estimated by dividing landed pounds by ex-vessel value.
[b] Prices were adjusted to 2005 equivalents using the Bureau of Labor's Producer Price Index.
Source: NMFS unpublished dealer data.

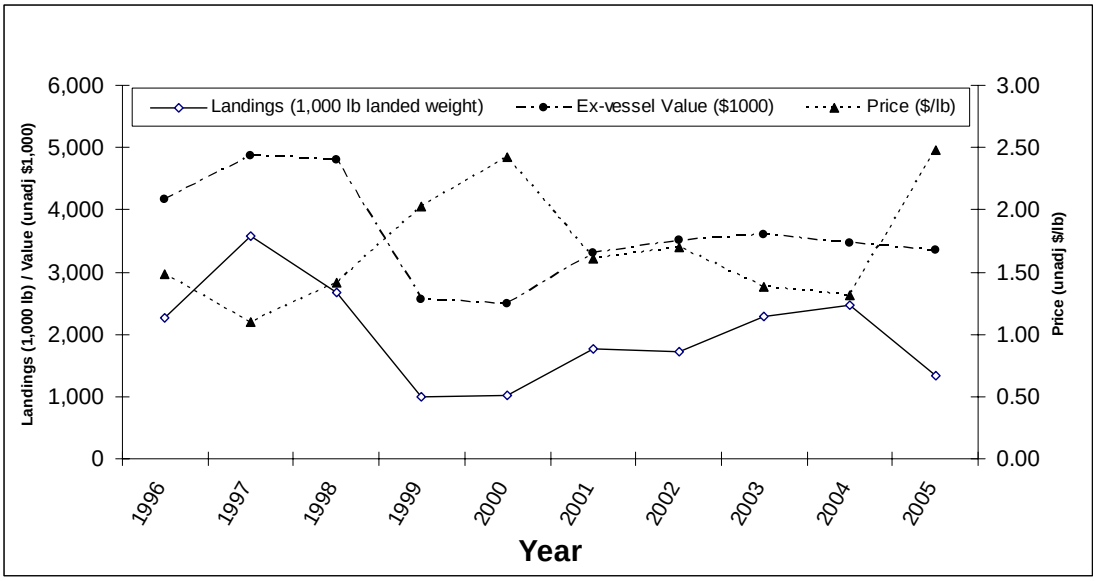

Figure 15. Landings, ex-vessel value, and price for tilefish, Maine through Virginia combined, 1996-2005. Source: NMFS unpublished dealer data.

The mean price for tilefish (adjusted) has ranged from $1.10/lb in 1997 to $2.48/lb in 2005 (Table 29). On average, price fluctuations throughout the years are associated with supply responses, with higher prices generally corresponding to significant decreases in landings (Figure 15).

Total ex-vessel value by state shows the same trends as total commercial landings. In 2005, New York had the highest ex-vessel value at $2.7 million, with the highest mean price of $2.64/lb. Massachusetts fish brought the lowest price ($1.38/lb) in 2005 (Table 30).

Table 30. Tilefish commercial ex-vessel value and price[a] by state, 2005.

State	Landings[b] ('000 lb)	Ex-vessel value ('000 $)	Price ($/lb)
ME	*	*	1.98
NH	0	0	0.00
MA	4	6	1.38
RI	27	42	1.59
CT	3	5	1.67
NY	1,028	2,717	2.64
NJ	281	570	2.03
MD	*	*	1.40
VA	3	5	1.64
Coastwide	1,347	3,345	2.48

[a] Price was estimated by dividing landed pounds by ex-vessel value.
[b] Landed pounds.
Source: NMFS unpublished dealer data.

Seasonally, the months with the highest landings (December through May) had the highest ex-vessel value for the 1996 through 2005 period, with a peak value of $4.6 million in March (Tables 5 and 31). Monthly ex-vessel value averaged $3.0 million 1996 through 2005 period (Table 31).

The tilefish price is sensitive to the timing and the amount of tilefish landed. Prices tend to decline as much as $0.75-$1.00/lb when large quantities of fish saturate the market (i.e., >60,000 lb landed per week; Kitts et al. 2007 (Appendix C)).

The 2001 through 2005 coastwide average ex-vessel price per pound for all market categories combined was $1.88, $2.35 for extra large, $2.86 for large, $2.02 for medium, $1.13 for small, $1.37 for kittens, and $1.65 for unclassified. Price differentials for the 2001 through 2005 period combined indicate that the ex-vessel price per pound for extra large tilefish was 108 percent and 73 percent greater than for small and kittens size categories, respectively. Price differentials for the same time period indicate that large tilefish was 130 percent and 109 percent greater than for small and kittens size categories, respectively. This price differential indicates that larger fish tend to bring higher prices (Table 32). Nevertheless, even tough there is a price differential for various sizes of tilefish landed, tilefish fishermen land all fish caught as the survival rate of discarded fish is very low (L. Nolan 2006; Kitts et al. 2007 (Appendix C)).

Contribution of Tilefish to Total Landings of all Species

Tilefish comprised 0.12 percent and 0.38 percent of the total ex-vessel value and pounds landed of all finfish and shellfish species landed from Maine through Virginia in 2005, respectively. The contribution of tilefish to the total value of all finfish and shellfish vary by state, ranging from less than 0.01 percent in Maine, Massachusetts, Maryland, and Virginia to approximately 9 percent in New York. The contribution of tilefish to the total pounds landed of all finfish and shellfish vary by state, ranging from less than 0.01 percent in Maine, Massachusetts, Maryland, and Virginia to less than 5 percent in New York. Relative to total landings value, tilefish were most important in New York contributing with the largest percentage of ex-vessel value of all commercial landings in those states (Table 33). The overall contribution of tilefish to the total landings and value from Maine through Virginia has not change considerably from the previous year (2004). However, the tilefish contribution to the total landings (3.65%) and value (4.44%) of all species combined in New York was lower in 2004 when compared to 2005.

The economic impact of the commercial tilefish fishery relative to employment and wages is difficult to determine. According to NMFS, commercial fishermen from Maine through Virginia landed approximately 1.1 billion lb of fish and shellfish in 2005. Those landings have been valued at approximately $872 million. Total landed value ranged from $0.9 million in Delaware to $405 million in Massachusetts. However, it can be assumed that only a small amount of the region's fishing vessel employment, wages, and sales are dependent on tilefish since the relative contribution of tilefish to the total value and poundage of all finfish and shellfish is very small. In addition, in the last five years (2001-2005) a small number of vessels (approximately six) have landed the bulk of the tilefish quota.

Table 31. Tilefish commercial ex-vessel value ('000 $) by month and state, 1996-2005, combined.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
State													
ME	11	19	20	24	34	28	5	4	10	10	2	17	184
NH	-	-	-	-	-	*	*	*	-	-	-	-	0
MA	25	35	103	57	17	64	8	2	*	*	1	2	314
RI	357	461	582	250	119	64	129	87	100	100	155	157	2,561
CT	14	30	45	10	3	*	*	*	*	1	2	3	108
NY	2,549	2,894	3,033	2,890	2,143	2,030	1,976	2,261	2,193	2,411	1,934	2,686	29,000
NJ	205	287	785	540	365	216	208	293	274	175	335	208	3,891
MD	-	-	1	*	2	*	*	*	*	1	*	-	4
VA	*	1	*	*	*	6	*	*	2	3	3	*	15
All	3,161	3,727	4,569	3,771	2,683	2,408	2,326	2,647	2,579	2,701	2,432	3,073	36,077

Note: * = less than $ 1,000; - = no landings.
Source: NMFS unpublished dealer data.

Table 32. Landings, ex-vessel value, and price of tilefish by size category, from Maine thought Virginia, 2001 through 2005 and all gears combined.

Size Category	Landings ('000 lb)	Value ($1,000)	Price ($/lb)
Extra large	50	116	2.35
Large	1,372	3,921	2.86
Medium	3,098	6,246	2.02
Small	803	911	1.13
Kittens	3,543	4,868	1.37
Unclassified	579	954	1.65
Other	143	238	1.66
All	9,588	17,254	1.80

Table 33. The percentage contribution of tilefish to the total landings (landed pounds) and value of all species combined from Maine through Virginia, 2005.

State	Pounds of Tilefish as a Percentage of all Species	Value of Tilefish as a Percentage of all Species
ME	<0.01%	<0.01%
NH	---	---
MA	<0.01%	<0.01%
RI	0.03%	0.06%
CT	0.04%	0.03%
NY	4.52%	9.28%
NJ	0.28%	0.45%
DE	---	---
MD	<0.01%	<0.01%
VA	<0.01%	<0.01%
Total	0.12%	0.38%

Source: NMFS unpublished dealer data (preliminary data as of as of May 16, 2006).

Market for Tilefish

Most tilefish are sold fresh. The bulk of the catch is gutted at sea and iced during long trips. Incidental catches are not gutted. When the catch arrives at the dock it is sorted, washed, weighted, and boxed and iced in 60 lb cartoons for shipment with large fish boxed in 100 to 120 lb cartoons. Tilefish are generally transported to the Fulton Sea Food

Market by truck. Tilefish is carried as a specialty item in the Fulton Market for Korean customers. Tilefish supplies are very stable throughout the year as full-time tier 1 participants spread their landings throughout the fishing season to avoid market gluts and large price fluctuations. As previously stated, the bulk of the tilefish quota (66%) is allocated to these vessels. Nevertheless, a light supply increase is evident during the winter and spring months when part-time vessels tend to participate in the fishery and land their catch (L. Nolan pers. comm. 2006).

While tilefish landings in Long Island (New York) are the primarily source of tilefish in the Fulton Fish Market, fish supplied from New Jersey, Rhode Island, and Massachusetts also enter Fulton. In addition, blueline or gray tilefish (*Caulolatilus microps*) landed in Florida (Port Canaveral area) is also marketed in the Fulton Fish Market and to consumers it is identical to the golden tilefish (Kitts et al. 2007 (Appendix C)).

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7.0 ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES (Biological, Non-target Species, Habitat, Endangered and Protected Species, and Human Communities Impacts)

In the following sections, consideration is given to the potential impacts of the alternative management measures in Amendment 1. The impact analysis focuses on the valued ecosystem components (VECs) that were identified for Amendment 1 and described in detail in section 6.0 of this document. These VECs include:

1. Managed Resources - golden tilefish stock
2. Non-target species
3. Habitat including EFH for the managed resources and non-target species
4. Endangered and other protected species
5. Human Communities

All the measures considered in this amendment are described in section 5.0.

MEASURES AFFECTING FISHERY PROGRAM ADMINISTRATION

7.1 Individual fishing quota (IFQ)

The IFQ alternatives and all other alternatives addressed in this amendment were described in section 5.0. For reference purposes, the tilefish IFQ alternatives under consideration are listed in Table 34. In addition, alternative 1F was considered but rejected for further analysis. Because this alternative is not considered to be an effective way to reduce fishing capacity it was not given further consideration beyond the justification for rejection in section 5.1.F.

Alternative 1E is the preferred alternative. Under alternative 1E any combination of historical landings periods proposed for allocation purposes (i.e., average landings for years 1988-1998, average landings for years 2001-2005, or average landings for the best five years from 1997-2005) can be used to allocate IFQ shares to any combination of limited access permit categories (i.e., full-time tier 1, full-time tier 2, and/or part-time). At the April 2008 meeting, the Council chose to use average landings for the 2001-2005 period to allocate IFQ shares to full-time tier 1 and 2 vessels. For part-time vessels, an equal allocation for vessels that landed tilefish during the 2001-2005 period was used to allocate IFQ shares to that permit category.

IFQ reporting requirements are discussed in section 7.8.

7.1.1 Impacts on Managed Resource

As indicated in section 4.1, the FMP which initiated the management for this species became effective November 1, 2001 (66 FR 49136; September 26, 2001) and included management and administrative measures to ensure effective management of the tilefish resource. More specifically, the FMP established a TAL system as the primary control on

fishing mortality. The FMP also implemented a limited entry program and a tiered commercial quota allocation of the TAL. The current management system has limited coastwide tilefish landings to the overall TAL every year since the FMP was effective with the exception on 2003 when the overall quota was exceeded by 16 percent and when the permit categories were vacated by a Federal Court Order in Hadaja v. Evan (see section 4.1). However, the FMP also states that any overages are determined and deducted appropriately from the upcoming fishing year's quota. While IFQ programs can often contribute to the biological protection of fish stocks, in this case it is not likely that it would further contribute to the protection of the stock as tilefish landings are already been controlled by an existing TAL system.

Updated assessment estimates indicate that the tilefish stock is not overfished and that overfishing is not occurring. In fact, according to the 41st SAW assessment, fishing mortality was 0.18 or approximately 14 percent below F_{msy} and biomass has increased to 14.80 million pounds or 72 percent of B_{msy} in 2004. Additional details regarding the status of the stock are presented in section 6.1.

Since this fishery is already operating under a hard TAL system, and the TAL is being fully harvested, it is not expected that the implementation of an IFQ program would negatively impact fishing mortality rates as the IFQ program would only be dividing and assigning the current quota to individual fishermen. Implementing an IFQ program in the tilefish fishery would simply regulate how catch is distributed among fishermen, and as such, does not impact the biological, physical, or ecological environment. For the same reasons, there would be no impact to resources resulting from the use of different landings years for IFQ allocation purposes. Nevertheless, the implementation of an IFQ program could produce indirect positive impacts, as the system would allow fishermen to be more efficient in their fishing operations and harvesting practices. Providing shareholders with a percentage allocation of the annual TAL could potentially advance behavior to conserve the resource (self-policing) and increased cooperation with management, enforcement, and researcher, as fishermen receiving allocations have a personal stake in the fishery. IFQ programs have been identified as efficient tools to address overcapitalization problems in the fishing industry. Removing the race for fish has reduced the incentive for fishermen to purchase larger vessels, more equipment, or fish in unsafe conditions.

Furthermore, IFQ management allocations systems could provide biological benefits by potentially reducing discards and waste, especially for those permit categories that have been experiencing early closures. For example it is possible that when tilefish closures are first implemented, vessels that are out at sea may be forced to discard caught fish as they would not be allowed to land it due to closures. As indicated in section 4.2, the full-time tier 2 category closed early in 2005 and 2006 and the part-time category had early closures in 2002, 2004, 2005, and 2006. If overages were to substantially increase in the full-time tier 2 and/or part-time permit categories, negative impacts on the tilefish fishery could occur from increased fishing mortality rates. Other conservation benefits from IFQ system may include decrease in fuel consumption (non-renewable resource), bait, and gear loss. Alternative 1 would continue the current management system for the

commercial tilefish fishery and maintain incentives for overcapitalization and existing derby fishing conditions.

Increased fishing mortality from implementation of an IFQ program could occur if the fishing industry begins a practice known as highgrading catch.[27] It is argued that because IFQ systems allow fishermen to conduct fisheries more slowly, the selective harvesting of higher-value fish could occur. Highgrading typically takes place when the catch rates are high and there is a particular size, gender, or spawning condition. For instance, in regards to the product price, the incentive for highgrading will depend on the scale of price differentials for various types and sizes of marketed species. Nevertheless, it cannot be generalized that highgrading will always be profitable as indicated by highgrading cost analysis of the IFQ program for the halibut and sablefish fisheries (NRC 1999). It is likely that as the cost of catching replacement fish for discarded fish is relatively high, it would likely reduce the incentive for highgrading (NRC 1999, Squires et al. 1995).

As indicated in section 6.5.2 there is an evident price differential for various tilefish size categories. This price differential indicates that larger fish tend to bring higher prices (Table 32). However, tilefish fishermen tend to land all fish caught as the survival rate is very low (L. Nolan pers. comm. 2006; Kitts et al.2007 (Appendix C)). Furthermore, as indicated by commercial discard data from VTR and observer datasets, commercial discards of tilefish are almost nonexistent.

While not quantifiable at this time, it is likely that tilefish fishermen would avoid highgrading under an IFQ system due to the potential high cost of replacement fish for discarded fish. As indicated in Table 32, the smaller market categories (i.e., medium, small, and kittens) contribute the bulk of the landings. Therefore, engaging in highgrading may prove to be cost ineffective as very large quantities of larger fish would be required to replace smaller fish under highgrading. Furthermore, the amount of large fish that the market may be able to handle is not likely to support a highgrading behavior in this fishery (L. Nolan pers. comm. 2006). Since highgrading is not currently, nor anticipated to be an issue under any future tilefish IFQ system, it is an opportune time to implement a prohibition of this practice through this amendment. If such a prohibition is not implemented at the time of implementation of the IFQ program, then there will be nothing to discourage this practice in the future. For example, if market conditions where a specific fish type was more desirable (size, gender, etc.) where to develop in the future, this could in combination with fishermen been able to conduct fisheries more slowly (under an IFQ regime) increase the potential for highgrading to become a frequent practice, as fishermen would be motivated to conduct selective harvesting of higher value or more profitable fish. As such, the Council recommends that the discard of tilefish is prohibited under the IFQ management system as a proactive measure to avoid the potential unnecessary discard of tilefish in the future.

Alternative 1A (status quo or no action alternative) is not expected to result in biological impacts (positive or negative) to the tilefish stock. In addition, relative to the no action

[27] Highgrading is defined as a form of selective sorting of fish in which higher value, more marketable fish are retained and fish that could other be legally retained but are less marketable, are discarded (NRC 1999).

alternative presented in this section, the proposed IFQ allocations are expected to result in none to slight positive biological impacts to the tilefish stock.

7.1.2 Impacts on Non-target Species

As indicated in section 6.2, the sources of information that are currently available (NMFS Observer Program, VTR data) provide limited information on the overall nature and extent of non-target species discarding by the directed tilefish fishery. The commercial tilefish fishery is mainly prosecuted with bottom longline gear. This fishery harvests small quantities of other species including silver hake, spiny dogfish, white hake, yellow fin tuna, sandbar shark, and angler. Catch disposition analysis shows that the tilefish fishery is very clean as the overall pounds landed and/or discarded of other species is low for directed tilefish trips.

In general terms, IFQ programs may provide an opportunity to better fishing and handling methods and reduce bycatch of non-target species. In addition, this type of program could reduce derby style fisheries that typically affect in an adverse manner target and non-target stocks by providing fishermen more flexibility in deciding when, where, and how to fish. In all, it is not expected that the implementation of an IFQ program will substantially impact the current fishing and handling methods of the directed tilefish fleet (regardless of the landings years for IFQ allocation purposes). Nevertheless, it is possible that for the part-time fishing category which has experienced early closures in the last few years (see section 4.2) the potential reduction of derby style fishing may potentially slightly reduce the encounter with non-targeted species. Given the fact that the directed tilefish fishery is very clean and that the overall amount landed and/or discarded of other species is low for directed trips, the implementation of an IFQ system will not likely change in a substantial manner the interaction of this fishery with non-targeted species.

Alternative 1A (status quo or no action alternative) is not expected to result in positive or negative impacts on non-target species. In addition, relative to the no action alternative presented in this section, none of the proposed IFQ allocations are expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species.

7.1.3 Impacts on Habitat (Including EFH)

Appendix E described fishing gears used in the commercial and recreational tilefish fisheries. The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. In addition, a small percentage of the total directed commercial tilefish landings come from bottom otter trawl gear. Rod and reel is the typical gear used in the recreational fishery. Because tilefish are found in relatively deep waters, electric reels may be used to facilitate landing in the recreational fishery (Freeman and Turner 1977).

Table 34. List of IFQ allocation management measures considered in this amendment.

Alternative	Description
No Action	
1A	Maintain status quo management system for tilefish
Alternative Set 1B: Establish an IFQ system for full-time tier 1 category permit holders only (maintain status quo quota management system for all other permit categories)	
1B1	Establish an IFQ system for full-time tier 1 category permit holders only using average landings for years 1988-1998 to allocate the quota
1B2	Establish an IFQ system for full-time tier 1 category permit holders only using average landings for years 2001-2005 to allocate the quota
1B3	Establish an IFQ system for full-time tier 1 category permit holders only using average landings for the best five years from 1997-2005 to allocate the quota
1B4	Establish an IFQ system for full-time tier 1 category permit holders only dividing the overall tier 1 quota among all vessels in this categories
Alternative Set 1C: Establish an IFQ system for full-time tier 1 and 2 category permit holders only (maintain status quo quota management system for all other permit categories)	
1C1	Establish an IFQ system for full-time tier 1 and 2 category permit holders only using average landings for years 1988-1998 to allocate the quota
1C2	Establish an IFQ system for full-time tier 1 and 2 category permit holders only using average landings for years 2001-2005 to allocate the quota
1C2A	Establish an IFQ system for full-time tier 1 and 2 category permit holders only using average landings for years 2001-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1C3	Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only using average landings for the best five years from 1997-2005 to allocate the quota
1C3A	Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only using average landings for the best five years from 1997-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1C4	Establish an IFQ system for full-time tier 1 and tier 2 category permit holders only dividing the overall quota for each permit category equally among all vessels in each category

Table 34 (continued). List of IFQ allocation management measures considered in this amendment.

Alternative	Description
Alternative Set 1D: Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only (maintain status quo management system for the incidental permit category)	
1D1	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for years 1988-1998 to allocate the quota. In addition, for part-time vessels, when appropriate, landings for the 1984-1987 period are also considered to include vessels that originally qualified as limited access permit holders for allocation purposes when appropriate to allocate IFQ shares (see footnote 3)
1D1A	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for years 1988-1998 to identify vessels qualifying for IFQ allocation. In addition, for part-time vessels, when appropriate, landings for the 1984-1987 period are also considered to include vessels that originally qualified as limited access permit holders for allocation purposes when appropriate to allocate IFQ shares (see footnote 3). The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1D2	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for years 2001-2005 to allocate the quota
1D2A	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for years 2001-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1D3	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for the best five years from 1997-2005 to allocate the quota
1D3A	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only using average landings for the best five years from 1997-2005 to identify vessels qualifying for IFQ allocation. The overall quota under each permit category would be divided equally among all permitted vessels qualifying for IFQ allocation in each category
1D4	Establish an IFQ system for full-time tier 1, full-time tier 2, and part-time category permit holders only dividing the overall quota for each permit category equally among originally permitted vessels in each category
1E Preferred Alternative	**Establish an IFQ system for any combination of tilefish limited entry permit categories (i.e. full-time tier 1, full-time tier 2, part-time), allowing different qualifying time periods (i.e. average landings 1988-1998, average landings 2001-2005, average landings for the best five years from 1997-2005) to be used in the calculation of shares in each permit category. Allocations to qualifying vessels in each permit category can be based on the percentages associated with landings for each of these time periods or by dividing the overall quota for each permit category equally among all vessels in each category**
1F	Do not restrict initial eligibility for the IFQ ownership (considered but rejected for further analysis)

The habitat impacts of rod and reel use in the tilefish recreational fishery were discussed in the original FMP. However, recreational landings in the tilefish fishery have been minimal for the last few decades (see section 6.1). Neither the 2001 NMFS Gear Effects Workshop (NREFHSC 2002) nor Stevenson et al. (2004) discuss the impacts of recreational rod and reels on habitat. Barnette (2001) reports that there are few studies of the physical habitat impacts of rod and reel, but concludes that "impacts may include entanglement and minor degradation of benthic species from line abrasion and the use of weights (sinkers)." The only published evidence reported by Barnette related to the effects of discarded or lost fishing line on branching and digitate corals (Schleyer and Tomalin 2000). A panel of experts that did evaluate hook and line gear concluded that the physical and biological habitat impacts were "very low" (Morgan and Chuenpagdee 2003).

For all the reasons cited above, the potential impacts of fishing gear used in the recreational fishery for tilefish are not expected to be more than minimal or temporary in nature.

Longline gear has minimal detectable impacts to marine habitats (Stevenson et al. 2004). Longlines modify the structural component of the habitat, but the impacts are short-term and temporary. Additionally, deployment and retrieval of anchors result in minimal disturbance to bottom sediments; effects (e.g., increased turbidity) are minimal and ephemeral. Because of the limited length of time this gear is deployed, effects at the community and ecosystem levels are not detectable. The impacts of hook and line gear used in the recreational fishery are likely less than longlines in that they are deployed for shorter periods of time and without anchors (MAFMC 2000). In general recreational hook and line gear in the recreational fishery is not generally associated with adverse EFH impacts because the gear does not alter bottom structure.

Otter trawls (bottom) are only effective where the bottom is firm, flat, and free of obstructions. Soft mud bottom, rough or irregular bottom, or areas with obstructions, which are those areas most frequented by tilefish, are not conducive to bottom trawling. However, tilefish are often taken incidental to other directed fisheries, such as the trawl fisheries for lobster and flounder (Freeman and Turner 1977) and hake, squid, mackerel and butterfish (MAFMC 2000).

Bottom-tending otter trawls harvested approximately 1.97 million lb live weight, or 9% of the tilefish landings, during the 10-year period, 1996-2005 (Table 4). A directed otter trawl fishery for tilefish was initiated in the late 1940s, but competition and market conditions caused this fishery to cease by the late 1960s (Freeman and Turner 1977). Tilefish are also an important component of the bycatch in the groundfish fishery, particularly for offshore hake, as well as the squid, mackerel, butterfish fisheries. According to a NMFS port agent in Rhode Island (Chiarella pers. comm. 2006), most of the Rhode Island's tilefish commercial landings are a bycatch from the squid fishery in the Hudson Canyon.

It is difficult to predict precisely whether the implementation of an IFQ system will result in a change in the overall fishing effort in the tilefish fishery. In general, an IFQ programs may provide an opportunity to better fishing and handling methods, reduce bycatch of non-target species, and reduce the rate of discard mortality that would normally be present with increased fishing effort tin overcapitalized fisheries.

It is most likely that the implementation of an IFQ program would affect fishing effort differently for vessels across the various tilefish fishing categories. For example, it is not expected that fishing effort will change for tier 1 participants under an IFQ system as these vessels are already minimizing effort in accordance to the "cooperative understanding" system adopted by those fishermen (see section 4.2). More specifically, under this "cooperative understanding," tier 1 participants decide at the vessel level when to fish, how much to fish, and when to land the fish harvested in order to maximize ex-vessel price (by avoiding market gluts and spreading landings throughout the year). It is expected that this decision criteria process continue under an IFQ system as fishermen would continue to have the flexibility to freely plan their fishing activities.

On the other hand, the implementation of an IFQ program could potentially affect the fishing effort of the tier 2 and part-time fishing categories in different ways. The fishing effort for the tier 2 and part-time categories could potentially stay the same but be spread throughout the year as fishermen may want to land the same amount of fish per fishing trip but bring it to the market at different times of the year to avoid market gluts and maximize ex-vessel revenue. Conversely, it is also possible that tier 2 and part-time vessels that are currently landing large quantities of tilefish per trip in order to maximize the amount of fish taken as fast as they can (accelerated harvest rush) may not only want to spread landings throughout the year but may also want to bring less fish to the market on a per trip basis (in order to avoid market gluts and maximize ex-vessel revenue) as the incentive to land as much fish as possible per trips is eliminated. In this case it is possible that fishing effort would be reduced. It is also possible that fishing effort may decrease if more efficient vessels purchase transferable IFQs (ITQs) from less efficient vessels (thus, decreasing effort). In addition, the use of more recent years for IFQ allocation purposes (i.e. average landings for years 2001 through 2005) would also eliminate latent permits in the fishery. Nevertheless, it is not anticipated that fishing effort will substantially change under the scenarios described above.

Alternative 1A (status quo or no action alternative) is not expected to result in changes to the current fishing effort. The other measures proposed in this action will either change or maintain the same fishing level as compared to the status quo. However, it is expected that if changes in fishing effort were to occur these will be very small. Therefore, there are no anticipated increases in gear interactions with EFH. In addition, the dominant gear used to prosecute the tilefish fishery is longline gear which has minimal habitat impacts associated with it, as described above and in section 6.3 and Appendix E. In either case, no adverse impacts to the marine habitats or EFH are expected for the proposed IFQ measures relative to the no action alternative (1A).

7.1.4 Impacts on Endangered and Protected Species

Section 6.1 and Appendix E described fishing gears used in the commercial and recreational tilefish fishery. The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. In addition, a small percentage of the total tilefish landings come from bottom otter trawl gear. Rod and reel is the typical gear used in the recreational fishery. Recreational gears are not categorized in the final List of Fisheries for 2008 for the taking of marine mammals by commercial fishing operations under section 118 of the Marine Mammal Protection Act of 1972. Therefore, minimal interaction is expected between rod and reel and handlines used in the tilefish recreational fishery and endangered and protected species. In addition, the 2008 List of Fisheries, listed bottom longline/hook-and-line as Category III fishery. There have been no interactions documented between this fishery and species/stocks of marine mammals and, thus, the fishery is currently classified as a Category III fishery.

Impacts on endangered and protected species would be related to encounter rates as they change with fishing effort. Changes in the overall commercial fishing effort as a result of proposed IFQ allocations are described in section 7.1.3 above. As indicated in the previous section, it is not possible to precisely predict the potential changes in fishing effort given the proposed IFQ allocation systems. It is expected that if changes in fishing effort were to occur, it would stay at the current level but spread throughout the year or may potentially decrease. The tilefish fishery takes place year-round and since there are no recorded interactions between this fishery and species/stocks of marine mammals, increases in gear interactions with endangered or protected species are not anticipated as the result of potential effort spreading throughout the year. None of the proposed IFQ measures are expected to result in positive or negative impacts to endangered or protected species relative to the no action alternative (1A). However, due to the conservation efforts of IFQ systems (see section 7.1.1), gear loss may be reduce as the system provides fishermen more flexibility in deciding when, where, and how to fish. Reduction in gear loss could potentially have a slight indirect positive impact to endangered and protected species as it could reduce entanglements, however, this is merely conjecture. Alternative 1A is not expected to result in changes to the current fishing effort and impacts on endangered and protected species are not expected.

7.1.5 Social and Economic Impacts

A detailed description of the ports and communities that are dependent on tilefish is presented in section 6.5.1. This description includes recent port landings, dependence of individual communities on tilefish, dependence of individual communities on fishing, information on processors and dealers, and community profiles.

Maintaining the status quo management system (alternative 1A) for tilefish would continue the overall incentives for overcapitalization and derby fishing conditions. However, these conditions are likely to continue to exist for tier 2 and part-time fishing categories in specific as the existing "cooperative understanding" among participants in the tier 1 permit category has reduced if not eliminated the incentive for tier 1

participants to purchase larger vessels and more equipment in order to compete in the race for fish. More specifically, the existing "cooperative understanding" among tier 1 participants allows them to decide at the vessel level when to fish, how much to fish, and when to land the fish harvested in order to maximize ex-vessel price (by avoiding market gluts and spreading landings throughout the year; see section 4.2). Therefore, given the current tier 1 participation level in management and harvesting decisions, maintaining the status quo alternative would not likely impact the existing fishing conditions or create incentives for overcapitalization and derby fishing conditions in that component of the fishery. Nevertheless, the implementation of an IFQ program that includes tier 1 participants would further stabilize the fishery and formalize their cooperative agreement. Furthermore, if the "cooperative understanding" among tier 1 vessels that is currently in effect were to cease, that component of the fishery could experience incentives for overcapitalization and derby fishing conditions.

If the management regime under the current system were to continue, tier 2 and part-time fishing vessels would continue to employ higher than necessary levels of capital investment and operating costs, and shorter fishing seasons. In addition, these vessels would also continue to face lower ex-vessel value due to market gluts. Furthermore, the current system would not motivate fishermen to limit fishing practices during unsafe conditions.

There are several IFQ alternatives considered in this amendment. These vary by the degree of inclusion and period of time used for allocation purposes. Some alternatives would implement an IFQ system for tier 1 participants only (all B alternatives), while other alternatives would only included tier 1 and tier 2 participants (all C alternatives), and other alternatives would include all full-time and part-time participants (all D alternatives). The proposed IFQ programs that include all participants (all D alternatives) would entirely cease to rely on a limited entry system as the main system to manage the fishery while the other alternatives (all B and C alternatives) would allow for a limited access program along with an IFQ program to be used for management purposes. The no action or status quo alternative (1A) would continue to rely on the existing limited access program to manage the fishery. Alternative 1E (preferred alternative) would allow for the maximum flexibility to develop an IFQ program as it allows for an IFQ system to be established for any combination of limited entry permit categories (i.e. full-time tier 1, full-time tier 2, part-time). The IFQ allocation to each individual permit class group (i.e. full-time tier 1, full-time tier 2, part-time) under alternative 1E would be based historical landings of any of the three proposed sets of time periods (i.e. average landings 1988-1998, average landings 2001-2005, average landings for the best five years from 1997-2005). Furthermore, under alternative 1E, allocations to qualifying vessels in each permit category can be based on the percentages associated with landings for each of these time periods or by dividing the overall quota for each permit category equally among all vessels in each category. At the April 2008 meeting, the Council chose to use average landings for the 2001-2005 period to allocate IFQ shares to full-time tier 1 and 2 vessels. For part-time vessels, an equal allocation for vessels that landed tilefish during the 2001-2005 period was used to allocate IFQ shares to that permit category.

The proposed IFQ system has the potential to reduced fishing capacity as it is expected that this system would allow fishermen to improve overall fishing methods by providing fishermen more flexibility in deciding when, where, and how to fish. The proposed IFQ system of quota share allocations is an economic solution to the race for fish. The reduction in fishing capacity could potentially be the highest under the IFQ systems that include the largest amount of categories of permit holders (e.g., alternative sets D and E). Furthermore, alternatives that would allocate the IFQ employing more current fishing participation (e.g., sub-alternatives 1C2, 1C3, 1D2, 1D3, and 1E) would also further reduce excess fishing capacity and latent fishing effort. However, it is important to mention that the degree of capacity reduction under the various IFQ measures presented in this document would also depend on various factors such as: a) adopted transferability rules (alternative 7.2); b) employment opportunities in other fisheries or economic sectors; c) the initial amount of allocated quota; d) capital availability and flexibility; e) credit availability; and f) skipper and crew experience. For example, marginal operations, with a limited quota shares allocation and high fishing opportunities and earnings in other fisheries (or sectors of the economy) may quickly exit the fishery, while operations with a larger quota shares, more experienced skipper and fishing crew, and/or significant less fishing opportunities and earnings in other fisheries (or sectors of the economy) may take longer or not exit the fishery at all. Marginal operations are expected to continue to fish for tilefish under an IFQ system as long as they can cover variable costs.

By improving catch efficiency under an IFQ share system, operating costs could be lowered as fishermen have more flexibility in their input choices and trip planning. This in turn is expected to promote safer at-sea operating conditions.

Tables 35 through 37 show the number of fishing vessels and the amount of IFQ allocation (**as a percentage of group quota(s)**) under the various evaluated IFQ management alternatives. Table 38 shows allocation percentages **as the percentage of the total quota** based on various landing histories and equal shares. Table 39 shows vessel landings based on various landings histories used to calculate IFQ allocation percentages. Table 40 shows the sizes of the individual allocations to vessel qualifying for IFQs based on various alternatives. These values were generated by multiplying the allocation percentages of the total quota based on various allocation schemes (Table 38) by an overall 1,995,000 lb TAL (or adjusted TAL of 1,895,250 lb). Table 41 shows the potential revenues that could be generated by qualifying vessels under various IFQ allocations. These values were generated by multiplying the values under Table 40 by the 2005 average coastwide price for tilefish ($2.48/lb).

Table 35 depicts the number of fishing vessels and associated quota share allocations (quota percentages) that would result from IFQ allocations based on historical landings for various time periods and equal share allocation for alternative set 1B. As previously stated, alternative set 1B would establish an IFQ system for full-time tier 1 category permit holders only (maintain status quo management system for all other permit categories). Under all the evaluated sub-alternatives in 1B, four tier 1 vessels would qualify for IFQ shares regardless of the time period for historical landings used for allocation purposes. Allocations to tier 1 vessel would range from 14.3 percent to 32.2

percent of the total tier 1 quota under sub-alternative 1B1; from 16.8 percent to 33.3 percent under sub-alternative 1B2; and from 15.5 percent to 30.0 percent under sub-alternative 1B3. Under the equal allocation sub-alternative (1B4) each vessel would received 25 percent of the total tier 1 group share allocation. The number of full-time tier 1 vessels that could qualify for IFQ allocation under any of the evaluated IFQ alternatives would be identical to the number of vessels that could participate in the fishery under the current limited access system (status quo alternative 1).

Table 35. IFQ system alternatives for full-time tier 1 permit holders only[a]. Allocation percentages are the <u>percentage of their group quota</u> based on various landing histories and equal shares.

Alternative	1B1 Average Landings, 1988-1998	1B2 Average Landings, 2001-2005	1B3 Average Landings, Best Five Years, 1997-2005	1B4 Equal Allocation
Qualifying Tier 1 Vessels				
1	14.3%	16.8%	15.5%	25%
2	23.2%	31.1%	30.0%	25%
3	32.2%	18.9%	24.5%	25%
4	30.3%	33.3%	30.0%	25%

[a] Maintain status quo quota management system for all other permit categories.
Source: Barbara Rountree (NMFS, NEFSC).

Table 36 depicts the number of fishing vessels and associated quota share allocations (quota percentages) that would result from IFQ allocations based on historical landings for various time periods and equal share allocation for alternative set 1C. As previously stated, alternative set 1C would establish an IFQ system for full-time tier 1 and tier 2 category permit holders only (maintain status quo management system for all other permit categories). Alternative set 1C includes the allocation for tier 1 vessels discussed under alternative set 1B plus the allocations for tier 2 vessels. Therefore, the tier 1 allocations discussed under alternative set 1B above also apply here.

The number of tier 2 vessels that would qualify for IFQ share allocation under alternative set 1C depends on the time period used to derive eligibility (the time period for historical landings used for allocation purposes). For example, under sub-alternative 1C1, five vessels qualify for IFQ shares raging from 5.1 percent to 33.8 percent of the total tier 2 quota. However, under sub-alternatives 1C3 four vessels qualify for IFQ shares ranging from 2.0 percent to 75.0 percent of the total tier 2 quota. The number of vessels qualifying for IFQ shares under alternative 1C2 or 1C2A is not disclosed due to confidentiality issues. Lastly, five vessels would qualify for IFQ shares under equal allocation sub-alternative 1C4 and each of these vessels would receive 20 percent of the overall tier 2 quota. The decrease in the number of vessels that qualify for IFQ shares under sub-alternative 1C3 compared to sub-alternatives 1C1 is related to the fact that some tier 2 vessels have not been fishing for tilefish in recent years even though they

hold a full-time tier 2 tilefish permit. In addition, it is important to mention that there has been a significant shift in the quantity of tilefish that some tier 2 vessels have landed through time. For example, on average, the tier 2 vessel assigned "number two" in Table 36 landed 23.3 percent of the total tilefish landed by tier 2 vessels for the time period under sub-alternative 1C1, but increased to 75.0 percent of the total landings made by tier 2 vessels under the time period associated with sub-alternatives 1C3. Conversely, the landings for tier 2 vessel assigned "number one" in the same table decrease from 25.4 percent under the time period associated with sub-alternative 1C1 to 1.9 percent under the time period associated with sub-alternative 1C3. The equal allocation sub-alternatives range from 20 percent under 1C4 to 25 percent under 1C3A. The number of full-time tier 2 vessels that could qualify for IFQ allocation under alternatives 1C1 and 1C2, five vessels, is identical to the number of vessels that could participate in the fishery under the current limited access system (status quo alternative 1). Under alternatives 1C3, 1C3A, the number of vessels that could qualify for IFQ allocations decreases to four.

Table 36. IFQ system alternatives for full-time tier 1 and 2 permit holders only[a]. Allocation percentages are the percentage of their group quota based on various landing histories and equal shares.

Alternative	1C1 Average Landings, 1988-1998	1C2 Average Landings, 2001-2005	1C2A Equal % Based on 1C2	1C3 Average Landings, Best Five Years, 1997-2005	1C3A Equal % Based on 1C3	1C4 Equal Allocation
Qualifying Tier 1 vessels						
1	14.3%	16.8%	[b]	15.5%	[b]	25%
2	23.2%	31.1%	[b]	30.0%	[b]	25%
3	32.2%	18.9%	[b]	24.5%	[b]	25%
4	30.3%	33.3%	[b]	30.0%	[b]	25%
Qualifying Tier 2 vessels						
1	25.4%	[c]	[c]	1.9%	25%	20%
2	23.3%	[c]	[c]	75.0%	25%	20%
3	5.1%	[c]	[c]	0	0	20%
4	12.4%	[c]	[c]	11.4%	25%	20%
5	33.8%	[c]	[c]	11.6%	25%	20%

[a] Maintain status quo quota management system for all other permit categories.
[b] These allocation percentages would be the same as 1C4.
[c] Values not included for confidentiality issues.
Source: Barbara Rountree (NMFS, NEFSC).

Table 37 depicts the number of fishing vessels and associated quota share allocations (quota percentages) that would result from IFQ allocations based on historical landings for various time periods and equal share allocation for alternative set 1D. As previously stated, alternative set 1D would establish an IFQ system for full-time tier 1 and tier 2 and part-time category permit holders only (maintain status quo management system for the incidental permit category). Alternative set 1D includes the allocation for tier 1 and tier 2

vessels discussed under alternative set 1C plus the allocations for part-time vessels. Therefore, the tier 1 and tier 2 allocations discussed under alternative set 1C above also apply here.

The number of part-time vessels that would qualify for IFQ share allocation under alternative set 1D depends on the time period used to derive eligibility (the time period for historical landings used for allocation purposes). For example, under sub-alternative 1D2, seven vessels qualify for IFQ shares raging from 3.5 percent to 40.2 percent of the total part-time quota; 12 vessels under sub-alternative 1D3 raging from 0.9 percent to 29.0 percent; and 16 vessels under sub-alternative1D1 ranging from 1.4 percent to 26.8 percent. Lastly, 22 vessels would qualify for IFQ shares under equal allocation sub-alternative 1D4 and each of these vessels would receive 4.5 percent of the overall tier 2 quota. In addition, it is important to mention that there has been a significant shift in the quantity of tilefish that some part-time vessels have landed through time as with tier 2 vessels. The shifts in quantity landed and thus IFQ allocation for tier 2 and part-time vessels reflect changes in the participation level of tilefish vessels (tilefish landings) during the various time periods evaluated for allocation purposes. Since the number of qualifying part-time vessels in alternative set 1D change across sub-alternatives, the equal allocation sub-alternatives would range from 4.5 percent under 1D4 to 14.3 percent under alternative 1D2A. The equal share allocation sub-alternatives would allocate an overall smaller IFQ share allocation for the sub-alternative qualifying the largest number of vessels and a larger IFQ share allocation for the sub-alternative qualifying the smallest number of vessels. The maximum number of part-time vessels that are currently allowed to participate in the tilefish fishery under the existing limited access system (status quo alternative 1A) is 22 (number of part-time vessels with a valid tilefish limited access permit in 2005).

As indicted in section 5.1.B in order to determine the universe of qualified vessels for IFQ eligibility under the alternatives discussed in this document, a tilefish limited access vessel owner needs to have been issued a valid tilefish limited access permit for the 2005 permit year or a valid CPH. It was assumed that a vessel owner that has continually renewed their limited access tilefish vessel permit and/or been issued a valid CPH has clearly shown that he/she intends to continue to fish for tilefish, and/or re-enter the tilefish fishery at a future time. In addition, while the Council provided neither a minimum allocation nor minimum landings requirements for initial eligibility, it required a 0.5% minimum IFQ share allocation/share distribution (i.e., each tilefish limited access vessels would require a minimum 0.5% group share allocation/share distribution to qualify for IFQ). This minimum share allocation/distribution is mainly intended to ensure the lowest allocation would be at least a practical minimum amount in which to participate in the fishery. It is important to note that the number of entities qualifying for IFQ share if these assumptions were relaxed would be higher than described above for the part-time fishing category. In fact, if the eligibility criterion was relaxed, the number of qualifying part-time vessels for IFQ shares would increase from 16 to 29 under sub-alternatives 1D1 and 1D1A; from seven to 11 under sub-alternatives 1D2 and 1D2A; from 12 to 18 under sub-alternatives 1D3 and 1D3A; and from 22 to 43 vessels under sub-alternative 1D4. However, as the number of vessels increase as the qualifying criteria

is relaxed (valid 2005 permit and/or CPH; minimum 0.5% group share allocation/share distribution to qualify for IFQ) the percentage of IFQ share allocation for part-time vessels decreases. For example, the per vessel quota share under sub-alternative 1D4 would change from 4.5 percent (100% of the part-time quota allocation divided by 22 vessels) to 2.3 percent (100% of the part-time quota allocation divided by 43 vessels). For the full-time tier 1 and tier 2 categories, the relaxation of this assumption will not have any impacts. That is, no more than four and five vessels would qualify under any of the alternatives allocating IFQ shares to full-time tier 1 and tier 2 vessels, respectively. In addition, the IFQ share allocations (percentages) for full-time tier 1 and tier 2 vessels would remain the same. This is due to the fact that all the full-time tier 1 and tier 2 vessels that originally qualified for the tilefish limited entry program under the FMP have maintained active vessel permit and/or valid CPH.

As indicated above, the preferred alternative for IFQ allocation purposes in 1E. Under this alternative, landings data for 2001-2005 period would be used for the initial apportionment of IFQ shares. Average landings for the 2001-2005 period would be used to allocate IFQ shares to full-time tier 1 and 2 vessels (Table 39 shows vessel landings based on various landings histories). For part-time vessels, an equal allocation for vessels that landed tilefish during the 2001-2005 period was used to allocate IFQ shares to that permit category. As indicated before, alternative 1E would allow for the maximum flexibility to develop an IFQ program as it allows for an IFQ system to be established for any combination of limited entry permit categories, time periods, and /or equal division among all qualifying vessels.

In order to assess potential changes in fishing opportunities associate with the proposed IFQ share allocations, potential changes in fishing opportunities associated with the proposed IFQ allocations under the preferred IFQ would be compared (when possible) to the aggregate fishing opportunities that were available in 2005 (base year).

Tables 37 and 38 can be used to assess IFQ share allocations to qualifying vessels under alternative 1E (group quota and total, respectively). For full-time tier 1 and 2 vessels, the percentage of the total group quota and total quota under the preferred alternative is the same as values under alternative 1D2. Since full-time tier 1 vessels have recently worked under a cooperative understanding that allows those vessels to fish at levels comparable to recent historical landings, it is expected that the initial apportionment of the IFQ shares to those vessels would continue to allow them to fish at comparable levels to 2005 (base year). Furthermore, it is also expected that these vessels would continue to work together to spread landings throughout the year to maximize their performance under the proposed IFQ system. As such, tilefish landings levels are not expected to drastically change for these vessels under an IFQ system when compared to recent historical landings under the current management system. Therefore, in general terms, it would be expected that ex-vessel revenues would also be at levels similar to those generated in 2005 (assuming 2005 tilefish prices generated by vessels in that fishing category).

The number of full-time tier 2 vessels qualifying for IFQ shares and the percentage of IFQ share allocations are not disclosed due to confidentiality issues. However, for the

qualifying vessels under this permit category, the proportion of tilefish landings that these vessels would be able to harvest under the proposed IFQ allocation is near identical to the proportion of tilefish landings by these qualifying vessels during the base year (2005). As such, the overall tilefish contribution to the ex-vessel revenues derived by those vessels is not expected to substantially change under the proposed IFQ system when compared to the base year (2005).

For part-time vessels, the percentage of the total group quota and total quota are the same as the values under alternative 1D2A (Tables 37 and 38). As indicated above, the IFQ allocation to part-time vessels under alternative 1E is based on an equal IFQ allocation to vessels that landed tilefish during the 2001-2005 period. The part-time IFQ allocation would be the same as the values under 1D2A in Tables 37 and 38. More specifically, each qualifying part-time vessel would be allocated 14.3% of the group quota or 2.7% of the total quota (Tables 37 and 38, respectively). Assuming a TAL of 1.995 million lb, each qualifying IFQ vessel in the part-time category would receive an annual IFQ allocation of 51,425 pounds of tilefish. When this value is compared to the landings for qualifying vessels during the base year (2005), we find that six vessels could have higher fishing opportunities (and one vessel less) under the proposed IFQ allocation when compared to 2005. When these potential changes in fishing opportunities are used to assess potential changes in revenues (not just tilefish but of all species combined), we find that one vessel would have increased ex-vessel revenue of less than 1%; 3 vessels of 1 to 5%; 1 vessel of 6-10% , and 1 vessel of 32%. Furthermore, it is estimated that 1 vessel would have revenue reductions of approximately 19%. Equal allocation among qualifying vessels would benefit fishermen with smaller than average landings history (i.e., 2001-2005), at the expense of fishermen with larger than average landings histories. It is important to stress that these calculations were made using dealer data (weighout) because this is the only data that contains both landings data and ex-vessel prices (used as a proxy for revenues). However, staff detected that tilefish landings are underreported in the dealer data when compared to the IVR data by approximately 40% for 2005. As such, the changes in ex-vessel revenues presented above are likely to correspond to the upper/lower limits.

In addition, it is important to mention that the number of vessels qualifying for initial apportionment of IFQ shares when the 2001-2005 period is chosen eliminates several vessels from participating in the IFQ system. For example, several vessels that landed tilefish during the 1988-1998 period (Column 1D1 in Tables 37 and 38) do not qualify for IFQ share allocations under the preferred alternative. This is due to the fact, that these vessels have not participated in the tilefish fishery or had very few landings (a few hundred pounds) during the 2001-2005 period (Tables 37, 38, and 39). The associated revenue changes for these vessels compared to the base line (2005 participation) are nil as these vessels did not land tilefish in 2005.

The overall potential tilefish allocations (in pounds) and ex-vessel revenues that qualifying vessels would obtain under the various IFQ alternatives analyzed are presented in Tables 40 and 41, respectively. The ex-vessel values in this table assume a 2005

coastwide tilefish price of $2.48/lb and an overall TAL of 1.995 million lb (adjusted TAL of 1,895,250 lb; adjusted for incidental catch).

While fishermen receiving fishing privileges under an IFQ system are benefited, those not receiving fishing privileges under the initial allocation process are not benefited. Therefore, the IFQ allocation alternatives that employ most recent years for allocation purposes i.e., average landings for years 2001-2005, best five years from 1997 through 2005, would contain the fewer number of IFQ participants when compared to the IFQ allocation alternatives that consider using average landings for years 1988-1998 to allocate the IFQ quota.

The fairness of the initial allocation along with transferability and accumulation of shares are some of the most contentious issues that need to be considered when developing IFQ programs (NRC 1999). When IFQ programs are considered, there is concern by many people that the program can generate windfall profits and increase profitability for a few individuals. In addition, apprehension also exists in the minds of many people due to the potential for quota consolidation in the hand of a few individuals (and potential reduction in employment opportunity for vessel crew members), the potential costs of new fishermen to enter the fishery, and the disruption of fishing communities and elimination of fishing traditions. Measures regarding transferability rules (alternative 7.2) and share accumulation (alternative 7.4) address some of these concerns by evaluating the consolidation of quotas and transfer of fishing privileges (quota shares) to other people; these alternatives, in addition the alternatives evaluating other elements of the IFQ program (alternatives 7.3 and 7.5 to 7.8) are intended to develop an IFQ program that addresses these issues while achieving specific goals and objectives for the tilefish fishery. These are evaluated in order to assist the Council design an IFQ system that balances socioeconomic and biological tradeoffs and improves the ability to achieve the goals and objectives of the FMP.

In general terms, it is expected that the IFQ alternative that includes the largest amount of categories of permit holders (e.g., alternative set 1D) would achieve the greatest economic objectives (reduce overcapitalization and derby fishery conditions) followed by alternative set 1C and alternative set 1B when compared to the current tilefish management system (status quo alternative 1A). Alternative 1E would also achieve the greatest economic benefits if it includes an IFQ system for all categories of permit holders.

It is not expected that the initial IFQ share allocations under preferred alternative 1E will change as a consequence of caps on quota share accumulation. See alternative 7.4 for further discussion.

In addition to the general aspects regarding implementation of IFQ programs discussed above, other features associated with the implementing of IFQ systems such as: cost of managing program, enforcing and monitoring costs, and potential employment losses. The potential impacts of these features are discussed in subsequent sections.

Consolidation of IFQ shares would result in fewer vessels and reduced crew requirements Employment losses due to the potential consolidation of a fishery under an IFQ program could have detrimental impacts on communities in which the fishery is embedded, particularly for communities in which fishing is an important part of the economy and social structure of the area. Furthermore, employment losses could result in trickle down impacts on small fishing communities where alternative employment opportunities for displaced fishermen are low. As discussed in section 6.5.2, given the very small tilefish contribution to the total value and poundage of all finfish and shellfish, it can be assumed that only a small amount of the region's fishing vessel employment, wages, and sales are dependent on tilefish. In fact, the bulk of the tilefish landed for the last five years (2001-2005) have been caught by approximately six vessels. There is very little tilefish shore processing. Most tilefish are sold fresh. The bulk of the catch is gutted at sea and iced during long trips. Incidental catches are not gutted but this represents a small proportion of the total catch (5%). Furthermore, management measures regarding share accumulation (alternative 7.4) address some of these concerns by evaluating the consolidation of quotas.

According to the NRC (1999), with the introduction of IFQ systems, monitoring and enforcement costs have increase in some cases, while decreasing in others. Costs associated with in-season management are typically referred to as monitoring and enforcement costs. These administrative costs include costs associated with how much and when fish is landed, quota share issuing and transferability, etc. Enforcement costs are costs associated with the compliance of fishing regulations associated with the management program. The current tilefish management system already has in place a system of monitoring (i.e., limited access system, reporting via VTR and dealer data and IVR system) and enforcement programs which costs are not expected to significantly increase with the implementation of an IFQ system. In general terms, the introduction of an IFQ system can create incentives for quota busting, highgrading, and poaching[28]. In situations where these incentives for quota busting, highgrading, and poaching are high, monitoring and enforcement costs can increase. Since highgrading is not currently, nor anticipated to be an issue under any future tilefish IFQ system, it is an opportune time to implement a prohibition of this practice through this amendment. If such a prohibition is not implemented at the time of implementation of the IFQ program, then there will be nothing to discourage this practice in the future. For example, if market conditions where a specific fish type was more desirable (size, gender, etc.) where to develop in the future, this could in combination with fishermen been able to conduct fisheries more slowly (under an IFQ regime) increase the potential for highgrading to become a frequent practice, as fishermen would be motivated to conduct selective harvesting of higher value or more profitable fish. As such, the Council recommends that the discard of tilefish is prohibited under the IFQ management system as a proactive measure to avoid the potential unnecessary discard of tilefish in the future. There is no indication that any of these undesirable incentives would occur in the tilefish fishery. In addition, there are no bycatch concerns in the tilefish fishery and thus, burden associated with enforcement actions to reduce bycatch are not anticipated. By evaluating a wide array of IFQ measures

[28] Catching fish for which no quota is held. Illegal harvesting of fish (NRC, 1999).

Table 37. IFQ system options for full-time tier 1, full-time tier 2, and part-time permit holders[a]. Allocation percentages are the percentage of their group quota based on various landing histories and equal shares.

Alternative	1D1 Average Landings, 1988-1998	1D1A Equal % Based on 1D1	1D2 Average Landings, 2001-2005	1D2A Equal % Based on 1D2	1D3 Average Landings, Best Five Years, 1997-2005	1D3A Equal % Based on 1D3	1D4 Equal Allocation
Qualifying Tier 1 Vessels							
1	14.3%	[b]	16.8%	[b]	15.5%	[b]	25%
2	23.2%	[b]	31.1%	[b]	30.0%	[b]	25%
3	32.2%	[b]	18.9%	[b]	24.5%	[b]	25%
4	30.3%	[b]	33.3%	[b]	30.0%	[b]	25%
Qualifying Tier 2 Vessels							
1	25.4%	[b]	[C]	[C]	1.9%	25%	20%
2	23.3%	[b]	[C]	[C]	75.0%	25%	20%
3	5.1%	[b]	[C]	[C]	0.0%	0.0%	20%
4	12.4%	[b]	[C]	[C]	11.4%	25%	20%
5	33.8%	[b]	[C]	[C]	11.6%	25%	20%
Qualifying Part-Time Vessels							
1	12.2%	6.3%	0.0%	0.0%	0.0%	0.0%	4.5%
2	8.8%	6.3%	7.4%	14.3%	8.3%	8.3%	4.5%
3	2.7%	6.3%	0.0%	0.0%	0.0%	0.0%	4.5%
4	7.5%	6.3%	0.0%	0.0%	0.0%	0.0%	4.5%
5	26.8%	6.3%	0.0%	0.0%	4.0%	8.3%	4.5%
6	1.8%	6.3%	0.0%	0.0%	0.0%	0.0%	4.5%
7	7.9%	6.3%	4.7%	14.3%	3.4%	8.3%	4.5%
8	5.8%	6.3%	0.0%	0.0%	10.9%	8.3%	4.5%
9	0.0%	0.0%	9.5%	14.3%	8.6%	8.3%	4.5%
10	0.0%	0.0%	40.2%	14.3%	29.0%	8.3%	4.5%
11	6.7%	6.3%	0.0%	0.0%	3.8%	8.3%	4.5%
12	0.0%	0.0%	21.5%	14.3%	15.6%	8.3%	4.5%
13	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%
14	3.7%	6.3%	0.0%	0.0%	0.0%	0.0%	4.5%
15	0.0%	0.0%	3.5%	14.3%	2.6%	8.3%	4.5%
16	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%
17	1.7%	6.3%	0.0%	0.0%	0.0%	0.0%	4.5%
18	4.6%	6.3%	0.0%	0.0%	0.9%	8.3%	4.5%
19	2.0%	6.3%	0.0%	0.0%	0.0%	0.0%	4.5%
20	1.4%	6.3%	13.2%	14.3%	11.3%	8.3%	4.5%
21	2.4%	6.3%	0.0%	0.0%	0.0%	0.0%	4.5%
22	4.3%	6.3%	0.0%	0.0%	1.5%	8.3%	4.5%

[a] Maintain status quo quota management system for the incidental permit category.
[b] These allocation percentages would be the same as 1D4.
[c] Values not included for confidentiality issues.
Source: Barbara Rountree (NMFS, NEFSC).

Table 38. IFQ system options for full-time tier 1, full-time tier 2, and part-time permit holders[a]. Allocation percentages are <u>the percentage of the total quota</u> based on various landing histories and equal shares.

Alternative	1D1 Average Landings, 1988-1998	1D1A Equal % Based on 1D1	1D2 Average Landings, 2001-2005	1D2A Equal % Based on 1D2	1D3 Average Landings, Best Five Years, 1997-2005	1D3A Equal % Based on 1D3	1D4 Equal Allocation
Qualifying Tier 1 Vessels							
1	9.4%	[b]	11.1%	[b]	10.2%	[b]	16.5%
2	15.3%	[b]	20.5%	[b]	19.8%	[b]	16.5%
3	21.2%	[b]	12.4%	[b]	16.2%	[b]	16.5%
4	20.0%	[b]	22.0%	[b]	19.8%	[b]	16.5%
Qualifying Tier 2 Vessels							
1	3.8%	[b]	[C]	[C]	0.3%	3.75%	3.0%
2	3.5%	[b]	[C]	[C]	11.3%	3.75%	3.0%
3	0.8%	[b]	[C]	[C]	0.0%	0.0%	3.0%
4	1.9%	[b]	[C]	[C]	1.7%	3.75%	3.0%
5	5.1%	[b]	[C]	[C]	1.7%	3.75%	3.0%
Qualifying Part-Time Vessels							
1	2.3%	1.2%	0.0%	0.0%	0.0%	0.0%	0.86%
2	1.7%	1.2%	1.4%	2.7%	1.6%	1.6%	0.86%
3	0.5%	1.2%	0.0%	0.0%	0.0%	0.0%	0.86%
4	1.4%	1.2%	0.0%	0.0%	0.0%	0.0%	0.86%
5	5.1%	1.2%	0.0%	0.0%	0.8%	1.6%	0.86%
6	0.3%	1.2%	0.0%	0.0%	0.0%	0.0%	0.86%
7	1.5%	1.2%	0.9%	2.7%	0.7%	1.6%	0.86%
8	1.1%	1.2%	0.0%	0.0%	2.1%	1.6%	0.86%
9	0.0%	0.0%	1.8%	2.7%	1.6%	1.6%	0.86%
10	0.0%	0.0%	7.6%	2.7%	5.5%	1.6%	0.86%
11	1.3%	1.2%	0.0%	0.0%	0.7%	1.6%	0.86%
12	0.0%	0.0%	4.1%	2.7%	3.0%	1.6%	0.86%
13	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.86%
14	0.7%	1.2%	0.0%	0.0%	0.0%	0.0%	0.86%
15	0.0%	0.0%	0.7%	2.7%	0.5%	1.6%	0.86%
16	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.86%
17	0.3%	1.2%	0.0%	0.0%	0.0%	0.0%	0.86%
18	0.9%	1.2%	0.0%	0.0%	0.2%	1.6%	0.86%
19	0.4%	1.2%	0.0%	0.0%	0.0%	0.0%	0.86%
20	0.3%	1.2%	2.5%	2.7%	2.1%	1.6%	0.86%
21	0.4%	1.2%	0.0%	0.0%	0.0%	0.0%	0.86%
22	0.8%	1.2%	0.0%	0.0%	0.3%	1.6%	0.86%

[a] Maintain status quo quota management system for the incidental permit category.
[b] These allocation percentages would be the same as 1D4.
[c] Values not included for confidentiality issues. Note: The values in this table were estimated using the following procedure. Percent landings for specific vessels within each tier group (Table 37) were multiplied by the respective tier group percent allocation of the overall TAL (66% or 0.66 for full-time tier 1 category; 15% or 0.15 for full-time tier 2 category; and 19% or 0.19 for part-time category).
Source: Barbara Rountree (NMFS, NEFSC).

Table 39. Landings (landed weight, in pounds), based on various landing histories, were used to calculate allocation percentages for full-time tier 1, full-time tier 2, and part-time permit holders.

	Average Landings, 1988-1998	Average Landings, 2001-2005	Average Landings, Best Five Years, 1997-2005
Qualifying Tier 1 Vessels			
1	190,195	207,536	267,949
2	308,129	385,170	518,679
3	427,475	233,528	423,652
4	403,354	412,539	518,205
Qualifying Tier2 Vessels			
1	72,815	[c]	7,431
2	66,665	[c]	288,955
3	14,500	[c]	0
4	35,344	[c]	44,076
5	96,829	[c]	44,633
Qualifying Part-time Vessels			
1	15,615	0	470
2	11,353	15,850	19,603
3	3,510	0	7
4	9,619	54	43
5	34,393	595	9,460
6	2,270	0	0
7	10,094	10,129	8,103
8	7,479	0	25,602
9	10	20,339	20,339
10	0	86,314	68,479
11	8,569	0	9,022
12	0	46,119	36,894
13	0	0	0
14	4,800	0	0
15	17	7,609	6,087
16	5	0	0
17	1,887	0	0
18	5,951	84	2,074
19	2,587	0	1
20	1,761	28,383	26,580
21	3,025	0	0
22	5,498	342	3,643

[c] Values not included for confidentiality issues.
Source: Barbara Rountree (NMFS, NEFSC).

Table 40. Allocations (lb) of tilefish under various IFQ system options for full-time tier 1, full-time tier 2, and part-time permit holders[a].

Alternative	1D1 Average Landings, 1988-1998	1D1A Equal % Based on 1D1	1D2 Average Landings, 2001-2005	1D2A Equal % Based on 1D2	1D3 Average Landings, Best Five Years, 1997-2005	1D3A Equal % Based on 1D3	1D4 Equal Allocation
Qualifying Tier 1 Vessels							
1	178,154	[b]	210,373	[b]	193,316	[b]	312,716
2	289973	[b]	388,526	[b]	375,260	[b]	312,716
3	401793	[b]	235,011	[b]	307,031	[b]	312,716
4	379050	[b]	416,955	[b]	375,260	[b]	312,716
Qualifying Tier 2 Vessels							
1	72,020	[b]	[C]	[C]	5,686	71,072	56,858
2	66,334	[b]	[C]	[C]	214,163	71,072	56,858
3	15,162	[b]	[C]	[C]	0	0	56,858
4	36,010	[b]	[C]	[C]	32,219	71,072	56,858
5	96,658	[b]	[C]	[C]	32,219	71,072	56,858
Qualifying Part-Time Vessels							
1	43,591	22,743	0	0	0	0	16,299
2	32,219	22,743	26,534	51,172	30,324	30,324	16,299
3	9,476	22,743	0	0	0	0	16,299
4	26,534	22,743	0	0	0	0	16,299
5	96,658	22,743	0	0	15,162	30,324	16,299
6	5,686	22,743	0	0	0	0	16,299
7	28,429	22,743	17,057	51,172	13,267	30,324	16,299
8	20,848	22,743	0	0	39,800	30,324	16,299
9	0	0	34,115	51,172	30,324	30,324	16,299
10	0	0	144,039	51,172	104,239	30,324	16,299
11	24,638	22,743	0	0	13,267	30,324	16,299
12	0	0	77,705	51,172	56,858	30,324	16,299
13	0	0	0	0	0	0	16,299
14	13,267	22,743	0	0	0	0	16,299
15	0	0	13,267	51,172	9,476	30,324	16,299
16	0	0	0	0	0	0	16,299
17	5,686	22,743	0	0	0	0	16,299
18	17,057	22,743	0	0	3,791	30,324	16,299
19	7,581	22,743	0	0	0	0	16,299
20	5,686	22,743	47,381	51,172	39,800	30,324	16,299
21	7,581	22,743	0	0	0	0	16,299
22	15,162	22,743	0	0	5,686	30,324	16,299

[a] Maintain status quo quota management system for the incidental permit category.
[b] These allocation percentages would be the same as 1D4.
[c] Values not included for confidentiality issues.

Table 41. Ex-vessel revenues under various IFQ allocation system options for full-time tier 1, full-time tier 2, and part-time permit holders[a].

Alternative	1D1 Average Landings, 1988-1998	1D1A Equal % Based on 1D1	1D2 Average Landings, 2001-2005	1D2A Equal % Based on 1D2	1D3 Average Landings, Best Five Years, 1997-2005	1D3A Equal % Based on 1D3	1D4 Equal Allocation
Qualifying Tier 1 Vessels							
1	441,821	[b]	521,724	[b]	479,422	[b]	775,536
2	719,134	[b]	963,545	[b]	930,644	[b]	775,536
3	996,447	[b]	582,827	[b]	761,436	[b]	775,536
4	940,044	[b]	1,034,048	[b]	930,644	[b]	775,536
Qualifying Tier 2 Vessels							
1	178,608	[b]	[C]	[C]	14,101	176,258	141,007
2	164,508	[b]	[C]	[C]	531,125	176,258	141,007
3	37,602	[b]	[C]	[C]	0	0	141,007
4	89,304	[b]	[C]	[C]	79,904	176,258	141,007
5	239,711	[b]	[C]	[C]	79,904	176,258	141,007
Qualifying Part-Time Vessels							
1	108,105	56,403	0	0	0	0	40,422
2	79,904	56,403	65,803	126,906	75,204	75,204	40,422
3	23,501	56,403	0	0	0	0	40,422
4	65,803	56,403	0	0	0	0	40,422
5	239,711	56,403	0	0	37,602	75,204	40,422
6	14,101	56,403	0	0	0	0	40,422
7	70,503	56,403	42,302	126,906	32,902	75,204	40,422
8	51,702	56,403	0	0	98,705	75,204	40,422
9	0	0	84,604	126,906	75,204	75,204	40,422
10	0	0	357,217	126,906	258,512	75,204	40,422
11	61,103	56,403	0	0	32,902	75,204	40,422
12	0	0	192,709	126,906	141,007	75,204	40,422
13	0	0	0	0	0	0	40,422
14	32,902	56,403	0	0	0	0	40,422
15	0	0	32,902	126,906	23,501	75,204	40,422
16	0	0	0	0	0	0	40,422
17	14,101	56,403	0	0	0	0	40,422
18	42,302	56,403	0	0	9,400	75,204	40,422
19	18,801	56,403	0	0	0	0	40,422
20	14,101	56,403	117,506	126,906	98,705	75,204	40,422
21	18,801	56,403	0	0	0	0	40,422
22	37,602	56,403	0	0	14,101	75,204	40,422

[a] Maintain status quo quota management system for the incidental permit category.
[b] These allocation percentages would be the same as 1D4.
[c] Values not included for confidentiality issues.

in this amendment, the Council is striving to find a balance and desirable outcome to participants. This will in turn result in higher compliance rates and less enforcement costs. Specific details regarding the potential cost associated with monitoring and enforcement are described under alternative 7.6 (fees and cost recovery).

The permitting and reporting requirements for commercial vessels, operators, and dealers established under the FMP would continue under an IFQ system. Therefore, it is not expected that public burden hours and reporting costs will change under an IFQ system compared to the current management system. However, in order to facilitate the IFQ system administration minor modifications to the current IVR reporting requirements would be needed. More specifically, a trip identifier would be mandatory for dealer and IVR reports (the trip identifier is pre-printed on the VTR) in order to match all reported IVR landings to the dealer repots. This would allow for all IVR data to match dealer data on a trip-by-trip basis. In addition, the dealer number would also need to be recorded into the IVR to have vessels report pounds by dealer on the IVR. This would ensure that amounts of tilefish landed and ex-vessel prices are properly recorded for quota monitoring purposes and the calculation of IFQ fees, respectively (see alternative 8B below).

7.2 Permanent IFQ transferability of ownership

The IFQ transferability of ownership alternatives addressed in this amendment were described in section 5.0. For reference purposes, the tilefish IFQ transferability of ownership alternatives under consideration are:

- Alternative 2A: No Action (IFQ shares would not be transferable)
- **Alternative 2B: IFQ shares may be transferable among any interested party [Preferred Alternative]**
- Alternative 2C: IFQ shares may only be transferred among IFQ shareholders during the first five years of the IFQ program and other individuals thereafter
- Alternative 2D: IFQ shares may only be transferred among IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit
- Alternative 2E: IFQ shares may only be transferred among IFQ shareholders, other vessels maintaining a valid limited access commercial tilefish permit, or established tilefish fishermen (i.e., captains, mates, and deckhands)

IFQ reporting requirements are discussed in section 7.8.

7.2.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

Since this fishery is already operating under a hard TAL system, and the TAL is being fully harvested, it is not expected that the inclusion of transferability measures under an IFQ system of quota share allocations would impact the managed resource. That is, under

the current management regime, the total amount of tilefish that can be harvested is constrained by the overall TAL and this would not be impacted even though transferability if IFQ shares is allowed under this amendment. Therefore, the initial transfer eligibility requirements for IFQ shares would have no direct impact on tilefish mortality rates.

However, alternative 2B (preferred alternative) could potentially have indirect positive biological impacts compared to alternative 2A as it does not restrict the IFQ shares from being purchased by individuals not intending to use them for fishing. If shares were to be purchased a purpose other than fishing, directed effort in the fishery would decrease and the amount of directed catch would be below the quota, thus, producing positive biological impacts when compared to the no action alternative (2A). Lastly, it is also possible that if less efficient (i.e., experience) fishermen were to acquire IFQ shares under alternative 2B, it is possible that regulatory discards could increase when compared to the no action alternative (2A).

More specifically, more efficient fishermen are likely to spend less time catching the same amount of fish as less efficient fishermen, and thus, reducing the amount of interaction between the gear and the aquatic environment.

7.2.2 Impacts on Non-target Species

In general terms, IFQ programs may provide an opportunity to better fishing and handling methods and reduce bycatch of non-target species. Furthermore, if IFQ transferability of ownership were to promote transfer eligibility for fishermen who are more efficient catching the target species, then biological benefits may indirectly occur. More specifically, more efficient fishermen are likely to spend less time catching the same amount of fish as less efficient fishermen, and thus, reducing the amount of interaction between the gear and the aquatic environment. This will in turn likely reduce the amount of bycatch, regulatory discards, and gear interaction with the bottom habitat. On the other hand, less efficient fishermen are likely to spend more time catching the same amount of fish as more efficient fishermen, and thus, increasing the amount of interaction between the gear and the aquatic environment.

However, given the discussion of the overall nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2, the implementation of an IFQ transferability will not likely change in a substantial manner the interaction of this fishery with non-targeted species.

Relative to the no action alternative (2A) presented in this document, none of the proposed IFQ transferability of ownership alternatives are expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species.

7.2.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

As discussed in section 7.2.2, in general terms, the transferability of IFQ shares to more efficient fishermen would likely decrease effort as more efficient fishermen are likely to spend less time catching the same amount of fish as less efficient fishermen. On the other hand, less efficient fishermen would likely spend more time fishing which increases the amount of gear interaction with the bottom habitat. Therefore, changes in fishing effort could occur with the implementation of transferability of IFQ shares. However, it is difficult to predict precisely whether the implementation of IFQ transferability will result in a change in the overall fishing effort in the tilefish fishery.

The measures proposed in this action will either change or maintain the same fishing level as compared to the status quo. If less efficient marginal tilefish operations are allowed to transfer their IFQ shares to more efficient operations the overall fishing effort could likely decrease. However, it is expected that if changes in fishing effort were to occur these will be very small. Therefore, there are no anticipated increases in gear interactions with EFH. In addition, the dominant gear used to prosecute the tilefish fishery is longline gear which has minimal habitat impacts associated with it, as described in sections 6.3 and 7.1.3, and that no significant changes in fishing effort are likely, no adverse impacts to the marine habitats or EFH are expected for the proposed IFQ transferability measures relative to the no action alternative (2A).

7.2.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The discussion regarding potential changes in fishing effort as a consequence of the proposed transferability of IFQ shares management measures presented in section 7.2.3 also apply here. In general terms, it is anticipated that the proposed measures and the movement towards an IFQ fishery will produce no significant change or shift in fishing effort in the tilefish fishery. As a result, future take of ESA-listed species are not anticipated as fishing effort will not increase or shift. Therefore, there are no anticipated increases in gear interactions with endangered or protected species. None of the proposed measures addressing transferable quota shares are expected to result in positive or negative impacts to endangered or protected species relative to the no action alternative (2A).

7.2.5 Social and Economic Impacts

Transferability of quota shares is one of the most critical and contentious elements in the design of an IFQ program (NRC 1999). Most IFQ programs throughout the world allow for transferability with varying degrees of allowed quota transferability and these are

related to the objectives of the IFQ program. In general terms, it is argued that transferability of IFQ shares would allow for economic efficiency, however, in some cases it can also create unemployment in remote communities where limited economic alternatives to replace loss of employment associated with accumulation of quota shares as excess capacity leaves the fishery. Furthermore, it is also possible that transferability of quota shares could result in excessive concentration of IFQ quota in the hands of a few people. The NRC suggests that new IFQ programs where diversity is valued over economic efficiency should have limitations on transferability (NRC 1999).

According to the NRC, two main economic purposes are related with the concept of IFQ transferability. These are "1) Achieving rationalization of the industry by allowing some participants to leave the fishing industry with a compensation financed by the industry itself, that is, to be bought out by other industry participants; and 2) Ensuring that IFQs are held by those who are willing to pay the highest price for them. This promotes efficiency in the industry because those who are willing to pay the highest price for quotas will normally be those who expect to utilize them most profitably, either by doing so at a lower cost than others or by transforming the fish into a more valuable product" (NRC 1999, p. 168).

In general terms, the lesser the transfer restrictions associated with a newly developed IFQ share system, the faster and/or more likely that economic efficiency would be achieved. Transferable quotas may promote economic efficiency in the short and long-run.[29] In the short-run, transferability results in lower operating costs and higher production value in fisheries that have overwhelming harvesting capacity. In this case fishermen that can catch fish at a lowest cost or produce the most valuable product are able to buy or lease fishing quotas from marginal operations at a price that is satisfactory to both buyers and sellers. In the long-run, transferability of quotas is anticipated to optimize the size of fishing fleets as a person or firm holding quotas will have no economic incentive to invest in more equipment or larger vessels than needed to take their quota allocation (NRC 1999). However, open transferability is likely to have a range of social implications. More specifically, free transferability of quota shares could in the long-term concentrate quota shares in some communities while others lose part or the total of their entire quota. While it is not possible to anticipate the patterns and overall movement of quota shares and these will depend on the overall design of the IFQ system. Measures regarding IFQ leasing rules (alternative 7.3) and share accumulation (alternative 7.4) address some of these concerns by evaluating quota leasing rules and quota share accumulation, these and other IFQ measures evaluated in this document are intended to develop an IFQ program that addresses these issues while achieving specific goals and objectives for the tilefish fishery.

[29] In analyzing a firm's cost of production a distinction is made between the short-run and long-run view points. These concepts are planning rather than calendar time concepts and refer to the time horizon over which the firm's planning starches. The short-run is a planning period so short that a firm is not able to consider varying the quantities (per unit of time) of some resources used in the production process. In other words one or more production inputs are fixed. The long-run is a planning period long enoyhg that a firm is able to change the quantities of all resources used. In other words, all inputs are freely variable (Leftwich 1973; Awk 1988).

In general terms, free transferability of quota shares could change the status quo of the existing fishery rapidly and/or substantially. In addition, it is possible that quota shares could move into groups that are willing to pay the highest price. It is likely that these groups operate at the lowest cost, produce the most valuable product, and in general terms be the most efficient operations. While it is not possible to estimate the change in price associated with the IFQ shares under a system that allows for transfers, it is also important to consider the resource rent distribution associated with transfers. The fewer the limits on transferability the easier to sell the quota and more likely that quota prices will increase. On the other hand limiting transfer restrictions would likely result in smaller windfall profits for the individuals that received initial allocations.

Alternative 2A (no action) would prohibit the transfer of IFQ shares. Therefore, the buying or selling of quota shares would be prohibited. This alternative would not benefit people wishing to sell their shares or buy shares to enter the fishery or expand fishing operations. In addition, this alternative would not allow for share accumulation in excess of what fishermen originally obtained during the initial allocation process. Alternative 2B (preferred alternative) would allow for free quota shares transfer. That is, anyone could buy quota shares and this would benefit people wishing to buy or sell shares.[30] It is possible that if IFQ shares were to be bought by individuals not wishing to fish for tilefish in order to protect the species from harvest, then OY would not be attained.[31] Since alternative 2B does not limit persons to whom shares can be transferred, it is the most liberal of the alternatives evaluated and would enhance the market for IFQ shares to a greater extend that any other evaluated alternative. Furthermore, this alternative would allow for the transfer of shares or fishing privileges to family members. Alternative 2C would limit the number of people eligible to sell shares to for the fist five years and thus the price for selling shares would be kept at a lower cost. Therefore, this may not be beneficial to individuals wishing to sell their shares. On the other hand, this alternative would benefit IFQ participants that received small quota shares when the system is first implemented as they could be the only individuals allowed to purchase additional quota shares during the first five years of program implementation. In addition, this alternative would not allow for new entrants to participate in the fishery during the fist five years of program implementation.

Alternative 2D would reward participants in the fishery as they would be the only ones allowed to buy shares as they become available. Alternative 2E is identical to alternative 2D, except that it also allows for established fishermen to buy quota shares when they become available. Alternatives 2D and 2E would not result in drastic or rapid changes to the composition of participants in the fishery when compared to alternatives 2B and 2C. Alternatives 2D and 2E would benefit participants in this fishery (IFQ shareholders and limited access tilefish permit holders) in the case that an IFQ system is not implemented

[30] Under all the alternatives that allow for IFQ quota share transferability, the following conditions apply: transferability is only possible among persons or entities that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel as long as they meet the requirements under the reauthorized MSFCMA.

[31] Optimal yield is the harvest level for all species that achieves the greatest overall benefits, including economic, social, and biological considerations.

for all categories as only these individuals could acquire shares if desired. However, the cost of shares would likely be higher than under the alternatives that restrict to a greater extent the number of individuals that would be allowed to obtain quota shares (alternative 2A). On the other hand, the cost of shares would likely be lower than the alternative that does not restrict to a lesser extent the number of individuals that would be allowed to obtain quota shares (alternative 2B). It is important to mention that it may be difficult for some individuals to prove that they classify as well established fishermen (alternative 2E). In fact, it is anticipated that the administrative burden to NMFS may be prohibitively high as there is currently no similar program that verifies person's identities and work histories.

For IFQ transferability purposes, a receipt showing account balance and time of transfer must be filled. In order for an individual to transfer any portion of an individual allocation either permanently (sale) or temporarily (lease; see section 7.3) an IFQ Transfer Form must be submitted to NMFS. This form would contain at least the following data elements: the type of transfer, signature of both parties involved in the transfer, the cost associated with the transfer, proof of eligibility to give or receive quota, and the amount of quota to be transferred. Once the transfer has been approved by NMFS new allocation permits will be issued to both parties reflecting changes to their individual quota accounts. This permit would serve as both receipts for the transfer and proof of eligibility to possess fish under the IFQ program. A transfer of quota may be denied as a result of failure to meet U.S. citizenship/permanent resident alien requirements, the cumulative quota share resulting in a percentage prohibited under an established share accumulation threshold, or failure to meet other eligibility requirements.

7.3 IFQ leasing (temporary transfer of ownership)

The IFQ leasing alternatives addressed in this amendment were described in section 5.0. For reference purposes, the tilefish IFQ leasing alternatives under consideration are:

- Alternative 3A: No Action (Annual IFQ allocations would not be leased)
- **Alternative 3B: Annual IFQ allocations may be leased among any interested party [Preferred Alternative]**
- Alternative 3C: Only tilefish IFQ shareholders would be permitted to lease annual IFQ allocations during the first five years of the IFQ program and other individuals thereafter
- Alternative 3D: Only tilefish IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit would be permitted to lease annual IFQ allocations
- Alternative 3E: Only tilefish permit holders (IFQ shareholders or limited access permit holders) or established tilefish fishermen (i.e., captain, mates, and deckhands) would be permitted to lease annual IFQ allocations

IFQ reporting requirements are discussed in section 7.8.

7.3.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

Since this fishery is already operating under a hard TAL system, and the TAL is being fully harvested, it is not expected that the inclusion of IFQ leasing measures under an IFQ system of quota share allocations would impact the managed resource. That is, under the current management regime, the total amount of tilefish that can be harvested is constrained by the overall TAL and this would not be impacted even though transferability if IFQ shares is allowed under this amendment. Therefore, the initial IFQ leasing requirements for annual IFQ allocations would have no direct impact on tilefish mortality rates.

However, alternative 3B (preferred alternative) could potentially have positive biological impacts compared to alternative 3A as it does not restrict the annual IFQ allocations from being leased by individuals not intending to use them for fishing. If shares were to be leased for a purpose other than fishing, directed effort in the fishery would decrease and the amount of directed catch would be below the quota, thus, producing positive biological impacts when compared to the no action alternative (3A).

7.3.2 Impacts on Non-target Species

Impacts similar to those described under section 7.2.2 are also expected here. In general terms, given the discussion of the overall nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2, the implementation of IFQ leasing will not likely change in a substantial manner the interaction of this fishery with non-targeted species.

7.3.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here. Impacts similar to those described under section 7.2.3 are also expected here. In general terms, it is expected that if changes in fishing effort were to occur these will be very small. Therefore, there are no anticipated increases in gear interactions with EFH.

7.3.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here. Impacts similar to those described under section 7.2.4 are also expected here. In general terms, it is anticipated that the proposed measures will produce no significant change or shift in fishing effort in the tilefish fishery. Therefore, there are no anticipated increases in gear interactions with endangered or protected species.

7.3.5 Social and Economic Impacts

In regards to quota share leasing, the NRC pointed out that that "Some degree of leasing may be important to allow fisheries to adapt to change, and address concerns of overages (NRC 1999, p. 208). For example, leasing would allow fishermen that obtained no quota or a small quota share during the initial IFQ allocation to lease quota shares in order to participate in the fishery and fine tune their operations before they make a commitment to purchase IFQ shares. It is possible that quota shares could move via leasing into groups that are willing to pay the highest price. It is likely that these groups operate at the lowest cost, produce the most valuable product, and in general terms be the most efficient operations. Quota shareholders can also benefit from leasing as they can modify their operations to deal with market fluctuations, or simple lease their shares in the event of some type of physical or mechanical hardship. Fisherman holding IFQ shares can fish he quota or lease to another fishermen and generate revenues.

Several factors come to play when determining the value of a quota share. In general terms, it is expected that the value of the leased quotas would be associated with the expected returns from leasing quota shares. The duration of the IFQ program also plays a role in IFQ quota valuation. People will pay more for harvesting privileges that would be in place for a long-term. As a general rule, the value of the quota will increase as the length of the program increases until the discounted value, of additional years under the program approach zero. Nevertheless, as indicated under the IFQ program features discussion (see section 5.1) the IFQ program would remain in effect until it is modified or terminated (as such, there is no pre-established sunset provision to terminate the program). However, the program may be modified after going through an administrative review of the operation of the program but is not expected that an administrative program review of the operation of the program would significantly affect IFQ quota valuation. Lastly, the value or price of leasing shares would also depend on the quantity of shares available for leasing. If the amount of quota shares available for leasing is larger than the amount demanded the price for leased quotas would be reduced.

Leasing can benefit some while disadvantaging others. While in some cases both parties (shareholder and lessee) can benefit from leasing arrangements, it is possible that it may create resentment and generate conflicts as people leasing quota shares may become economically dependent of the quota shareholders. Furthermore, absentee ownership can develop under unrestricted quota shares as shareholders may rather than fishing or selling their quota shares lease them and obtain a stream of income without fishing.

Alternative 3A would not allow for annual IFQ allocations to be temporarily transferred under leasing arrangements. This alternative would not benefit people wishing to expand or contract their fishing operations using leasing arrangements. Alternative 3B (preferred alternative) would allow for anyone (as long as they meet the requirements under the reauthorized MSFCMA) to temporarily transfer annual IFQ allocations under leasing arrangements. The price of annual IFQ allocations would be maximized under this alternative. It is possible that if IFQ shares were to be leased by individuals not wishing to fish for tilefish in order to protect the species from harvest, then OY would not be

attained. Since alternative 3B does not limit persons to whom shares can be transferred via leasing, it is the most liberal of the alternatives evaluated and would enhance the market for annual IFQ allocations to a greater extend that any other evaluated alternative. Alternative 3C would limit the number of people eligible to lease shares to for the fist five years and thus the price for leasing shares would be kept at a lower cost. Therefore, this may not be beneficial to individuals wishing to lease their shares. On the other hand, this alternative would benefit IFQ participants that received small quota shares when the system is first implemented as they could be the only individuals allowed to lease additional quota shares during the first five years of program implementation. In addition, this alternative would not allow for new entrants to participate in the fishery during the fist five years of program implementation.

Alternative 3D would reward participants in the fishery as they would be the only ones allowed to lease shares as they become available. Alternative 3E is identical to alternative 3D, except that it also allows for established fishermen to lease quota shares when they become available. Alternative 3D and 3E would benefit participants in this fishery (IFQ shareholders and limited access tilefish permit holders) in the case that an IFQ system is not implemented for all categories as only these individuals could acquire shares if desired. However, the cost of shares would likely be higher than under the alternatives that restrict to a greater extent the number of individuals that would be allowed to obtain quota shares (alternative 3A). On the other hand, the cost of shares would likely be lower under the alternative that does not restrict to a lesser extent the number of individuals that would be allowed to obtain quota shares (alternative 3B). It is important to mention that it may be difficult for some individuals to prove that they classify as well established fishermen (alternative 3E). In fact, it is anticipated that the administrative burden to NMFS may be prohibitively high as there is currently no similar program that verifies person's identities and work histories.

In addition, to the general concerns associated with the capacity of transferability (alternative 7.2) and consolidation (alternative 7.4) associated with IFQ programs, there are also general concerns associated with quota leasing. More specifically, there is concern that independent owner-operators of fishing vessels or crew members may be lead to economic dependence on absentee owners as quota shares increase in value and small investors are excluded from the fishery (NRC 1999). Quota share accumulation measures described in section 7.4 below may limit the amount of quota shares an individual or entity may be able to hold during a specific time period.

For IFQ transferability purposes, a receipt showing account balance and time of transfer must be filled. In order for an individual to transfer any portion of an individual allocation either permanently (sale; see section 7.2) or temporarily (lease) an IFQ Transfer Form must be submitted to NMFS. This form would contain at least the following data elements: the type of transfer, signature of both parties involved in the transfer, the cost associated with the transfer, proof of eligibility to give or receive quota, and the amount of quota to be transferred. Once the transfer has been approved by NMFS new allocation permits will be issued to both parties reflecting changes to their individual quota accounts. This permit would serve as both receipts for the transfer and proof of

eligibility to possess fish under the IFQ program. A transfer of quota may be denied as a result of failure to meet U.S. citizenship/permanent resident alien requirements, the cumulative quota share resulting in a percentage prohibited under an established share accumulation threshold, or failure to meet other eligibility requirements.

7.4 IFQ share accumulation

The IFQ share accumulation alternatives addressed in this amendment were described in section 5.0. For reference purposes, the tilefish IFQ share accumulation alternatives under consideration are:

- Alternative 4A: No Action (IFQ share accumulation would not be limited)
- **Alternative 4B: Limit IFQ share accumulation to 49 percent of the TAL [Preferred Alternative]**
- Alternative 4C: Limit IFQ share accumulation to 37 percent of the TAL
- Alternative 4D: Limit IFQ share accumulation to 25 percent of the TAL
- Alternative 4E: Limit IFQ share accumulation to 16.5 percent of the TAL
- Alternative 4F: Considered but rejected for further analysis - Limit IFQ share accumulation to 66, 15, and 19 percent of the TAL for full-time tier 1, full-time tier 2, and part-time IFQ permit holders, respectively

Alternative 4F was considered but rejected for further analysis. Because alternative 4F is considered to allow for excessive share accumulation it was not given further consideration beyond the justification for rejection in section 5.4.F.

IFQ reporting requirements are discussed in section 7.8.

7.4.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

Since this fishery is already operating under a hard TAL system, and the TAL is being fully harvested, it is not expected that the establishment of share accumulation measures under an IFQ system of quota share allocations would impact the managed resource. Therefore, the establishment of share accumulation measures would not have any direct biological impacts on the managed resource. The only scenario that could result in increased fishing mortality from IFQ share accumulation would be if the fishing industry begins a practice known as highgrading catch. However, as discussed in section 7.1.1, the Council recommends that the discard of tilefish is prohibited under the IFQ management system as a proactive measure to avoid the potential unnecessary discard of tilefish in the future.

Relative to the no action alternative (4A) presented in this document, none of the proposed IFQ transferability of ownership alternatives are expected to result in changes

in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species.

7.4.2 Impacts on Non-target Species

In general terms, IFQ programs may provide an opportunity to better fishing and handling methods and reduce bycatch of non-target species. Furthermore, if IFQ share consolidation were to promote consolidation in the hands of fishermen who are more efficient catching the target species, then biological benefits may indirectly occur. More specifically, more efficient fishermen are likely to spend less time catching the same amount of fish as less efficient fishermen, and thus, reducing the amount of interaction between the gear and the aquatic environment. This will in turn likely reduce the amount of bycatch, regulatory discards, and gear interaction with the bottom habitat. On the other hand, less efficient fishermen are likely to spend more time catching the same amount of fish as more efficient fishermen, and thus, increasing the amount of interaction between the gear and the aquatic environment. Limiting the amount of share consolidation by implementing ownership caps (alternatives 4E followed by 4D, 4C, and 4B - also preferred alternative) would result in more fishermen participating in the IFQ program and thus likely resulting in more effort when compared to no limits (alternative 4A) on the amount of share accumulation. However, given the discussion of the overall nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2, the implementation of an IFQ share accumulation measures will not likely change in a substantial manner the interaction of this fishery with non-targeted species.

Relative to the no action alternative (4A) presented in this document, none of the proposed IFQ share accumulation alternatives are expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species.

7.4.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 6.1 and Appendix E also apply here.

As discussed in section 7.3.2, in general terms, the accumulation of IFQ shares to more efficient fishermen would likely decrease effort as more efficient fishermen are likely to spend less time catching the same amount of fish as less efficient fishermen. On the other hand, less efficient fishermen would likely spend more time fishing which increases the amount of gear interaction with the bottom habitat. Limiting the amount of share consolidation by implementing ownership caps would result in more fishermen participating in the IFQ program and thus likely resulting in larger effort when compared to no limits on the amount of share accumulation.

Changes in fishing effort could occur with the implementation of alternatives that restrict share accumulation (alternatives 4E followed by 4D, 4C, and 4B - also preferred alternative) when compared to placing no limits on ownership caps (alternative 4A).

Nevertheless, it would be expected that more share accumulation would occur in the hands of more efficient fishermen and this would improve fishing methods and practices and the overall efficiency in the fishery. However, it is difficult to predict precisely whether the implementation of IFQ share accumulation will result in a change in the overall fishing effort in the tilefish fishery.

The measures proposed in this action will either change or maintain the same fishing level as compared to the status quo. If more efficient tilefish operations are allowed to accumulate shares from less efficient operations, the overall fishing effort could likely decrease. However, it is expected that if changes in fishing effort were to occur these will be very small. Therefore, there are no anticipated increases in gear interactions with EFH. In addition, the dominant gear used to prosecute the tilefish fishery is longline gear which has minimal habitat impacts associated with it, as described in section 6.1 and Appendix E, and that no significant changes in fishing effort are likely, no adverse impacts to the marine habitats or EFH are expected for the proposed IFQ share accumulation measures relative to the no action alternative (4A).

7.4.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 6.1 and Appendix E also apply here. The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here. Impacts similar to those described under section 7.2.4 are also expected here. In general terms, it is not expected that significant changes in fishing effort would occur as a result of the proposed measures. Therefore, there are no anticipated increases in gear interactions with endangered or protected species. None of the proposed measures addressing share accumulation are expected to result in positive or negative impacts to endangered or protected species relative to the no action alternative (4A).

7.4.5 Social and Economic Impacts

The Magnuson-Stevens Act requires that if it becomes necessary to allocate or assign fishing privileges among various United States fishermen, an FMP must be carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of the total limited access privileges in the program (section 303A(c)(5)(D) of the 2006 Magnuson-Stevens Act). Even though the Act requires that any individual, person, or corporation does not acquire excessive quota shares under an IFQ system, the Act does not provide specific guidance regarding what should be the appropriate limits on consolidation.

Levels of consolidation must be related to the specific management goals of the FMP. For example, no cap on the amount of shares to be consolidated enhances the market incentives for trading quota shares. This would in turn lead to efficiency in the fishery as fishermen would attempt to maximize profits by reducing production costs and improving efficiency (better fishing and handling methods). Nevertheless, while

consolidation may increase economic efficiency, it could also lead to excessive market power in the hands of a few entities. This is likely to occur in fisheries with excessive capital, as excess leaving the industry is consolidated. It is argued that excessive market power may lead to changes in the nature of the market and its response mechanisms. For example, in regards to the issue of market power, the NRC pointed out that: "… A lack of accumulation limits may unduly strengthen the market power of some quota holders and adversely affect wages and working conditions of labor in the fishing industry, particularly in isolated communities with limited employment alternatives" (NRC 1999: p 209). However, establishing quota cap limits is not an easy task. Program objectives and the characteristics of each fishery need to be considered when establishing these limits.

Alternatives 4B (preferred alternative) through 4E would limit specific percentages of the total TAL (i.e. after adjustments for incidental catch, research asset-aside, and/or overages have been made) allocated to the IFQ program. Alternative 4E places the smallest cap on share consolidation (allows for the smallest share accumulation) followed in ascending order by alternatives 4D, 4C, and 4B. Alternative 4A would not establish a cap on share consolidation. Alternative 4A would allow for the largest amount of consolidation of IFQ shares. In economic terms, this would potentially lead to achieving increased efficiency as vessel owners would attempt to maximize profit by improving efficiency and benefiting from the opportunity to reduce production costs (economic efficiency grounds; exploitation economics of scale). Alternatives 4B through 4E would limit the amount of consolidation in the fishery and in economic terms not allow the most efficient operations to harvest the quota. However, these alternatives would potentially limit the concentration of quota shares and thus potentially limit market power in the hands of a few individuals.

The potential impact of ownership caps of the fleet size would depend on the selected IFQ share accumulation cap. For example, under alternative 4A, there is no limit to the amount of shares a single entity could control and potentially all shares could be accumulated by one single entity. Under alternative 4A, the initial IFQ share allocation described under alternative 7.1 (Tables 35 through 38) would not be impacted. However, under alternative 4C, 4D, or 4E, the initial quota share allocation described under alternative 7.1 could be impacted. The implementation of a cap on share accumulation that is higher than the initial IFQ share allocation for any given person or entity that are permanent U.S. citizens or permanent resident aliens, or corporations eligible to own a U.S. Coast Guard documented vessel, would force that entity to divest the excess shares (difference between the cap on share accumulation minus initial IFQ share allocation) within 180 days after the implementation of the IFQ system. It is important to mention that forcing IFQ shareholders to sell excess shares within 180 days may produce undesirable dynamics in share price depending on demand. Table 38 was considered carefully when setting the share accumulation cap.

As indicated above, the Council chose alternative 4B as the preferred alternative. That is, the IFQ share accumulation limit would be set at 49% of the TAL (adjusted). In selecting this alternative, the Council considered the potential market power impact that a specific individual, corporation, or other entity could have when accumulation tilefish IFQ shares

and historical fishing practices. The Council did not believe that a 49% IFQ share cap would allow harvesters to control the market price for tilefish. In fact, the Council does not believe that even a 100% IFQ share cap in the tilefish fishery would allow a single harvester control the market price for tilefish due to the large number of substitutes for tilefish available in the market place. In addition, the Council took into consideration historical landings and participation when selecting this alternative. For example, during the open access fishery, one vessel landed approximately 36% and 37% of the overall tilefish landings during the 1989 and 1990 years, respectively. The Council thought that setting a 49% IFQ share accumulation limit would provide tilefish vessels with an opportunity to accumulate shares above what some specific vessels had landed in recent history in order to potentially allow for the most efficient operations to harvest the quota. Furthermore, the Council was also concerned that if the overall TAL level goes down substantially, then full-time tier 1 and tier 2 vessels may not be able to fish at efficient levels and may require buying/leasing additional shares from other vessels in order to continue to participate full-time in the fishery. The vessels that qualified for tier 1 and tier 2 when the FMP was first developed had more than enough capacity to harvest the current quota level. In fact, in 1997, three full-time tier 1 vessels landed between 706 and 811 thousand pounds of tilefish.

7.5 Commercial Trip Limits

The commercial trip limit alternatives addressed in this amendment were described in section 5.0. For reference purposes, the commercial trip limit alternatives under consideration are:

- **Alternative 5A: No Action (Maintain status quo management regarding trip limits) [Preferred Alternative]**
- Alternative 5B: If an IFQ system is not implemented for the part-time permit category, then a 15,000 pounds tilefish trip limit would be implemented for that permit category

7.5.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

Under the current regulations trip limits are imposed in the incidental permit category (open access) to achieve a "target" or soft quota. No trip limits are imposed to the other tilefish permit categories. As described in detail in section 4.2, the FMP does not address how the quota is to be distributed among vessels within each of the three fishing categories. However, the "cooperative understanding" developed by full-time tier 1 category permit holders has allowed them to spread landings throughout the fishing year in order to maximize performance and avoid early closures. However, according to stake holders, such as cooperative system has not been developed by participants in the other fishing categories. In fact, the part-time category had early closures in 2002, 2004, 2005, and 2006. Trip limits are an alternative to a "cooperative understanding" that would likely

allow for tilefish landings to spread throughout the season for categories that have experienced early closures.

Alternative 5A (preferred alternative) would continue the status quo in the fishery and a trip limit would not be implemented for any category currently not having a trip limit in place. This measure would not result in biological impacts (positive or negative) to the stock or other fisheries relative to the previous years.

Alternative 5B would implement a 15,000 pounds trip limit for the part-time permit category in the event that an IFQ system is not implemented for this permit category. Part-time category stakeholders have indicated that a 15,000 pounds limit would allow them to continue to fish at a profitable level without saturating the market with product, and at the same time extending the fishing season and avoiding potential early closures. Under alternative 5B, the Regional Administrator would have the flexibility to adjust the tilefish trip limits under a notice of action if 80 percent of the quota for the category is attained prior to September 1st. This alternative would provide a useful tool that can be exercised at the discretion of the Regional Administrator in order to prevent potential overages and early closures in the part-time permit category.

A threshold analysis was conducted to assess the number of vessels, trips, and pounds of tilefish landed. Table 42 shows threshold analysis for various fishing years (2001 to partial 2005). For example, a 15,000 pounds trip limit would not affect the majority of the part-time vessels or trips that landed tilefish in fishing years 2001 through 2005. Based on NMFS VTR data, a threshold of 15,000 ponds per trips would have affected 33 percent of the part-time vessels and 5 percent of the trips for fishing year 2003. These trips accounted for 30 percent of the tilefish landed by part-time vessels. However, as indicated in section 4.0, as a result of the decision of the Hadaja v. Evans lawsuit, the permitting and reporting requirements for the FMP were postponed for close to a year (May 15, 2003 through May 31, 2004). During that time period, it was not mandatory for permitted tilefish vessels to report their landings. This decision vacated the regulations that implemented sub-quotas for the various limited access categories out of order. Therefore, landings in excess of the originally established tilefish quota occurred during this time period.

Partial VTR landings data for 2005 fishing year indicates that a threshold of 15,000 pounds would have impacted 29 percent of the part-time vessels and 12 percent of the trips. These trips accounted for 38 percent of the tilefish landings by part-time vessels. As indicated in Table 42, two vessels had five fishing trips over the 15,000 pounds threshold and accounted for total tilefish landings of 88,503 pounds. Therefore, on average, these five trips landed approximately 17,700 pounds or 2,700 pounds (18%) over the 15,000 pounds threshold. This would be the equivalent of an additional trip at about 13,500 pounds (2,700 pounds x five trips).

In general, trips limits may cause an increase in discards (regulatory discards) or highgrading. However, as discussed in section 7.1.1, the characteristics of the tilefish fishery are not conductive for highgrading. In addition, given the small number of trips

and pounds of tilefish landed by part-time vessels over the 15,000 pounds threshold, it is not likely that this practice would create a substantial regulatory discard problem.

It is not anticipated that the implementation of alternative 5B would result in direct biological impacts (positive or negative) to the stock or other fisheries when compared to alternative 5A. However, it is possible that the implementation of alternative 5B may hinder the ability to measure relative population abundance through commercial catch-per-unit effort (CPUE; Paul Nitschke pers. comm. 2006). A fishery independent measure of abundance does not exist for tilefish. The tilefish stock assessment relies on commercial CPUE data as an index of abundance. If a trip limit changes fishing practices of fisherman when targeting tilefish then the stock assessment can be compromised. For example CPUE will be compromised as an index of abundance if trip limits encourage tilefish fisherman to fish in areas where the catch rates are lower in order to land the more valuable larger fish. In addition trips limits can discourage fishing on grounds that possess higher catch rates further away from port which can also result in an erroneous decrease in CPUE. How trip limits may change fishing practices, and therefore catch rates, are an important consideration for stocks which used commercial CPUE data as a measure of relative abundance.

7.5.2 Impacts on Non-target Species

Alternative 5A (preferred alternative) is not expected to incur in changes in fishing effort or redistribution in fishing effort. Alternative 5B may potentially increase fishing effort as it would cap vessels to a 15,000 pounds trip limit. The change in effort will depend on how the fish that would typically be landed in excess of the 15,000 pounds trip limit would be landed. For example, as indicated in the previous section, on average, five vessels landed approximately 17,700 pounds or 2,700 pounds (18%) over the examined 15,000 pounds threshold in the 2005 fishing year (partial fishing year). Therefore, if the 15,000 pounds threshold limit would have been in effect during fishing year 2005, then an additional 13,500 pounds of tilefish would have been available to be landed by trips landings less than 15,000 pounds. If these 13,500 pounds were landed by one additional trip, then change in fishing effort would be nil. On the other hand, if these 13,500 pounds were landed by vessels landings 5,000 pounds per trip, then fishing effort would increase by less than 3 trips (13,500 pounds divided by 5,000 per trip). Alternative 5B will either change or maintain the same fishing level as compared to the status quo. However, it is expected that if changes in fishing effort were to occur these will be very small. Nevertheless, given the discussion of the overall nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2, the implementation of a trip limit will not likely change in a substantial manner the interaction of this fishery with non-targeted species.

7.5.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The discussion regarding potential changes in fishing effort as a consequence of the proposed trip limits for the part-time category presented in section 7.5.2 also apply here. As indicated in that section, the threshold analysis indicates that the proposed trip limit is not constraining, and as such, the number of trips should not increase. Therefore, there are no anticipated increases in gear interactions with EFH since effort is not expected to change. In addition, the dominant gear used to prosecute the tilefish fishery is longline gear which has minimal habitat impacts associated with it, as described in section 7.1.3, and that no significant changes in fishing effort are likely, no adverse impacts to the marine habitats or EFH are expected under the proposed trip limit under alternative 5B relative to the no action alternative (5A; preferred alternative).

7.5.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The discussion regarding potential changes in fishing effort as a consequence of the proposed trip limits for the part-time category presented in section 7.5.2 also apply here. In general terms, it is not expected that the proposed measures will produce significant change or shift in fishing effort in the tilefish fishery. As a result, future take of ESA-listed species are not anticipated as fishing effort will not increase or shift. Therefore, there are no anticipated increases in gear interactions with endangered or protected species. Alternative 5B is not expected to result in positive or negative impacts to endangered or protected species relative to the no action alternative (5A; preferred alternative).

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Table 42. The total number of tilefish part-time vessels, trips, and associated pounds for a given threshold (pounds) of tilefish, from fishing year 2001 to fishing year 2005 (partial)[a], based on VTR data.

Time Period	Threshold	Vessels	%	Trips	%	Pounds	%
FY 2001 1-Nov-01 to 31-Oct-02	>=1	7	100%	90	100%	85,651	100%
	>=500	3	43%	18	20%	74,096	87%
	>=5,000	1	14%	7	8%	46,066	54%
	>=10,000	0	0%	0	0%	0	0%
	>=11,000	0	0%	0	0%	0	0%
	>=12,000	0	0%	0	0%	0	0%
	>=13,000	0	0%	0	0%	0	0%
	>=14,000	0	0%	0	0%	0	0%
	>=15,000	0	0%	0	0%	0	0%
FY 2002 1-Nov-02 to 31-Oct-03	>=1	7	100%	123	100%	137,329	100%
	>=500	2	29%	25	20%	118,139	86%
	>=5,000	2	29%	7	6%	49,122	36%
	>=10,000	0	0%	0	0%	0	0%
	>=11,000	0	0%	0	0%	0	0%
	>=12,000	0	0%	0	0%	0	0%
	>=13,000	0	0%	0	0%	0	0%
	>=14,000	0	0%	0	0%	0	0%
	>=15,000	0	0%	0	0%	0	0%
FY 2003 1-Nov-03 to 31-Oct-04	>=1	12	100%	208	100%	887,730	100%
	>=500	11	92%	127	61%	873,576	98%
	>=5,000	7	58%	59	28%	705,961	80%
	>=10,000	6	50%	29	14%	485,949	55%
	>=11,000	6	50%	24	12%	433,352	49%
	>=12,000	5	42%	21	10%	398,927	45%
	>=13,000	5	42%	18	9%	362,316	41%
	>=14,000	5	42%	15	7%	321,354	36%
	>=15,000	4	33%	11	5%	263,409	30%

Source: NMFS unpublished vessel trip report data.

Table 42 (continued). The total number of tilefish part-time vessels, trips, and associated pounds for a given threshold (pounds) of tilefish, from fishing year 2001 to fishing year 2005 (partial)[a], based on VTR data.

Time Period	Threshold	Vessels	%	Trips	%	Pounds	%
FY 2004 1-Nov-04 to 31-Oct-05	>=1	9	100%	101	100%	342,940	100%
	>=500	4	44%	62	61%	340,988	99%
	>=5,000	4	44%	25	25%	230,484	67%
	>=10,000	3	33%	8	8%	101,389	30%
	>=11,000	3	33%	5	5%	70,267	20%
	>=12,000	2	22%	3	3%	47,111	14%
	>=13,000	2	22%	2	2%	34,815	10%
	>=14,000	1	11%	1	1%	21,073	6%
	>=15,000	1	11%	1	1%	21,073	6%
Partial FY 2005 1-Nov-05 to 18-May-06	>=1	7	100%	43	100%	232,678	100%
	>=500	4	57%	30	70%	232,077	100%
	>=5,000	4	57%	16	37%	184,913	79%
	>=10,000	3	43%	9	21%	135,301	58%
	>=11,000	2	29%	7	16%	114,257	49%
	>=12,000	2	29%	7	16%	114,257	49%
	>=13,000	2	29%	6	14%	101,991	44%
	>=14,000	2	29%	5	12%	88,503	38%
	>=15,000	2	29%	5	12%	88,503	38%

Source: NMFS unpublished vessel trip report data.

7.5.5 Social and Economic Impacts

Part-time category stakeholders have indicated that a threshold of 15,000 pounds would allow them to continue to fish at a profitable level without saturating the market with product, and at the same time extending the fishing season and avoiding potential early closures. The analysis presented in section 7.5.1 indicates that a 15,000 pounds threshold would affect few trips according to VTR landings data for 2001 through 2005 fishing years.[32] Therefore, it is not likely that this trip limit will significantly extend the fishing season for this permit category. Alternative 5B is not expected to result in positive or negative socioeconomic impacts relative to the no action alternative (5A; preferred alternative).

[32] It is likely that a substantially lower trip limit (e.g., 5,000 to 10,000 pounds range) would be necessary to spread part-time landings throughout the fishing season. However, lower trip limits (e.g., 5,000 to 10,000 pounds) are likely to adversely impact part-time vessels targeting tilefish as they need to steam for a day to the fishing grounds and would have to spend one to two days fishing to harvest the limit (typically these vessels land between 3,000 to 5,000 pounds per day). Such low trip limits (e.g., 5,000 to 10,000 pounds) may make directed trips unprofitable.

7.6 Fees and Cost Recovery

The IFQ fees and cost recovery alternatives addressed in this amendment were described in section 5.0. For reference purposes, the fees and cost recovery alternative under consideration is:

- Alternative 6A: No Action (Fees and cost recovery would not be collected if an IFQ program is implemented)
- **Alternative 6B: IFQ shareholder directly pays [Preferred Alternative]**
- Alternative 6C: IFQ shareholder pays via a federally permitted dealer

IFQ reporting requirements are discussed in section 7.8.

7.6.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

Under alternative 6A, a fee and cost recovery program would not be implemented if an IFQ program is put in place for the commercial tilefish fishery. This alternative would be in violation of the MSFCMA as the Act requires that a fee be established to recover the actual costs directly related to management, data collection and analysis, and enforcement of IFQ programs.

Alternatives 6B (preferred alternative) and 6C are purely administrative in nature as they deal with the establishment of a fee, paid by an IFQ holder, in order to recover the costs for the management, data collection and analysis, and enforcement of the IFQ program. As a result, impacts resulting from this alternative are not likely to affect the physical or biological environment.

7.6.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices or the interaction of this fishery with non-targeted species.

7.6.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not

expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to have adverse impacts to the marine habitats or EFH.

7.6.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to result in positive or negative impacts to endangered or protected species.

7.6.5 Social and Economic Impacts

Under alternative 6A, a fee and cost recovery program would not be implemented if an IFQ program is put in place for the commercial tilefish fishery. Alternatives 6B (preferred alternative) and 6C would allow for the implementation of a fee and cost recovery program. Responsibility for fee billing, collection, and submission (e.g., IFQ shareholder, dealer), calculation of percentage of ex-vessel value of tilefish to be collected, and other payment compliances will depend on the selected alternative (see section 5.6). In general terms, under alternative 6B, the IFQ shareholder directly pays fees and under alternative 6C, IFQ shareholder pays via a federally permitted dealer. The Council chose 6B as the preferred alternative. That is, the IFQ permit holder would be responsible for self-collecting his or her own fee liability for all his or her IFQ tilefish landings. The IFQ permit holder would be responsible for submitting this payment to NMFS. The Council was concerned that under alternative 6C, there was a possibility that a dealer that has collected associated cost recovery fee payments from IFQ tilefish landings could potentially go out of business, and then, the money could not be forwarded to the Service (even though it has been collected form fishermen that have landed tilefish under the IFQ system.

As previously stated, the program would impose an initial default fee of 3-percent of ex-vessel value of tilefish harvested under the IFQ program. However, preliminary analyses show that management, enforcement, and data collection cost would be approximately $94,000 (the equivalent of a 2-percent fee), thus for the purpose of discussion a 2-percent fee is compared to the default 3-percent fee. The overall fee to be paid by commercial tilefish fishermen would depend on how many permit categories are managed via IFQ system. Based on a TAL of 1.995 million pounds of tilefish, a 2005 coastwide average ex-vessel price for all market categories of $2.48 per pound, and the maximum fee level of 3-percent; the total fee expected to be collected in the first year of the program would be $141,066 under the implementation of an IFQ program for all permit categories (assuming that the entire tilefish quota is landed; Table 43). It is important to mention that while alternatives 6B and 6C would impose an initial default fee and cost recovery rate of 3-percent, this rate may change in subsequent years if the fee and cost recovery is lower than initially assessed. A higher fee would result in larger collected fees. For

example, Table 43 shows the potential fees associated with each permit category under various ex-vessel prices under a 3 and a 2-percent fee and cost recovery schedule.

Assuming 2005 tilefish landings and ex-vessel price, the potential cost to fishermen associated with the cost recovery fee of 3-percent of ex-vessel value could range from approximately $12,800 to $29,300 for full-time tier 1 vessels. For part-time vessels the costs associated with a 3-percent cost recovery fee could range from approximately $10 to $6,300 (Table 44). Assuming 2005 tilefish landings and ex-vessel price, the potential cost to fishermen associated with the cost recovery fee of up to 2-percent of ex-vessel value could range from approximately $8,500 to $19,500 for full-time tier 1 vessels. For part-time vessels the costs associated with a 2-percent cost recovery fee could range from approximately $7 to $4,200 (Table 44). The overall net cost per vessel associated with a tilefish cost recovery program under an IFQ program would depend on the cost recovery fee implemented which is not to exceed 3-percent of the ex-vessel value (given current Magnuson-Stevens Act regulations), the amount and value of tilefish landed, and any other potential costs associated with paying the fee (e.g., time to compile information and complete paperwork associated with payment of fees). It is expected that producer surplus would decrease by the amount of fee plus any other potential costs associated with paying the fee (e.g., time and materials required for completing the paperwork and paying the fee). Fees and cost recovery values associated full-time tier 2 vessels are not included for confidentiality issues.

Alternatives 6B and 6C are expected to have negative socioeconomic impacts compared to alternative 6A as fishermen revenues could potentially decrease by up to 3-percent of ex-vessel value due to fees collected by NMFS. Both alternative 6B and 6C would impose an initial default fee of 3-percent of ex-vessel value of tilefish harvested under the IFQ program. However, this rate may change in subsequent years if the fee and cost recovery is lower than initially assessed. In future years, NMFS will determine the percentage of the ex-vessel value of tilefish that would be collected. The fees would reduce producer surplus resulting from program by up to 3-percent. Those reductions in producer surplus would also reduce net benefits to the Nation. Assuming an IFQ program does increase the value of tilefish, the monies available for administration and enforcement would also increase. Net benefits and economic impacts of the IFQ program would tend to be distorted with the implementation of a fee and cost recovery program (alternatives 6B and 6C). Since the fee represents and additional cost to fishermen, it is possible that fishing operations would operate as a whole above what may be an economically optimal level for the fishery in order to compensate for the additional fee. The costs estimated above assuming a 3-percent fee recovery (maximum fee recovery allowed under MSFCMA) represent an upper bound value (maximum program fee) given the discussed assumptions.

As indicated in section 7.5.1, costs associated with in-season management are typically referred to as monitoring and enforcement costs. These administrative costs include costs associated with how much and when fish is landed, quota share issuing and transferability, etc. Enforcement costs are costs associated with the compliance of fishing regulations associated with the management program. The current tilefish management

system already has in place a system of monitoring (i.e., limited access system, vessel reports via VTR and IVR, and dealer reports) and enforcement programs which costs are not expected to significantly increase with the implementation of an IFQ system.

It is likely that the administrative cost of managing an IFQ system would be related to the overall structure of the system to be implemented and the number of participants in the IFQ fishery. For example, the greater the number of shares allowed to be held by each individual (alternative 7.4--IFQ share accumulation), or the smallest the universe of individuals allowed to hold shares (alternative 7.2--IFQ transferability of ownership) the administrative burden of managing the system would decrease. Conversely, implementing ownership caps would require higher administration costs (to NMFS) as it would require tracking the number of shares held by each shareholder versus the allowed cap.

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Table 43. Potential fees associated with a 2 and a 3-percent fee recovery program under an IFQ system by permit category assuming a 1.995 million pound TAL and various tilefish ex-vessel values.

a. Potential fees associated with a 2-percent fee recovery program.

	Potential Landings	Ex-vessel value based on an ex-vessel price of $1.88/lb[a]	Cost associated with a 2-percent fee recovery program	Ex-vessel value based on an ex-vessel price of $2.48/lb[b]	Costs associated with a 2-percent fee recovery program
Full-time Tier 1 (66% of the quota)	1,250,865 lb	2,351,626	$47,033	3,102,145	$62,042
Full-time Tier 2 (15% of the quota)	284,287 lb	$534,459	$10,689	$705,031	$14,100
Part-time (19% of the quota)	360,097 lb	$676,982	$13,540	893,043	$17,860
Total[c]	1,895,250 lb	3,563,070	$71,261	4,700,220	$94,004

[a] Coastwide (Maine through Virginia) tilefish average ex-vessel price for the 2001 through 2005 period.
[b] Coastwide (Maine through Virginia) tilefish average ex-vessel price for 2005.
[c] Totals may not add up due to rounding error. Note: The overall 1.995 million lb TAL is adjusted downward (5%) to 1.895 million pounds to account for landings by the incidental permit category.
Source: NMFS unpublished dealer data.

b. Potential fees associated with a 3-percent fee recovery program.

	Potential Landings	Ex-vessel value based on an ex-vessel price of $1.88/lb[a]	Cost associated with a 3-percent fee recovery program	Ex-vessel value based on an ex-vessel price of $2.48/lb[b]	Costs associated with a 3-percent fee recovery program
Full-time Tier 1 (66% of the quota)	1,250,865 lb	2,351,626	$70,548	3,102,145	$93,064
Full-time Tier 2 (15% of the quota)	284,287 lb	$534,459	$16,033	$705,031	$21,150
Part-time (19% of the quota)	360,097 lb	$676,982	$20,309	893,043	$26,791
Total[c]	1,895,250 lb	3,563,070	$106,892	4,700,220	$141,066

[a] Coastwide (Maine through Virginia) tilefish average ex-vessel price for the 2001 through 2005 period.
[b] Coastwide (Maine through Virginia) tilefish average ex-vessel price for 2005.
[c] Totals may not add up due to rounding error. Note: The overall 1.995 million lb TAL is adjusted downward (5%) to 1.895 million pounds to account for landings by the incidental permit category.
Source: NMFS unpublished dealer data.

Table 44. Potential fees associated with a 2 and a 3-percent fee recovery program under an IFQ system by permit category based on 2005 landings and ex-vessel values.

a. Potential fees associated with a 2-percent fee recovery program.

	2005 Landings (per vessel)	Ex-vessel value based on an ex-vessel price of $2.48/lb[b]	Costs associated with a 2-percent fee recovery program
Full-time Tier 1 Category	Minimum 171,892 lb	$426,292	$8,525
	Maximum 393,101 lb	$974,890	$19,497
	Median[a] 345,115 lb	$855,885	$17,117
	Mean 303,399 lb	$752,429	$15,048
Part-time Category	Minimum 142 lb	$352	$7
	Maximum 84,762 lb	$210,209	$4,204
	Median[a] 1,181 lb	$2,928	$58
	Mean[b] 19,633 lb	$48,689	$973

Note: Full-time tier 2 vessels are not included for confidentiality issues. [a] Median is the middle value in a distribution, above and below which lie an equal number of values after the measurements have been arranged in order of magnitude. [b] Mean = average. Source: NMFS unpublished dealer data.

b. Potential fees associated with a 3-percent fee recovery program.

	2005 Landings (per vessel)	Ex-vessel value based on an ex-vessel price of $2.48/lb[b]	Costs associated with a 3-percent fee recovery program
Full-time Tier 1 Category	Minimum 171,892 lb	$426,292	$12,788
	Maximum 393,101 lb	$974,890	$29,246
	Median[a] 345,115 lb	$855,885	$25,676
	Mean 303,399 lb	$752,429	$22,272
Part-time Category	Minimum 142 lb	$352	$10
	Maximum 84,762 lb	$210,209	$6,306
	Median[a] 1,181 lb	$2,928	$87
	Mean[b] 19,633 lb	$48,689	$1,460

Note: Full-time tier 2 vessels are not included for confidentiality issues. [a] Median is the middle value in a distribution, above and below which lie an equal number of values after the measurements have been arranged in order of magnitude. [b] Mean = average. Source: NMFS unpublished dealer data.

7.7 IFQ Program Review Process

The IFQ program review process alternatives addressed in this amendment were described in section 5.0. For reference purposes, the IFQ program review process alternatives under consideration are:

- Alternative 7A: No Action (Review of the IFQ program during a specific timeframe period would not be implemented)
- **Alternative 7B: Allow for a formal and detailed review of the IFQ program five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years) [Preferred Alternative]**
- Alternative 7C: Considered but rejected for further analysis - Develop a system for review of the IFQ program such as fixed-term, cascading entitlements

Under alternative 7A, a review of the IFQ program would not be pre-established. This alternative would be in violation of the MSFCMA as the Act requires that a formal and detailed review of the IFQ program five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years). Alternatives 7A and 7B are purely administrative in nature as they deal with the establishment of an IFQ program review process. As a result, impacts resulting from these alternatives are not likely to affect the physical or biological environment.

Under alternative 7B (preferred alternative), the following measures may be reviewed or examined five years after implementation of the IFQ program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years). For example, the measures for review may include but not be limited to: capacity reduction, safety at sea issues, transferability rules, ownership concentration caps, permit and reporting requirements, and fee and cost recovery issues. Other items may be added to address problems and/or concerns unforeseeable at this time. The formal review may be conducted/facilitated by the MAFMC (e.g., Council Staff, MAFMC Scientific and Statistical Committee, and/or externally contracted review with independent experts). In order to facilitate any necessary modifications of the program if needed, the Council recommends adding the specific IFQ measures mentioned above to the list of management actions that could be implemented via the framework adjustment process (alternative 5.15). This action is needed as a means to address specific IFQ measures through a framework adjustment procedure.

Alternative 7C was considered but rejected for further analysis. Because this alternative would implement a review process that may be too complicated and tedious for managers and stakeholders to implement it was not given further consideration beyond the justification for rejection in section 5.7.C.

IFQ reporting requirements are discussed in section 7.8.

7.7.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

In the U.S., IFQ programs are nothing more than a limited privilege to harvest a public resource and should never be considered private property. Therefore, IFQ are privileges that can are revocable and not permanent in nature. An IFQ system may last as long as the program meets its stated objectives. However, the Council reserves the right to cancel the program if needed. Section 303A(b) of the Magnuson-Stevens Act specifies the following regarding IFQs: 1) shall be considered permits; 2) may be revoked, limited, or modified at any time in accordance with this Act, including revocation if the system is found to have jeopardized the sustainability of the stock or the safety of fishermen; 3) shall not confer any right of compensation to the holder of such limited access privilege, quota share, or other such limited access system authorization if it is revoked, limited, or modified; 4) shall not create, or be construed to create, any right, title, or interest in or to any fish before the fish is harvested by the holder; and 5) shall be considered a grant of permission to the holder of the limited access privilege or quota share to engage in activities permitted by such limited access privilege or quota share. The Act also requires that Regional Fishery Management Councils ensure that any new IFQ program "establishes procedures and requirements for the review and revision of the terms of any such program (including any revisions that may be necessary once a national policy with respect to individual fishing quota programs is implemented), and, if appropriate, for the renewal, reallocation, or reissuance of individual fishing quotas."

Alternative 7A establishes no timeframe for IFQ program review and, as such, it would be in violation of the MSFCMA as the Act requires that a formal and detailed review of the IFQ program in a specific time period. Alternative 7B (preferred alternative) would require the Council to evaluate the program five years after implementation and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years). Periodic evaluation under alternative 7B would require for the IFQ program to be evaluated in regards to its effectiveness to address the problems and objectives identified under the purpose and need for action section (4.1) in addition to other unforeseeable problems that may arise in the future. It is important to stress that alternative 7B is not limiting the duration of the IFQ program but it is merely setting a time frame for evaluation purposes. Both, alternatives 7A and 7B would allow for the IFQ program to continue indefinitely until the Council opts to revise, modify and/or substitute, or permanently terminate the proposed IFQ program. However, alternative 7A would not require periodic program evaluation as with alternative 7B.

The action considered under this alternative is purely administrative; therefore, it is not expected to result in biological impacts on the tilefish stock.

7.7.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices or the interaction of this fishery with non-targeted species.

7.7.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to have adverse impacts to the marine habitats or EFH.

7.7.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to result in positive or negative impacts to endangered or protected species.

7.7.5 Social and Economic Impact

Alternatives 7A and 7B (preferred alternative) would allow for the IFQ system to be viewed as a long-term fishing privilege. However, alternative 7A establishes no timeframe for IFQ program review and, as such, it would be in violation of the MSFCMA as the Act requires that a formal and detailed review of the IFQ program in a specific time period. Conversely, alternative 7B would allow for periodic evaluation and/or adjustments to the IFQ program. Both alternatives are expected to allow fishermen to engage in long-term planning and investment. Long-term fishing privileges reduce business uncertainty and provide incentive to invest in the resource. Furthermore, by not having sunset provisions the overall efficiency of the harvesting sector increases.[33] The quota share values are based on the present value of the stream of net revenues derived from owning the quota. Setting a sunset provision could decrease the number of years the program would be in place, thus, reducing the future stream of net revenues and

[33] A sunset provision requires IFQ programs and shares to end after a certain period of time. Such provisions are typically based on equity considerations, to prevent quota from being assigned in perpetuity to the original recipients (NRC, 1999).

increasing the uncertainty associated with the program. The proposed review process under alternative 7B does not constitute a sunset provision, it merely allows for periodic evaluation and/or adjustments to the IFQ program. Thus, allowing for the flexibility for review and/or adjustments to improve the IFQ program.

While it is not possible to anticipate the potential management costs associated with alternative 7B, they are likely to be higher than those associated with alternative 7A. Costs will depend on the complexity and scope of the review process. However, it is possible that if the IFQ program encounters significant problems that need to be addressed before the initial 5-year review period, addressing those problems will likely increase unanticipated management costs.

7.8 IFQ Reporting Requirements

The IFQ reporting requirement alternatives addressed in this amendment were described in section 5.0. For reference purposes, the IFQ reporting requirement alternatives under consideration are:

- Alternative 8A: No Action (Maintain status quo reporting requirements)
- **Alternative 8B: Facilitation of an IFQ system administration if an IFQ program is implemented [Preferred Alternative]**

These alternatives are purely administrative in nature as they deal with the establishment/facilitation of IFQ reporting requirements. As a result, impacts resulting from these alternatives are not likely to affect the physical or biological environment.

7.8.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

The Tilefish FMP established a TAL as the primary control on fishing mortality. The FMP also implemented a limited entry program and a tiered commercial quota allocation of the TAL. In addition, the FMP implemented reporting requirements for commercial vessels, operators, and dealers. All the information and collection requirements and collection of information instruments currently in use to manage the tilefish limited access program can also be used to manage this fishery under an IFQ system with some minor modifications.

Under the current FMP vessels landing tilefish for sale are required to have a federal vessel permit. There are four types of tilefish vessel permit categories and these are 1) full-time tier 1; 2) full-time tier 2; 3) part-time; and 4) incidental. Vessels landing tilefish for sale need to submit vessel logbook reports. A dealer permit is required for dealers purchasing tilefish harvested from the EEZ in addition to dealers purchasing tilefish from permitted vessels. Furthermore, dealers issued a tilefish dealer permit need to submit

dealer reports.[34] Operators of commercial vessels (vessels with permits to sell tilefish) are required to obtain operator permits. These are the standard set of permits and reporting that the Council uses in most of their FMPs. However, in order to facilitate the quota monitoring process an IVR system is also in place to report landings and monitor the quota on a real time basis. The current FMP requires that the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 24 hours after returning to port and offloading as required by the Regional Administrator.

Alternative 8A would continue to use the same reporting system currently in use to mange the limited access fishery for managing the fishery under an IFQ system. Alternative 8B (preferred alternative) would modify the current reporting system to include additional requirements to identify landings under an IFQ system in a more efficient manner. Under alternative 8B, a trip identifier would be mandatory for dealer and IVR reports (the trip identifier is pre-printed on the VTR) in order to match all reported IVR landings to the dealer repots. This would allow for all IVR data to match dealer data on a trip-by-trip basis. In addition, the dealer number would also need to be recorded into the IVR to have vessels report pounds by dealer on the IVR. This would ensure that amounts of tilefish landed and ex-vessel prices are properly recorded for quota monitoring purposes and the calculation of IFQ fees, respectively.

An annual statement for each account reporting IFQ landings and ex-vessel values would be issued to each vessel by NMFS under the IFQ system for review and record keeping purposes. These ex-vessel values would be used to calculate IFQ fees.

The action considered under this alternative is purely administrative; therefore, it is not expected to result in biological impacts on the tilefish stock.

7.8.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices or the interaction of this fishery with non-targeted species.

7.8.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not

[34] Report all purchases in both pounds and dollar value (ex-vessel).

expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to have adverse impacts to the marine habitats or EFH.

7.8.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to result in positive or negative impacts to endangered or protected species.

7.8.5 Social and Economic Impacts

There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks under alternatives 8A and 8B (preferred alternative). However, under alternative 8B, a trip identifier would be mandatory in order to match all reported IVR landings to the dealer repots. This would allow for all IVR data to match dealer data on a trip-by-trip basis. In addition, the dealer number would also need to be recorded into the IVR to have vessels report pounds by dealer on the IVR. This would ensure that amounts of tilefish landed and prices are properly recorded for quota monitoring purposes and the calculation of IFQ fees. The implementation of these reported requirements will not have positive or negative social impacts. Most owners already know their dealer's permit number, and having the owners report pounds by dealer permit number, in addition to the VTR documentation number, would not create an excessive regulatory burden.

GENERAL REPORTING REQUIREMENTS

7.9 IVR Reporting Requirements

The IVR reporting requirement alternatives addressed in this amendment were described in section 5.0. For reference purposes, the IVR reporting requirement alternatives under consideration are:

- Alternative 9A: No Action (Maintain the status quo reporting of tilefish landings under the current IVR system)
- **Alternative 9B: The owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 48 hours after offloading fish [Preferred Alternative]**

7.9.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

The current tilefish regulations require that the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 24 hours after returning to port and offloading as required by the Regional Administrator. In accordance to 50 CFR Part 648.2 definitions, *Land* means to begin offloading fish, to offload fish, or to enter port with fish. *Offload* or *offloading* means to begin to remove, to remove, to pass over the rail, or otherwise take away fish from any vessel. The requirement to provide tilefish catch reports within 24 hours after landing/offloading may force fishermen to report preliminary catch data into the IVR system. Stakeholders have commented that they should only report landings via IVR once they know for sure how much fish they have in the hold and this can only be reported accurately once the fish has been packed out and in some instances this may take over 24 hours. In addition, industry members have also indicated that if they report landings after reaching port but before the fish has been packed-out, the catch estimates can be off by as much as 1,500 pounds.

Reporting tilefish catch via the IVR system allows for tilefish landings to be reported on a trip-by-trips basis. This information is used to monitor the tilefish quota landings in a timely basis.

Alternative 9A would maintain the status quo IVR reporting requirements. Under alternative 9B (preferred alternative), the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 48 hours after offloading fish. It is anticipated that increasing the time allowed for IVR reporting from 24 hours to 48 hours would allow for tilefish catch reports to be more accurate. In addition, under alternative 9B, the current IVR system would be slightly modified to allow fishermen to review and if needed edit and modify errors in entered data (i.e., vessel permit number, vessel's password/code) before exiting the IVR call-in system. Allowing fishermen to check and correct information submitted via the IVR system is expected to provide better data for management purposes.

The changes to the IVR reporting system under alternative 9B are considered administrative in nature. However, indirect positive impacts may occur as tilefish landings are expected to be more accurate under alternative 9B than under the current management system (alternative 9A).

7.9.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices or the interaction of this fishery with non-targeted species.

7.9.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to have adverse impacts to the marine habitats or EFH.

7.9.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to result in positive or negative impacts to endangered or protected species.

7.9.5 Social and Economic Impacts

As discussed in section 7.9.1, alternative 9A would maintain the status quo IVR reporting requirements. Conversely, alternative 9B (preferred alternative) would implement slight modifications to the current IVR reporting requirements. However, the proposed changes to the IVR reporting system under alternative 9B are considered administrative in nature. Alternative 9B is not expected to have positive or negative social or economic impacts when compared to the status quo (alternative 9A).

7.10 Commercial Vessel Logbook Reports

- Alternative 10B: Considered but rejected for further analysis - Exempt longline tilefish vessels from current logbook record keeping requirements (VTR) and implement a specific logbook system for those longline vessels
- Alternative 10C: Considered but rejected for further analysis - Implement an electronic reporting system for commercial landings

The commercial vessel logbook report alternatives addressed in this amendment were described in section 5.0. Alternative 10A (no action or status quo alternative) is no longer relevant as two alternatives (alternatives 10B and 10C) to the current system were considered but rejected for further analysis. More specifically, these alternatives were considered but rejected for further consideration because alternative 5.10.B may be too burdensome to implement for all parties involved and currently there are no management system capabilities to implement alternative 5.10.C, as such, no further consideration beyond the justification for rejection in section 5.10.B and 5.10.C, respectively.

GEAR RESTRICITONS

7.11 Hook Size Restriction

- Alternative 11A: Considered but rejected for further analysis - Implement minimum hook size restriction in the commercial fishery

Alternative 11A (implement minimum hook size restriction in the commercial fishery; see section 5.11.A) was considered but rejected for further analysis. Because there is no quantifiable scientific study data available to implement hook size restrictions it was not given further consideration beyond the justification for rejection in section 5.11.A.

RECREATIONAL FISHING SECTOR

7.12 Recreational Party/Charter Permits and Reporting Requirements

The party/charter permits and reporting requirements alternatives addressed in this amendment were described in section 5.0. For reference purposes, the party/charter permits and reporting requirements alternatives under consideration are:

- Alternative 12A: No Action (Maintain the status quo permit and reporting requirements for party/charter vessels and operators)
- **Alternative 12B: Establish a party/charter tilefish vessel permit and party/charter vessel reporting requirements [Preferred Alternative]**

Alternatives 12A and 12B are purely administrative in nature as they deal with vessel permit, operator permit, and reporting requirements for party/charter vessels. As a result, impacts resulting from these alternatives are not likely to affect the physical or biological environment.

7.12.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

These measures are purely administrative and are not expected to result in biological impacts (positive or negative) to the stock or other fisheries relative to the previous years. However, the permit and reporting requirements for party/charter vessels (preferred alternative 12B) will allow for collection of better data on this sector of the fishery. Better data would allow for a better understanding of the overall recreational participation in this fishery.

7.12.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices or the interaction of this fishery with non-targeted species.

7.12.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to have adverse impacts to the marine habitats or EFH.

7.12.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to result in positive or negative impacts to endangered or protected species.

7.12.5 Social and Economic Impacts

According to NMFS VTR data, 32 vessels have landed tilefish from 1996 through 2005. It is expected that all of these vessels will apply for a party/charter vessel permit in order to maintain flexibility in their operations. It is estimated that all party/charter vessels participating in the tilefish fishery hold one or more permits for fisheries that require logbook submission (e.g., multispecies, summer flounder, black sea bass, scup, etc.). As such, these vessels are only required to submit one report to meet the reporting requirement for these fisheries. Therefore, no additional reporting is anticipated by the addition of tilefish to the list.

The issuance of a permit is an essential ingredient in the management of fishery resources. Section 303(b)(1) of the Magnuson-Steven Act specifically recognized the need for permit issuance. Almost every international, federal, state, and local fishery management authority recognizes the value of permits and uses permits as part of their management systems. The purpose and use of permits is to: 1) register fishermen, fishing vessels, fish dealers, and processors, 2) list the characteristics of fishing vessels and/or dealer/processor operations, 3) exercise influence over compliance (e.g. withhold issuance pending collection of unpaid penalties), 4) provide a mailing list for the dissemination of important information to the industry, and 5) provide a universe for data collection purposes.

Experience has shown that fines for violations of specific fishery regulations are not as effective as the threat of withdrawing or not renewing permits. Fines for fishing without a permit can be more substantial and easier to enforce than fines for other violations. Vessels owners may be willing to pay the lower fines if the violation brings enough economic benefit, but do not want to be excluded from the fishery. Therefore, permit requirements may enhance enforcement.

7.13 Recreational Bag-Size Limits

The recreational bag-size limit alternatives addressed in this amendment were described in section 5.0. For reference purposes, the recreational bag-size limit alternatives under consideration are:

- Alternative 13A: No Action (Maintain status quo recreational bag-size limits)
- **Alternative 13B: Establish an 8-fish recreational bag-size limit per person per trip [Preferred Alternative]**
- Alternative 13C: Establish a 4-fish recreational bag-size limit per person per trip
- Alternative 13D: Establish a 2-fish recreational bag-size limit per person per trip
- Alternative 13E: Establish a 1-fish recreational bag-size limit per person per trip
- Alternative 13F: Establish a tilefish recreational bag-size limit of 1-fish per person per trip if recreational landings go up to 4-percent of the total TAL

7.13.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

The current FMP regulations allow for tilefish to be harvested by the recreational sector. When the FMP was first developed, the recreational participation in this fishery was very small and there was not a substantial directed recreational fishery. However, some Council members and stakeholders have indicated that they have seen an increase in recreational tilefish landings and would like to readdress this sector of the fishery. Currently, it is thought that much of the catch by the recreational sector is not captured through federal reporting requirements. Since the catch data for this sector is not fully known, no quota is set aside for the recreational fishing sector, nor is catch counted towards the total allowable landings for the fishery.

As indicated under the recreational fishery discussion presented in section 6.1, VTR data indicates that for the last 10 years (1996-2005) the number of tilefish caught by party/charter vessels from Maine through Virginia is low, ranging from 81 fish in 1996 to 994 fish in 2003 (Table 11). Mean party/charter effort ranged from less than one fish per angler in 1999, 2000, and 2002 to approximately eight fish per angler in 1997. The latest stock assessment indicates that for the 2000 through 2005 period, only two trips in the MRFSS data had tilefish reported as the primary target species (SAW 41, NEFSC 2005).

The number of tilefish discarded by recreational anglers is low. According to VTR data, on average, approximately two fish per year were discarded by party/charter recreational anglers for the 1996 through 2005 period. The quantity of tilefish discarded by party/charter recreational anglers ranged from zero in most years to 12 in 2004. As indicated in section 6.5.2, the discard level of tilefish in the directed commercial fishery is low due to the poor survival rate of discarded fish. It is possible that the low discard rate reported by party/charter boats in the VTR data is also related to the overall low survival rate of discarded fish.

Alternative 13A would maintain status quo, and as such, a recreational bag-size limit would not be implemented. Alternatives 13B (preferred alternative) through 13F consider the implementation of recreational bag-size limits, i.e., limit the number of fish per trip that recreational anglers can retain. Alternative 13B would implement an eight fish bag-size limit, alternative 13C a four fish bag-size limit, alternative 13D a two fish bag-size limit, and alternative 13F a one fish bag-size limit. The proposed limits under alternatives 13B, 13C, and 13E are associated with the highest, medium, and lowest angler mean effort for the 1996 through 2005 period. Alternative 13D would set a bag-limit slightly higher than the lower range (alternative 13E) of the mean effort seen in the last 10 years. Alternative 13F would establish a tilefish recreational bag-size limit of one fish per person per trip if recreational landings go up to 4-percent of the total TAL. This value (i.e., 4%) was obtained by averaging the three highest years of tilefish recreational landings to total landings (commercial plus recreational; 1975 through 1977 period). A small recreational fishery briefly occurred during the 1970's but subsequent recreational catches have been small. This alternative would automatically set a one fish bag limit, thus capping recreational landings per angler if the contributions of recreational landings to total landings increase to levels similar to those seen when the recreational fishery was at its highest level during the 1970's.

Minimum bag limits have proven to be effective management tools in controlling fishing mortality in the recreational fishery. This management tool has been used to control fishing mortality in recreational fisheries (e.g., striped bass, summer flounder, scup, and black sea bass). Currently only one state has implemented tilefish recreational limits. The state of Virginia has in place a recreational possession limit of 7 tilefish per person per trip.

With respect to increased levels of bycatch of tilefish, five of the proposed recreational measures (alternatives 13B through 13F) could result in the discard of tilefish which would be kept under current regulations (alternative 13A). Of the four regulations that proposed the implementation of bag-size limits, alternative 13B would result in the lowest tilefish recreational discard level, followed in ascending order by alternatives, 13C, 13D, 13E, and 13F. However, given the current limited recreational landings in the tilefish fishery and mean angler effort for most years, it is not expected that alternatives 13B through 13F would considerably impact recreational discard levels in the fishery. Nevertheless, if there was a significant increase in angler interest and participation in the recreational tilefish fishery in the future it is possible that increase levels of bycatch of

tilefish could occur as these alternatives do not prohibit anglers from engaging in catch and release fishing.

Alternatives 13B through 13F are expected to limit the amount of recreational tilefish landings. As previously stated, the recreational catch is not counted towards the total allowable landings for the fishery. Therefore, large increases in recreational landings could potentially impact the recovery of the stock. These alternatives are likely to produce positive biological impacts to the stock when compared to alternative 13A.

7.13.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

Recreational anglers typically fish for tilefish when tuna fishing especially during the summer months (Freeman, pers. comm. 2006). However, some for hire vessels from New Jersey and New York are tilefish fishing in the winter months (Caputi pers. comm. 2006). In addition, recreational boats in Virginia are also reported to be fishing for tilefish (Pride pers. comm. 2006). However, it is not known with certainty how many boats may be targeting tilefish.

Anglers are highly unlikely to catch tilefish while targeting tuna on tuna fishing trips. However, these boats may fish for tilefish at any time during a tuna trip (i.e., when the tuna limit has been reached, on the way out or on the way in from a tuna fishing trip, or at any time when tuna fishing is slow). While fishing for tuna recreational anglers may trawl using rod and reel (including downriggers), handline, and bandit gear.[35] Rod and reel is the typical gear used in the recreational tilefish fishery. Because tilefish are found in relatively deep waters, electric reels may be used to facilitate landing (Freeman and Turner 1977). Therefore, different fishing methods and/or gear may be used during the same trip to target different species.

There is no information regarding the catch composition of directed recreational tilefish trips. In fact, the latest stock assessment indicates that for the 2000 through 2005 period, only two trips in the MRFSS data had tilefish reported as the primary target species (SAW 41, NEFSC 2005). NMFS VTR data indicated that 178 party/charter boat trips caught at least one tilefish for the 1996 through 2005 period. Table 45 shows the overall catch composition of those trips. Tilefish contributed with approximately 6 percent of all the fish landed and 8 percent of the bottom species landed on trips that caught 1 or more tilefish. When considering the catch composition of bottom species only, there were seven species, which individually, accounted for greater than 5 percent of the catch. Collectively, these seven species accounted for over 87 percent of the total catch of all bottom species combined. Black sea bass headed the majority of the catch with 22.16 percent, followed by silver hake (18.63%) scup (16.91%), cod (12.35%), white and red hake (8.99%), tilefish (8.29%), and Pollock (8.04%).

[35] Bandit gear means vertical hook-and-line gear with rods attached to a vessel, with no more than two hooks per line and with line retrieved by manual, electric, or hydraulic reels.

Discard levels for bottom species caught during party/charter fishing trips that landed tilefish are low for most species with the exception of black sea bass, scup, and cod (Table 45). It is likely that the discards of black sea bass and scup are regulatory discards.

Changes in overall fishing effort as a result of implementing possession limits are unknown. The impact on fishing effort associated with the implementation of recreational bag-size limits on fishing trips depends on the targeted species. For example, a small tilefish bag-size limit would not likely affect fishing effort on directed tuna trips as tilefish is not the primary target species. Conversely, a small tilefish bag-size limit may change overall fishing effort in directed tilefish trips. Fishing effort may decrease if anglers stop targeting tilefish after the bag-limit has been reached (i.e. assumes no catch and release), or may remain the same (i.e. assumes catch and release or that other species are targeted after the bag-limit has been reached). Nevertheless, given the fact that the contribution of tilefish to the total party/charter boat catch is small, it is not expected that the proposed bag-size limits will cause large changes in fishing effort or likely change in a substantial manner the interaction of this fishery with non-targeted species. No of the alternatives in this section are expected to result in positive or negative impacts on non-target species. In addition, relative to the no action alternative presented in this section, none of the proposed bag-size limits are expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species.

7.13.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in sections 6.3 and 7.1.3 also apply here.

The discussion regarding potential changes in fishing effort as a consequence of the proposed bag-size limits presented in section 7.13.2 also apply here. In general terms, it is not expected that the proposed measures will produce significantly change or shift in fishing effort in the tilefish fishery. Therefore, there are no anticipated increases in gear interactions with EFH. In addition, the dominant recreational gear used to prosecute tilefish fishery is rod and real gear which has minimal habitat impacts associated with it, as described in sections 6.3 and 7.1.3, and that no significant changes in fishing effort are likely, no adverse impacts to the marine habitats or EFH are expected under the measures that would implement bag-size limits (alternatives 13B-13F) relative to the no action alternative (13A).

Table 45. Catch composition for party/charter boat trips that landed at least one tilefish for the 1996 through 2005 period, combined.

Species	Number of fish caught	% of total	% of group sub-total	Number of fish kept	% of total	% of group sub-total	Number of fish discarded	% of total	% of group sub-total
Pelagic Species									
Bluefish	875	1.18	4.45	875	1.37	4.47	0	0.00	0.00
Tunas[a]	2,339	3.15	11.91	2,293	3.59	11.70	46	0.44	100.00
Squids	16,427	22.14	83.64	16,427	25.75	83.83	0	0.00	0.00
Sub-Total	*19,641*	*26.47*	*100.00*	*19,595*	*30.71*	*100.00*	*46*	*0.44*	*100.00*
Bottom Species									
Cod	6,619	8.92	12.35	5,017	7.86	11.55	1,602	15.40	15.77
Cunner	200	0.27	0.37	64	0.10	0.15	136	1.31	1.34
Cusk	1,116	1.50	2.08	1,046	1.64	2.41	70	0.67	0.69
Dolphin Fish	654	0.88	1.22	645	1.01	1.48	9	0.09	0.09
White and Red Hake	4,819	6.50	8.99	4,662	7.31	10.73	157	1.51	1.55
Pollock	4,312	5.81	8.04	3,629	5.69	8.35	683	6.57	6.72
Scup	9,065	12.22	16.91	6,065	9.51	13.96	3,000	28.84	29.53
Black Sea Bass	11,881	16.01	22.16	7,886	12.36	18.15	3,995	38.41	39.32
Spiny Dogfish	506	0.68	0.94	18	0.03	0.04	488	4.69	4.80
Tilefish	4,443	5.99	8.29	4,424	6.94	10.18	19	0.18	0.19
Silver Hake	9,989	13.46	18.63	9,989	15.66	22.99	0	0.00	0.00
Sub-Total	*53,604*	*72.25*	*100.00*	*43,445*	*68.11*	*100.00*	*10,159*	*97.67*	*100.00*
Other Species (may contain pelagic and/or bottom species)									
Other Species	946	1.28	100.00	749	1.17	100.00	197	1.89	100.00
Total	74,191	100.00	- -	63,789	100.00	- -	10,402	100.00	- -

[a] Includes the following tunas: skipjack, bluefin, little, big eye, albacore, and yellow fin.
Source: NMFS unpublished vessel trip report data.

7.13.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in sections 6.3 and 7.1.3 also apply here.

The discussion regarding potential changes in fishing effort as a consequence of the proposed bag-size limits presented in section 7.13.2 also apply here. In general terms, it is anticipated that the proposed measures will produce no significant change or shift in fishing effort in the tilefish fishery. As a result, future take of ESA-listed species are not anticipated as fishing effort will not increase or shift. Therefore, there are no anticipated increases in gear interactions with endangered or protected species. None of the proposed measures that would implement bag-size limits (alternatives 13B-13F) are expected to result in positive or negative impacts to endangered or protected species relative to the no action alternative (13A).

7.13.5 Social and Economic Impacts

A small recreational fishery briefly occurred during the mid 1970's, with less than 100,000 pounds annually. When the FMP was first developed, the recreational participation in this fishery was very small and there was not a substantial directed recreational fishery. Since, the catch data for this sector is not fully known, no quota is set aside for the recreational fishing sector, nor is catch counted towards the total allowable landings for the fishery. However, the current FMP regulations allow for tilefish to be harvested by the recreational sector.

The Council chose 13B as the preferred alternative. Alternative 13B would implement an 8-fish recreational bag-size limit per person per trip. This is the largest recreational bag-limit among the evaluated alternatives implementing recreational bag-size limits (alternatives 13B-13F). An 8-fish recreational bag-size limit corresponds to the highest angler mean effort for the 1996 through 2005 period. The Council aggress that it is likely that the number of recreational fishing trips targeting tilefish is limited due to weather and sea conditions as the fish are found offshore in deep water. As such, recreational participation is likely to be already very limited. Nevertheless, the Council is concern that it appears to be that recreational participation is on the rise and limits on the amount of recreational landings need to be addressed. The Council anticipates that as additional information is collected for this segment of the industry, adjustments to the recreational bag-size limit could be implemented via the framework adjustment process.

According to MRFSS data, recreational catches have been low for the last two decades ranging from zero for most years to less than 5,000 pounds in 2003 according to MRFSS data (Table 10). In addition, VTR data indicates that for the last 10 years (1996-2005) a total of 4,443 tilefish has been caught by party/charter vessels from Maine through Virginia, ranging from 81 fish in 1996 to 994 fish in 2003 (Table 11). Given the low number of tilefish caught by recreational anglers, it is most likely there is not a significant directed tilefish fishery in existence at this time. Nevertheless, as indicated in section 7.13.4, recreational vessels off New York, New Jersey, and Virginia are increasingly fishing for tilefish.

According to VTR data, for the 1996 through 2005 period, the largest amount of tilefish caught by party/charter vessels were made by New Jersey vessels (2,432), followed by New York (1,547), Virginia (270), Rhode Island (178), Maine (14), and Maryland (2). Party/charter boats from New Jersey have shown a significant uptrend in the number of tilefish caught in the last six years while the boats from New York has shown a significant downward trend in the number of fish caught for the same time period (Table 12).

It is not known with certainty how many boats may be targeting tilefish. Nevertheless, it is likely that due to the recreational catch data from MRFSS and VTR data, the number of vessel targeting tilefish is likely to be very low.

Recreational anglers typically fish for tilefish when tuna fishing especially during the summer months (Freeman, pers. comm. 2006). However, some for hire vessels from New Jersey and New York are tilefish fishing in the winter months (Caputi pers. comm. 2006). In addition, recreational boats in Virginia are also reported to be fishing for tilefish (Pride pers. comm. 2006).

Anglers are highly unlikely to catch tilefish while targeting tuna on tuna fishing trips. However, these boats may fish for tilefish at any time during a tuna trip (i.e., when the tuna limit has been reached, on the way out or on the way in from a tuna fishing trip, or at any time when tuna fishing is slow). While fishing for tuna recreational anglers may trawl using rod and reel (including downriggers), handline, and bandit gear. Rod and reel is the typical gear used in the recreational tilefish fishery. Because tilefish are found in relatively deep waters, electric reels may be used to facilitate landing (Freeman and Turner 1977).

There is very little information available to empirically estimate how sensitive the affected anglers might be to the proposed recreational bag-size limits (alternatives 13B-13F). It is possible that the proposed management measures could restrict the recreational fishery and cause some decrease in recreational satisfaction (i.e., low bag limit). However, due to lack of data, these effects cannot be quantified. It is likely that the proposed measures with a lower bag-size limit (alternatives 13E and F) would affect recreational satisfaction to a lesser extent than measures with larger bag-size limits (alternative 13B and C).

Although the proposed regulations may change the number of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. In addition, recreational anglers may choose not to stop recreational fishing altogether and may choose to fish for alternative species (scup, black sea bass, hake, cod, tautog, pelagics, etc.). Even though the proposed management measures could affect the demand for trips for tilefish, it is not expected that they would negatively affect the overall number of recreational fishing trips in the North and mid-Atlantic regions. Therefore, the demand for fishing trips should remain relatively unaffected. As such, there should not be significant adverse impacts to ports and communities as a result of the proposed bag-size limit measures when compared to the status quo alternative (13A).

MONITORING OF TILEFISH LANDINGS

7.14 Improve Monitoring of Golden Tilefish Landings Caught in the Mid-Atlantic Region

The management measures addressing landings of south Atlantic tilefish into the mid-Atlantic region were described in section 5.0. For reference purposes, these measures are:

- Alternative 14A: No Action (Maintain the status quo management regarding the catch and reporting of tilefish)

- **Alternative 14B: Implement measures that would allow for golden tilefish caught in the management unit to be landed in the management unit only [Preferred Alternative]**

7.14.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

The management unit for this FMP is defined as all golden tilefish under United States jurisdiction in the Atlantic Ocean north of the Virginia/North Carolina border. Tilefish south of the Virginia/North Carolina border are currently managed as part of the Fishery Management Plan for the Snapper-Grouper Fishery managed by the South Atlantic Fishery Management Council.

According to stakeholders, fisherman holding a tilefish Federal permit and a snapper/grouper Federal permit could potentially fish for golden tilefish in the mid-Atlantic and for southern tilefish (south of the Virginia/North Carolina border) on the same trip. If tilefish landings are not properly reported indicating where they came from, the recovery of the stock could potentially be adversely affected. For example, if the amount of golden tilefish is mistakenly underreported on trips where tilefish from both regions are landed, this could adversely affect the recovery strategy for this species as not all golden tilefish landings may be properly reported. On the other hand, if the amount of golden tilefish is mistakenly over reported on trips where tilefish from both regions are landed, this could result in the golden tilefish fishery being closed too early. Therefore it is important to better define where tilefish are caught as fishermen may potentially report landings of tilefish in one region into another region in order to maintain active permit status or avoid more restrictive measures. It is not known with certainty how many vessels engage in this activity, however, it is expected that only a few number of vessels are currently engage in this type of activity (L. Nolan, pers. comm. 2006).

In order to avoid the reporting problems stated in the previous paragraph, it is required that vessels landing tilefish caught from this management unit must land tilefish in the northeast/mid-Atlantic states of Maine through Virginia and prohibit combination trips in which vessels fish in both management units on the same trip. In addition, a dealer permit is required for dealers purchasing tilefish harvested from the EEZ in addition to dealers purchasing tilefish from permitted vessels. Dealers issued a tilefish dealer permit must report all fish purchases along with information required at section 648.7 (l)(i). It is expected that these requirements will aid in all tilefish landings being reported in the appropriate management unit were they were caught.

It is expected that preferred alternative 14B will have positive impacts as tilefish landings are expected to be more accurately reported when compared to alternative 14A (status quo).

7.14.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

The proposed requirements under preferred alternative 14B are not expected to change fishing methods and practices. However, they would allow for better landings reporting and properly account for catches and landings of golden tilefish in the management unit. Relative to the no action alternative (14A) presented in this document, alternative 14B is not expected to result in changes in the discarding rate of tilefish when targeted, discarding rates when fishing for non-targeted species, or increase discarding rates of non-targeted species.

7.14.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in sections 6.3 and 7.1.3 also apply here.

The proposed requirements under preferred alternative 14B are not expected to change fishing methods and practices. However, they would allow for better landings reporting and properly account for catches and landings of golden tilefish in the management unit. In general terms, it is anticipated that the proposed measures will produce no significant change or shift in fishing effort in the tilefish fishery. Therefore, there are no anticipated increases in gear interactions with EFH no adverse impacts to the marine habitats or EFH are expected from alternative from alternative 14B relative to the no action alternative (14A).

7.14.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in sections 6.3 and 7.1.3 also apply here.

The proposed requirements under preferred alternative 14B are not expected to change fishing methods and practices. However, they would allow for better landings reporting and properly account for catches and landings of golden tilefish in the management unit. In general terms, it is anticipated that the proposed measures will produce no significant change or shift in fishing effort in the tilefish fishery. As a result, future take of ESA-listed species are not anticipated as fishing effort will not increase or shift. Therefore, there are no anticipated increases in gear interactions with endangered or protected species. Alternative 14B is not expected to result in positive or negative impacts to endangered or protected species relative to the no action alternative (14A).

7.14.5 Social and Economic Impacts

The proposed requirements under preferred alternative 14B are not expected to change fishing methods and practices. However, they would allow for better landings reporting

and properly account for catches and landings of golden tilefish in the management unit. Alternative 14B is not expected to result in positive or negative social or economic impacts relative to the no action alternative (14A). However, positive indirect impacts may occur as tilefish landings are expected to be more accurately reported when compared to alternative 14A (status quo).

FRAMEWORK ADJUSTMENT

7.15 Framework Adjustment Process

The management measures addressing the inclusion of recreational measures and measures that facilitate the periodic review of the IFQ program to the list of management measures that can be addressed via the framework adjustment process were described in section 5.0. For reference purposes, the framework adjustment process alternatives under consideration are:

- Alternative 15A: No Action (maintain the status quo measures that can be added or modified via the framework adjustment process)
- **Alternative 15B: Expand the list of management measures identified to be added or modified via the framework adjustment process to include recreational measures and measures that facilitate the periodic review of the IFQ program [Preferred Alternative]**

7.15.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

The current FMP contains a series of management measures that can be added or modified through a streamlined public review process. These measures were identified in the plan as measures that could be implemented or adjusted at any time during the year (with the exception of the annual quotas). A detailed description of the process is presented in sections 1.2.1.3 and 3.1.17 of the FMP. The list of possible management measures that currently could be addressed via this process are presented in section 5.15.

As indicated in section 7.13.1, when the FMP was first developed, the recreational participation in this fishery was very small and there was not a substantial directed recreational fishery. The FMP regulations allow for tilefish to be harvested by the recreational sector but it does not contain any recreational regulations. Some Council members and stakeholders have indicated that they have seen an increase in recreational tilefish landings and would like to readdress this sector of the fishery (see sections 6.1 and 7.13.1). Currently, it is thought that much of the catch by the recreational sector is not captured through federal reporting requirements. In addition, in order to facilitate the IFQ review process described under alternative 7B (see section 7.7), measure that could facilitate the review of the IFQ system would also be included in the list of management measures that can be modified via the fretwork process.

Alternative 15A would maintain the current status quo alternatives, and as such, the list of management measure that can be added or modified through a streamlined public review process would not change. Alternative 15B (preferred alternative) would allow for the expansion of the list of management measures that have been identified in the plan that can be implemented or adjusted at any time during the year. The measures to facilitate the periodic review of the IFQ program. The recreational management measures to be added to the list are: 1) recreational bag-size limit, fish size limit, and seasons; and 2) recreational gear restrictions or prohibitions. The measures to facilitate the periodic review of the IFQ program to be added to the list are: 1) capacity reduction; 2) safety at sea issues; 3) transferability rules; 4) ownership concentration caps; 5) permit and reporting requirements; and 6) fee and cost recovery issues. The inclusion of these measures to the list of measures that can be addressed via the framework adjustment process would provide flexibility to managers to address potential changes in the fishery in a timely manner.

The inclusion of these management measures to the list of measures that can be addressed via the framework adjustment process would incorporate, into the FMP, mechanisms to control and address potential future increases in tilefish recreational landings and/or modifications to the IFQ system. Alternative 15B is purely administrative in nature as it deals with the expansion of the list of management measures that can be addressed under the framework adjustment process. As a result, impacts resulting from this alternative are not likely to affect the physical or biological environment. However, indirect positive impacts may occur as we now have additional tools in place to control and address potential future increases in tilefish recreational landings or facilitate the periodic review of the IFQ system.

7.15.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

Alternative 15A would maintain status quo regulations. Alternative 15B (Preferred alternative) would expand the possible management measures for the fishery that can be addressed via the framework adjustment process to include recreational measures (recreational minimum fish size, recreational possession limit, recreational season, and recreational gear restrictions or prohibitions) and measures to facilitate the review of the IFQ system (capacity reduction, safety at sea issues, transferability rules, ownership concentration caps, permit and reporting requirements, and fee and cost recovery issues). Alternative 15B is purely administrative; therefore, it is not expected to have any impact on fishing methods and practices or the interaction of this fishery with non-targeted species.

7.15.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.
Alternative 15A would maintain status quo regulations. As indicated in section 7.15.2, alternative 15B (preferred alternative) is purely administrative; therefore, it is not expected to have any impact on fishing methods and practices and are is expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to have adverse impacts to the marine habitats or EFH.

7.15.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

Alternative 15A would maintain status quo regulations. As indicated in section 7.15.2, alternative 15B (preferred alternative) is purely administrative; therefore, it is not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and is not expected to result in positive or negative impacts to endangered or protected species.

7.15.5 Social and Economic Impacts

Alternative 15A would maintain status quo regulations. As indicated in section 7.15.2, alternative 15B (preferred alternative) is purely administrative; therefore, it is not expected to have any impact on fishing methods and practices, result in changes in fishing effort or redistribution in fishing effort, or result in positive or negative social or economic impacts. However, alternative 15B would provide flexibility to managers to address potential changes in the fishery in a timely manner.

ESSENTIAL FISH HABITAT (EFH) MEASURES

7.16 EFH Designations

The management measures addressing the designation of EFH for tilefish were described in section 5.0. For reference purposes, these measures are:

- Alternative 16A: No Action: Maintain status quo EFH designations
- **Alternative 16B: Modify status quo EFH designations [Preferred Alternative]**
- Alternative 16C: Considered but rejected for further analysis - GIS analysis of substrate and temperature

Alternative 16C (GIS analysis of substrate and temperature) was considered but rejected for further analysis, on the basis that data does not support such an analysis. No further

consideration was given to alternative 16C in the documents beyond justification for rejection in section 5.16.C.

7.16.1 Impacts on Managed Resource

Under no action alternative 16A, the current EFH designations for tilefish life stages (eggs and larvae, juveniles and adults) would be maintained as described in section 5.16.A. The impacts of designating EFH for tilefish relative to having no designation was evaluated in the original FMP (MAFMC 2000), however this no action alternative only proposes maintaining the current EFH designations. The MSFCMA (50 CFR Part 600.930) imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH, therefore the current areas defined as EFH would continue to trigger consults on actions that have been proposed within the area currently designated. In addition, any fishery management plan actions must consider the impacts of those actions on habitat and EFH as one of the VECs. Alternative 16A is expected to have neutral biological impacts on the managed resource.

Under alternative 16B (preferred alternative), the EFH designations for tilefish (eggs, larvae, juveniles and adults) would be redefined as described in section 5.16.B. The impacts of implementing revised, more specific EFH designations on the managed resource would be neutral relative to the no action alternative, unless the reduction in EFH area and the use of EFH descriptions that focus on bottom temperature and substrate type lead to more effective management measures to reduce the adverse habitat impacts of fishing and non-fishing activities, which result in increased resource productivity.

7.16.2 Impacts on Non-target Species

Under no action alternative 16A, the current EFH designations for tilefish life stages would be maintained as described in section 5.16.A. Maintaining the current EFH designations for tilefish would not directly trigger any action to modify fishing methods and practices in the tilefish fishery or in any other federally managed fishery, or result in changes in the interaction of these fisheries with non-targeted species. It is simply the action of identifying areas that may be “essential” to maintain the productivity of the tilefish resource. Therefore, alternative 16A is expected to have neutral impacts on non-target species. Similarly, the action alternative 16B (preferred alternative), which would redefine tilefish EFH as described in section 5.16.B, is expected to have neutral impacts on non-target species for the same reasons described above for alternative 16A.

7.16.3 Impacts on Habitat (Including EFH)

Under no action alternative 16A, the current EFH designations for tilefish life stages would be maintained as described in section 5.16.A, therefore this alternative is expected to have neutral impacts on habitat and EFH. The impacts of designating EFH for tilefish relative to having no designation was evaluated in the original FMP (MAFMC 2000); however, this no action alternative only proposes maintaining the currently established EFH designations.

Under alternative 16B (preferred alternative), the EFH designations for tilefish would be redefined as described in section 5.16.B, producing updated descriptions of tilefish EFH for all four life history stages on the outer continental shelf and slope. The action alternative identifies narrower ranges of depth and bottom temperature and semi-lithified clay as the essential substrate necessary for the excavation of burrows used by juvenile and adult tilefish for shelter (see section 6.3.2) and also describes other substrate types used by the fish for shelter. The new preferred descriptions also use meters and degrees Centigrade, as well as feet and degrees Fahrenheit, to define depth and temperature, making them consistent with labeling conventions used in EFH designations for other managed species in the region. The temperature and depth ranges identified in the action alternative fall within the ranges identified in the status quo descriptions and are believed to more accurately define essential habitat characteristics for tilefish. The emphasis on preferred temperature and substrate requirements as the primary elements of EFH for juvenile and adult tilefish and the use of a narrower depth range that corresponds with these habitat features is an improvement on the geographically broader status quo designations that emphasize depth.

The habitat impacts of the action alternative relative to the no action alternative are neutral to potentially positive. Under alternative 16B, the EFH designations would be based on up-dated, more specific information that allows EFH to be more narrowly defined geographically. For the benthic life stages (juveniles and adults), they also emphasize substrate type and bottom temperature as the primary characteristics of EFH, with depth as a secondary factor that is used primarily to map the spatial extent of EFH. A reduction in EFH area and a more detailed description of essential substrate types could potentially result in more effective habitat management measures to minimize the adverse effects of fishing on tilefish EFH. Because tilefish EFH is located on the edge of the continental shelf, far away from the coastal zone where non-fishing activities pose threats to marine habitats, changes to the EFH designations for this species are not expected to have any effect on the consultation process used the National Marine Fisheries Service to regulate the habitat impacts of non-fishing activities.

7.16.4 Impacts on Endangered and Protected Species

Under no action alternative 16A, the current EFH designations for tilefish life stages would be maintained as described in section 5.16.A. Maintaining the current EFH designations for tilefish would not directly trigger any action to modify fishing methods and practices in the tilefish fishery or in any other federally managed fishery, or results in changes in the interaction of these fisheries with endangered and protected species. It is simply the action of identifying areas that may be “essential” to maintain the productivity of the tilefish resource. Therefore, alternative 16A is expected to have neutral impacts on endangered and protected species. Similarly, the action alternative 16B (preferred alternative), which would redefine tilefish EFH as described in section 5.16.B, is expected to have neutral impacts on endangered and protected species for the same reasons described above for alternative 16A.

7.16.5 Social and Economic Impacts

Under no action alternative 16A, the current EFH designations for tilefish life stages would be maintained as described in section 5.16.A, therefore this alternative is expected to have neutral impacts on the social and economic aspects of human communities. The impacts of designating EFH for tilefish relative to having no designation was evaluated in the original FMP (MAFMC 2000); however, this no action alternative only proposes maintaining the currently established EFH designations.

Under alternative 16B (preferred alternative), the EFH designations for tilefish would be redefined as described in section 5.16.B. Impacts of the action alternative 16B on the social and economic aspects of human communities are expected to be positive relative to the no action alternative. Under alternative 16B, the EFH designation is more narrowly defined in terms of substrate type, depth, and temperature ranges and includes more detailed descriptions of essential substrates for juvenile and adult tilefish. The action alternative is expected to have positive social and economic impacts because it could result in an increase in human activities that may have been unnecessarily constrained in areas not truly "essential" as tilefish habitat.

7.17 HAPC Designation

The management measures addressing the designation of HAPC for juvenile and adult tilefish were described in section 5.0. For reference purposes, these measures are:

- Alternative 17A: No Action: Maintain status quo HAPC designation
- Alternative 17B: Status quo HAPC with modified depth range
- **Alternative 17C: Designate HAPC in a specified depth range within four canyons [Preferred Alternative]**
- Alternative 17D: Designate HAPC as thirteen canyons (in a specified depth range)

7.17.1 Impacts on Managed Resource

Under no action alternative 17A, the current HAPC designations for tilefish juveniles and adults would be maintained as described in section 5.17.A. The impacts of designating HAPC for tilefish relative to having no designation was evaluated in the original FMP (MAFMC 2000), however this no action alternative only proposes maintaining the current HAPC designations. The MSFCMA (50 CFR Part 600.930) imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH, therefore the current areas defined as EFH would continue to trigger consults on actions that have been proposed within the area currently designated. Designated HAPC however emphasizes certain areas for tilefish as being particularly sensitive to human induced impacts, thus warranting additional concern. In addition, any fishery management plan actions must consider the impacts of those actions on habitat as one of the VECs. Alternative 17A is expected to have neutral biological impacts on the managed resource.

Under alternatives 17B, 17C, and 17D, the HAPC designations for tilefish juveniles and adults would be redefined as described in sections 5.17.B, 5.17.C, and 5.17.D, respectively, based on a re-examination of studies referenced in the original EFH source document for tilefish and updates to this document in 2005 (Steimle et al. 1999; 2005). The description of HAPC under alternative 17B is a subset of the currently designated HAPC for juvenile and adult tilefish and is defined by narrower depth ranges than the status quo HAPC. These depths correspond to the depths described in the revised EFH designation for juvenile and adult tilefish. The impacts of implementing alternative 17B on the managed resource would be neutral relative to the no action alternative 17A since the revision of the status quo HAPC by itself would have no effect on managed resources. However, the impacts could potentially be positive if the Council implements management measures to minimize the adverse impacts of fishing on EFH within the newly-defined HAPC, between 100 and 300 meters, and those measures more effectively increase resource productivity than habitat management actions applied to the larger status quo HAPC, between 76 and 366 meters.

Under alternative 17C, EFH for juvenile and adult tilefish within four canyons that are known to have clay outcrop/pueblo habitats that are considered highly vulnerable to the adverse impacts of bottom trawling, would be designated as HAPC. Alternative 17C is expected to result in neutral to potentially positive impacts on the managed resource. Positive impacts could result if habitat management actions are taken to protect vulnerable tilefish EFH within these four canyons and they increase resource productivity more effectively than measures taken on a broader spectrum of tilefish habitats within the existing HAPC.

Under alternative 17D, EFH for juvenile and adult tilefish within thirteen canyons that are either known to have clay outcroppings, or are steep enough that they could potentially contain clay outcrops, would be designated as HAPC. This alternative is expected to result in neutral to potentially positive impacts on the managed resource. Positive impacts could result if habitat management actions are taken to protect vulnerable tilefish EFH within these thirteen canyons and they increase resource productivity more effectively than measures taken on a broader spectrum of tilefish habitats within the existing HAPC.

7.17.2 Impacts on Non-target Species

Under no action alternative 17A, the current HAPC designations for juvenile and adult tilefish would be maintained as described in section 5.17.A. Maintaining the current HAPC designations for tilefish would not directly trigger any action to modify fishing methods and practices in the tilefish fishery or in any other federally managed fishery, or results in changes in the interaction of these fisheries with non-targeted species. It is simply the action of identifying areas that may be “areas of particular concern” to maintain the productivity of the tilefish resource. Therefore, alternative 17A is expected to have neutral impacts on non-target species. Similarly, the action alternatives 17B, 17C, and 17D, which would redefine tilefish HAPC as described in sections 5.17.B, 5.17.C,

and 5.17.D, respectively, are expected to have neutral impacts on non-target species for the same reasons described above for alternative 17A.

7.17.3 Impacts on Habitat (Including EFH)

Under no action alternative 17A, the current HAPC designations for tilefish juveniles and adults would be maintained as described in section 5.17.A. The impacts of designating HAPC for tilefish relative to having no designation was evaluated in the original FMP (MAFMC 2000), however this no action alternative only proposes maintaining the current HAPC designations. Alternative 17A is expected to have neutral biological impacts on habitat. Under alternatives 17B, 17C, and 17D, or some combination of these three action alternatives, the HAPC designations for tilefish juveniles and adults would be redefined as described in sections 5.17.B, 5.17.C, and 5.17.D, respectively.

HAPC under alternative 17B is a subset of the currently designated HAPC for juvenile and adult tilefish and is defined by narrower depth ranges than the status quo HAPC. These depths correspond to the depths described in the revised EFH designation for juvenile and adult tilefish. In the absence of any associated management actions, the habitat impacts of alternative 17B would be neutral relative to the no action alternative, but could potentially be positive if management measures are taken by the Council – in this amendment or in the future – to minimize the adverse impacts of fishing on EFH within the newly-defined HAPC that are more effective than habitat management actions that could be taken within the larger, more broadly-defined status quo HAPC.

Under alternative 17C, a specific depth range within four canyons that are known to have clay outcrop/pueblo habitats that are highly vulnerable to the adverse impacts of bottom trawling would be designated as HAPC. In the absence of any associated management actions, the habitat impacts of this alternative would be neutral relative to the no action alternative, but could potentially be positive if management measures are taken by the Council – in this amendment or in the future– to minimize the adverse impacts of fishing on EFH within these four canyons areas that are more effective than habitat management actions that could be taken within the much larger status quo HAPC.

Under alternative 17D, a specific depth range within thirteen canyons that are either known to have clay outcroppings, or are steep enough that they could potentially contain clay outcrops, would be designated as HAPC. In the absence of any associated management actions, the habitat impacts of this alternative would be neutral relative to the no action alternative, but could potentially be positive if management measures are taken by the Council – in this amendment or in the future– to minimize the adverse impacts of fishing on EFH within these 13 canyons that are more effective than habitat management actions that could be taken within the larger status quo HAPC.

Considering the three action alternatives relative to one another, the modified status quo HAPC area (alternative 17B) only includes three of the 13 canyons identified in alternative 17D which have the potential to contain clay outcrop/pueblo habitats. Alternative 17C designates a much smaller area, but includes four canyon areas that are

known to contain clay outcrop/pueblo habitats. Habitat management measures applied to these four canyons would probably be more effective in terms of the amount of vulnerable tilefish EFH that would be protected relative to the area being managed. Alternative 17D includes thirteen canyons that contain, or could potentially contain, clay outcroppings, and while much larger than the alternative 17C HAPC, would likely afford more extensive coverage of that habitat type.

7.17.4 Impacts on Endangered and Protected Species

Under no action alternative 17A, the current HAPC designations for juvenile and adult tilefish would be maintained as described in section 5.17.A. Maintaining the current HAPC designations for tilefish would not directly trigger any action to modify fishing methods and practices in the tilefish fishery or in any other federally managed fishery, or results in changes in the interaction of these fisheries with endangered and protected species. It is simply the action of identifying areas that may be "areas of particular concern" to maintain the productivity of the tilefish resource. Therefore, alternative 17A is expected to have neutral impacts on endangered and protected species. Similarly, the action alternatives 17B, 17C, and 17D, which would redefine tilefish HAPC as described in sections 5.17.B, 5.17.C, and 5.17.D, respectively, are expected to have neutral impacts on endangered and protected species for the same reasons described above for alternative 17A.

7.17.5 Social and Economic Impacts

Under no action alternative 17A, the current HAPC designation for tilefish juveniles and adults would be maintained as described in section 5.17.A, therefore this alternative is expected to have neutral impacts on the social and economic aspects of human communities. The impacts of designating HAPC for tilefish relative to having no designation was evaluated in the original FMP (MAFMC 2000); however, this no action alternative only proposes maintaining the currently established HAPC designations.

Under alternative 17B, the HAPC designations for tilefish would be redefined as described in section 5.17.B. The new descriptions of HAPC under alternative 17B are a subset of the currently designated HAPC for juvenile and adult tilefish. Impacts of this alternative on the social and economic aspects of human communities are expected to be neutral relative to the no action alternative, or potentially positive if the modified status quo HAPC becomes the focus for habitat management actions that might otherwise have been applied within the larger, unmodified HAPC. In that case, human activities (e.g., fishing) that may have been unnecessarily constrained in areas not truly "essential" as tilefish habitat would continue. Alternatives 17C and 17D are smaller areas designated as HAPC relative to the no action alternative or alternative 17B. The potential impacts on the social and economic aspects of human communities from alternatives 17C and 17D are also expected to be positive relative to the no action alternative, since they could result in less restricted human activity when compared to the larger status quo HAPC area. This seems much more likely for the two canyon HAPC alternatives since they are much smaller than either alternative 17A or 17B and include a higher proportion of deep,

steep bottom areas on the edge of the continental shelf that are not as accessible to fishing as the shallower, flatter areas on the shelf that make up most of the 17A and 17B areas.

7.17.6 Impacts of Combined HAPC Alternatives

When considering the impacts of any possible combination of continental shelf and canyon HAPC areas (17A + 17C, 17B + 17C, 17A + 17D, or 17B + 17D), any of them would be larger than any of the individual HAPC alternatives. Also, the combination of the status quo HAPC (alternative 17A) with alternative 17D (13 canyons) would be the largest of the four possible combinations and the combination of the modified status quo HAPC (17B) with alternative 17C (four canyons) would be the smallest, with alternatives 17A + 17C and 17B + 17D somewhere in between. Therefore, if the Council have elected to identify the largest possible area as HAPC for juvenile and adult tilefish, alternatives 17A + 17D would had been the best choice, or 17B + 17D under the selected EFH designation (revised). On the other hand, if the Council had wanted to be more conservative and only designate four canyons that are known to contain clay outcrop habitats as HAPCs, but also had wanted to maintain the status quo HAPC, or modified status quo HAPC, then the best choices would had been alternatives 17A + 17C or 17B + 17C.

Under any of these possible combinations, larger HAPC areas would potentially be more beneficial for tilefish EFH if they increase the probability that management actions are taken to minimize the impacts of fishing within them. If management actions are taken to protect EFH within the HAPC areas and they have the added effect of increasing resource productivity, then a larger HAPC could have a positive impact on the managed resource. Potential impacts of a larger HAPC on human communities would most likely be negative if management measures are taken that limit access by fishermen. If no management actions are taken to limit fishing activity within the HAPC areas, then the impacts on all the VECs would be neutral. All the proposed HAPC designation alternatives are located on the outer continental shelf and slope, therefore there is very little probability that designation of any area, regardless of its size, would affect the number of EFH consultations conducted by NMFS or their effectiveness at protecting tilefish EFH from non-fishing activities which are much more prevalent closer to shore.

7.18 Measures to Reduce Gear Impacts on EFH

The management measures addressing gear impacts on EFH for juvenile and adult tilefish were described in section 5.0. For reference purposes, these measures are:

- Alternative 18A: No Action: No GRA
- Alternative 18B: Outer continental shelf/slope HAPC GRA
- **Alternative 18C: GRAs within canyons [Preferred Alternative]**
- Alternative 18D: <u>Considered but rejected for further analysis</u> - EEZ GRA

Alternative 18D which would create an EEZ GRA that would prohibit fishing with bottom otter trawl in the EEZ was considered but rejected for further analysis. This

alternative was considered because of the extensive bottom otter trawling activity that occurs throughout the EEZ. However, alternative 18D was rejected from further analysis because it would result in profound social and economic impacts on fishermen and their communities. No further consideration was given to alternative 18D in the document beyond justification for rejection in section 5.18.D.

The number of alternatives that can be selected to reduce gear impacts on EFH or HAPC for tilefish is not limited to one. In addition, within an alternative such as the proposed tilefish GRAs within Canyons, one, all, or combinations of canyons could be selected.

7.18.1 Impacts on Managed Resource

Under no action alternative 18A, no specific measures to reduce gear impacts on juvenile or adult tilefish EFH would be established under the FMP. This alternative is expected to have neutral to potentially negative impacts on the tilefish resource since nothing would be done to minimize the adverse impacts of current bottom trawling activity on tilefish EFH, thus potentially preventing an increase in resource productivity. If nothing is done to protect vulnerable clay outcrop tilefish habitat in the canyons from trawling impacts, there is also the possibility that bottom trawling activity will expand to include these areas. For additional discussion of the potential impact of this gear type on tilefish habitat see the gear effects evaluation in Appendix E.

Alternative 18B would close the outer continental shelf and slope tilefish HAPC to bottom trawling. This area is being considered because of the extensive bottom trawling activity identified in the overlap analysis (Appendix E) in these two statistical areas. The GRA closure size and shape, which were developed to encompass depth contours, would depend on which EFH designation alternative is selected. A large area would be closed to bottom otter trawling activity, including several canyons areas. This alternative is not expected to have any impact on the managed resource since tilefish would continue to be caught in the area with bottom longlines, the principal gear used in the commercial fishery.

Under alternative 18C (preferred alternative) as many as thirteen canyon areas would be closed to bottom trawling. These areas are being considered because some of the canyons are known to have clay outcrop/pueblo habitats or are steep enough that they could contain clay outcrops. The size and shape of any individual canyon GRA would vary, depending on which EFH designation alternative is selected and the depth range that is associated with each one. The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council also revised the areas associated with the GRAs from what was initially provided in the document. The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat. This alternative would result in potentially positive impacts on the managed resource if the protection it affords to vulnerable tilefish habitat (i.e., clay outcrop/ pueblo habitats)

within one or more of the thirteen canyon GRAs results in an increase in tilefish resource productivity. If resource productivity is unaffected, the impacts would be neutral.

7.18.2 Impacts on Non-target Species

Under no action alternative 18A, no specific measures to reduce gear impacts on juvenile or adult tilefish EFH would be established under the FMP. This alternative is expected to have neutral to potentially negative impacts on non-target species. Impacts could be negative because no GRA would be established to minimize the adverse impacts of bottom trawling on tilefish EFH and exploitation rates on other species would be unaffected, thus making potential increases in resource productivity less likely.

Alternative 18B would close the tilefish HAPC within statistical areas 616 and 537 to bottom trawling. The impacts of this alternative would most likely be neutral for non-target species because reductions in the harvest of non-target species inside the GRA would be offset by increased catches outside the GRA resulting from a displacement of trawling activity. Tables 46-48 show bottom trawling activity in the proposed GRAs discussed in this section.

Alternative 18C (preferred alternative) would close one or more of thirteen canyon areas to bottom trawling. The small size and triangular shape of each of these areas (see figures 8 and 9 in section 5.18.C) and the fact that they are located on the outer continental shelf means that there very little bottom trawling occurs in most of them (see Table 48), and that fishing effort would be easily shifted to nearby open areas. Therefore, it is unlikely that this GRA alternative would have any effect on the quantity of non-target species caught by bottom trawlers operating on the outer continental shelf. Thus, the impacts of this alternative are expected to be neutral.

The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council also revised the areas associated with the GRAs from what was initially provided in the document. The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat.

7.18.3 Impacts on Habitat (Including EFH)

Under no action alternative 18A, no specific measures to reduce gear impacts on juvenile or adult tilefish EFH would be established under the FMP. Maintaining the no action alternative (i.e., not creating a GRA) would afford no protection for vulnerable tilefish EFH from the adverse impacts of current or future bottom trawling activity in submarine canyons on the outer continental shelf and slope, or for EFH for other federally managed species and benthic organisms in the canyons. Therefore, this alternative is expected to have negative impacts on EFH and habitat. Furthermore, failure to take some practicable action to minimize the adverse impacts of fishing on tilefish EFH would be inconsistent

with the conclusions reached in the gear effects analysis in this amendment (see Appendix E).

Alternative 18B would close the outer continental shelf and slope tilefish HAPC to bottom trawling. Due to the large size of this area, this GRA would protect a significant amount of EFH for many managed species from the adverse effects of bottom trawling, not just tilefish. Therefore, it is expected that alternative 18B would positively impact EFH within the GRA. Because it is likely that this closure would cause a significant displacement of bottom trawling activity to other areas outside the GRA, the habitat benefits gained inside the closure would be diminished somewhat by losses in habitat value caused by increased bottom trawling activity outside the GRA. However, it is expected that the net effect would still be positive since it is likely that fishing grounds located outside the GRA where bottom trawling would be expected to increase (as a result of this closure) are already impacted by bottom trawls and dredges, so the additional cumulative effect of more trawling is likely to be minimal. In addition to the large area on the outer continental shelf, this GRA alternative includes a large portion of the upper continental slope and three canyons (Hudson, Block, and Atlantis) where there may be exposed clay outcrops/pueblo village tilefish habitats that have been determined to be highly vulnerable to bottom trawling. Besides tilefish, other species that have designated EFH for benthic life stages (at least one) within the GRA area (under both potential EFH depth ranges) that are moderately to highly vulnerable to bottom otter trawling are: Atlantic sea scallops, black sea bass, ocean pout, red hake, redfish, scup, skates (barndoor, clearnose, little, rosette, smooth, thorny, and winter), summer flounder, witch flounder, and yellowtail flounder.

Under alternative 18C (preferred alternative), one, some, or all thirteen canyon GRAs would be closed to bottom trawling. The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council also revised the areas associated with the GRAs from what was initially provided in the document. The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat.

This alternative (18C) is expected to have positive impacts on EFH within those GRAs since it would protect vulnerable tilefish habitat (clay outcrops), as well as EFH for other species within the selected canyon areas. Other species that have designated EFH for life stages (at least one) within one or all of the GRA canyon areas (under both potential depth ranges) that are moderately to highly vulnerable to bottom otter trawling are: black sea bass, haddock, ocean pout, red hake, redfish, scup, skates (barndoor, clearnose, little, rosette, smooth, thorny, and winter), tilefish, witch flounder, and yellowtail flounder. The GRA canyon closures include thirteen canyons (Norfolk, Washington, Baltimore, Wilmington, Hudson, Block, Atlantis, Veatch, Hydrographer, Oceanographer, Gilbert, Lydonia, and Heezen canyons). Exposed clay outcroppings that provide important habitat for tilefish and other species are known to exist in four of these canyons (Norfolk,

Veatch, Lydonia, and Oceanographer). The positive impacts of this GRA alternative are expected to be greatest in these four canyons because this habitat type has been determined to be the most vulnerable to damage from bottom trawls (see Appendices E and G). The remaining nine canyons are steep enough to expose clay outcrops which could be utilized as pueblo habitat for tilefish (Washington, Baltimore, Wilmington, Hudson, Block, Atlantis, Hydrographer, Gilbert, and Heezen canyons), but to date there is no evidence that this habitat type exists in any of them. Only one of them (Hudson) has been surveyed. This GRA would also provide some additional habitat protection to deep-water coral species that grow on hard substrates in the canyons. Two of the canyons included in this GRA alternative (Lydonia and Oceanographer) have already been closed to vessels in the directed monkfish fishery in order to minimize the impacts of bottom trawling on EFH for other species besides monkfish, and to reduce impacts on highly vulnerable benthic organisms such as sponges and corals. For enforcement purposes, the Lydonia and Oceanographer Canyon GRAs were extended into deeper water in order to overlap with the closures implemented in the monkfish FMP. Closure of these two canyons in this action would extend the habitat benefits of the closures to include bottom trawling activity in all fisheries.

Considering the alternatives relative to one another, GRA alternative 18B would close the largest area; however, it might not afford any protection to vulnerable tilefish habitat (i.e., clay outcrop/pueblo habitats) from bottom trawling activity because none of the canyons in the area are known to have clay outcrops. Hudson Canyon is the major canyon that is located in this area; two others that are included in alternative 18C are Block and Atlantis canyons. A number of submersible surveys were conducted in Hudson Canyon during the 1980s, but no clay outcrops were observed (Able and Muzeni 2002, see section 6.3.2). This habitat type is known to occur in four of the 13 canyons that are included in alternative 18C (Oceanographer, Norfolk, Veatch, and Lydonia), but has not been reported in two other canyons that have been surveyed (Baltimore and Hudson). No survey data were available for the remaining seven canyons included in this alternative (Atlantis, Block, Heezen, Washington, Wilmington, Hydrographer, and Gilbert). Therefore, until more evidence documenting the presence of clay outcrops in other canyons in the region becomes available, closing tilefish HAPC in Oceanographer, Norfolk, Veatch, and Lydonia canyons to bottom trawling would be the most certain and effective way to minimize fishing impacts to tilefish EFH.

7.18.4 Impacts on Endangered and Protected Species

Under no action alternative 18A, no specific measures to reduce gear impacts on juvenile or adult tilefish EFH or HAPC would be established under the FMP. Maintaining the no action alternative (i.e., not creating a GRA) would not directly trigger any action to modify fishing methods and practices in the tilefish fishery or in any other federally managed fishery, or results in changes in the interaction of these fisheries with endangered and protected species. Therefore, alternative 18A is expected to have neutral impacts on endangered and protected species.

Alternative 18B would close the outer continental shelf and slope tilefish HAPC to bottom trawling. A large area would be closed to bottom otter trawling activity, which could result in fewer interactions between endangered and protected species and any bottom trawlers within the GRA. However, there is a large potential for effort displacement which may reduce the magnitude of the positive impacts. Therefore alternative 18B is not expected to result in any impacts on endangered and protected species.

Under alternative 18C (preferred alternative), up to thirteen canyon areas would be closed to bottom trawling. The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council also revised the areas associated with the GRAs from what was initially provided in the document. The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat. This alternative is expected to result in neutral impacts on endangered and protected species as these closures could result in fewer interactions between endangered and protected species and bottom trawlers within those GRAs, but an equal number outside them. The GRAs considered under alternative 18C are small so there is a high potential for effort displacement from those closures into other productive fishing areas, offsetting any potentially positive impacts on endangered and protected species in the GRA areas.

It is difficult to predict the extent to which bottom trawling trips taken within the closure areas would be redirected to other productive fishing areas. It is likely that any redirected trips would be targeting species similar to those targeted within the GRA; however, the location, duration, and extent of these displaced trips are difficult to predict. It is even more difficult to predict how this will affect encounter rates with endangered and protected resources. It is clear however, the numbers of bottom trawling trips taken within these canyon GRAs is very small relative to total number of trips spent bottom otter trawling. For example, the canyon with the highest numbers of trips in 2005 within the proposed GRA (183 trips; Hudson) comprised 0.14% of the total number of bottom otter trawling trips taken in 2005 (131,533 trips). In addition, as indicated above, the Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. Furthermore, the Council also revised the areas associated with the GRAs from what was initially provided in the document. The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. Since, the proposed close areas are small in size and because it has been suggested that much of this fishing activity occurs on the margins of the canyons and not on the steep slopes themselves because fishing gear could be damaged through contact with the canyon walls (James Ruhle, Pers. comm. 2007) the magnitude of the change is not expected to be significant. Therefore, the impact these displaced trips on endangered and protected resources would be expected to be negligible when considered relative to the impacts from the entire bottom trawling fleet in the Northeast.

7.18.5 Social and Economic Impacts

Under the no action alternative 18A, no specific measures to reduce gear impacts on juvenile or adult tilefish EFH would be established under the FMP. Alternative 18A is expected to have neutral short-term social and economic impacts as the current status quo would be maintained. However, there could potentially be longer-term negative socioeconomic impacts if the failure to establish a GRA prevents potential future increases in the productivity and associated fishery yields of managed resources in the region. In the absence of management measures that would protect vulnerable clay outcrop/pueblo habitats, it is also possible that bottom trawling activity could shift into additional areas on the outer continental shelf and slope which may not have been impacted previously.

Alternative 18B would implement a closure to protect tilefish habitat between 70°W and 39°N on the outer continental shelf/slope from bottom trawling. This area is being considered because of the extensive bottom trawling activity identified in the overlap analysis (Appendix E) in these two statistical areas. The GRA closure size and shape, which were developed to encompass depth contours, would depend on which EFH designation alternative is selected. This alternative is expected to have significant short-term negative socioeconomic impacts based on an examination of 2005 vessel trip report data within the proposed closure area. It should be noted that because the data are self reported, there could be errors in the spatial information or reported data resulting from inaccurate reporting, unclear handwriting, or error in transcribing the written information. For example, if the current EFH designation had been maintained between depth contours of 76 and 366 m (250-1200 ft), and 2005 is used to estimate pre-closure fishing effort in the area, there could potentially be losses of $18.3 million dollars in ex-vessel revenue (Table 46). (The total economic impact of closing this area, or any other area, to bottom trawling would of course be much higher, but can not be easily estimated, even assuming that there is no displacement of fishing activity outside the area; the ex-vessel revenue values cited here are only relative measures of the economic importance of each area to the fishing industry). In 2005 there were 1,593 trips with bottom otter trawl gear made in the area proposed to be closed under alternative 18B under the current EFH designation depth range of 76 and 366 m (250-1200 ft; Table 46). If the EFH designation is redefined, which would be a smaller area from 100 to 300 m (328-984 ft), about $15.2 million dollars in ex-vessel revenues could be lost. There were 1,253 trips taken in 2005 with bottom otter trawl gear in the area proposed under alternative 18B at the redefined depth range (Table 46). However, it is unlikely that fishermen will not fish at all and they will likely fish in other areas. It is expected that localized reductions in revenues due to this GRA gear closure are likely to be partially or completely recouped due to an increase in effort outside of the closed area. Effort displacement could, however, increase operating costs for fishermen who are forced to fish in other areas. As such, the lost revenue estimates represent a worst case prediction of the anticipated loss in ex-vessel revenues that would result from closing this area to bottom otter trawling. Under this GRA alternative, the species landed with the greatest ex-vessel revenues within the closure were from monkfish, butterfish, summer flounder, scup, black sea bass, red hake, silver hake, mixed skates, sea scallops, *Loligo* and *Illex* squid, Atlantic mackerel, Atlantic herring (Tables 47 and 48). Nevertheless, whatever the actual economic impact of closing

this large, productive area would be, it clearly would be significant and would exceed the impact of closing any or all of the canyon HAPCs.

Under alternative 18C (preferred alternative), one, some, or all of the thirteen canyon areas described in section 5.18.C would be closed to bottom trawl gear. The size and shape of each GRA would depend on which EFH alternative was selected. For example, if the current EFH designation had been maintained between depth contours of 76 and 366 m (250-1200 ft), and fishing effort is similar to what it was in 2005, there could potentially be maximum losses in ex-vessel revenues of $343, 311 for Washington Canyon GRA (19 trips), $428,605 for Baltimore Canyon GRA (17 trips), $2,016,796 for Wilmington Canyon GRA (40 trips), $2,579,615 for Hudson Canyon GRA (183 trips), $346,687 in Block Canyon GRA (33 trips), $198,015 for Atlantis Canyon GRA (18 trips), $123,728 for Veatch Canyon GRA (9 trips), and $83,368 for Oceanographer Canyon GRA (5 trips) (Table 48). Furthermore, no bottom trawling activity was reported in 2005 in the proposed GRAs in Norfolk, Hydrographer, Gilbert, Lydonia, or Heezen canyons. Because of the small size of the canyon closures, the potential impacts in terms of trips taken and revenue changes would be less based on the narrower redefined EFH depth range of 100 to 300 m (328-984 ft); however these were not explicitly evaluated. In terms of rank, the greatest economic impacts of these gear closures would likely occur from closing the Hudson Canyon GRA, followed by Wilmington Canyon GRA and then Baltimore Canyon GRA. There is therefore a potential for short-term negative socioeconomic impacts of this alternative, unless vessels that would otherwise trawl in a closed area (or areas) would simply move into open areas without any significant loss in catch-per-unit-effort. In that case, the impacts would be neutral. Across all proposed canyon GRAs, the species landed with the greatest ex-vessel revenues within the closures were from summer flounder, black sea bass, scup, Atlantic herring, *Loligo* and *Illex* squid, and silver hake (Tables 47 and 48). Over the long-term, it is possible that a prohibition on bottom trawling in these areas would have positive socioeconomic impacts if the reduction in habitat impacts for tilefish and other managed species results in an increase in resource productivity and associated fishery yields.

The ex-vessel values associated with landings in the various GRAs discussed above are based on VTR (logbooks) landings data for 2005. VTR landings data was used because it contains trip-level information for landings by species and fishing location (latitude and longitude as well as statistical area). Landings (lb of fish) in the proposed GRAs generated from VTR data were multiplied by the 2005 average ex-vessel value by species derived from the weighout data. This provided an estimation of the ex-vessel value generated in the proposed GRAs in 2005. It is important to mention that it is likely that errors in these estimates exist. This is due to the fact that the VRT data is not collected at the necessary resolution scale for this type of analysis. Nevertheless, these values provide an overall view of the activity level in the proposed GRAs.

As indicated above, the Council chose 18C as its preferred alternative. Under alternative 18C, the Council had to decide which canyons to select for GRA designation. That is, the Council could have selected to close one, some, or all of the following 13 canyons. The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council

also revised the areas associated with the GRAs from what was initially provided in the document. The proposed GRAs in these canyons (revised four canyon areas) are shown in Executive Summary Figures ES-1 through ES-3 and in Appendix E (Figures A20a for Oceanographer and Lydonia, A22a for Veatch, and A36a for Norfolk). In addition, coordinates for the associated closures are shown in Table 2. A practicability analysis (see section 7.18.6) concluded that alternative 18B is not practicable because it does not contain any known areas of highly vulnerable tilefish habitat and it has a high economic value as a bottom trawling area. Two of the canyon GRAs included as options in alternative 18C are also not practicable. Four canyons GRA areas in this alternative (these are the four canyons selected for GRAs by the Council) are ranked as practicable (high) and seven as practicable (low). The proposed closed areas under the chosen preferred alternative are smaller than those first analyzed under the practicability analysis (see section 7.18.6). As such, it is expected that changes in ex-revenues associated with the proposed closures would be the same or smaller than those described under the practicability analysis.

As previously indicated, the Council selected GRAs around the mouth of the four canyons on the outer continental shelf and slope that are known to have clay outcrop/pueblo habitats (Norfolk, Veatch, Lydonia, and Oceanographer). The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons (Appendix E Figures A20 for Oceanographer and Lydonia, A22 for Veatch, and A36 for Norfolk) could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat and have large adverse economic impacts.

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Table 46. Landings and ex-vessel revenues based on 2005 vessel trip reports in the status quo and modified status quo outer continental shelf/slope HAPC GRAs.

		Status quo (EFH at 76-366 meters)		Modified status quo (EFH at 100-300 meters)	
	No. of trips	N=1593		N=1253	
Species	Price per lb[a] ($)	Landings (lb)	Value ($)	Landings (lb)	Value ($)
monkfish	1.92	156,100	299,208	126,953	243,340
bluefish	0.37	22,484	8,338	16,553	6,139
butterfish	0.82	211,559	173,215	192,785	157,843
cod	1.76	714	1,255	644	1,132
Atlantic croaker	0.30	7	2	7	2
cusk	0.61	6	4	0	0
black drum	0.33	82	27	0	0
blueback herring	0.35	2,260	790	2,100	734
conger eel	0.47	653	310	613	291
unknown eel	0.38	895	339	846	320
winter flounder	1.32	10,651	14,076	6,191	8,182
summer flounder	1.63	3,305,428	5,383,915	2,177,068	3,546,030
witch flounder	1.51	4,006	6,038	501	755
yellowtail flounder	1.17	4,137	4,845	3,407	3,990
American plaice	1.35	1,500	2,020	1,500	2,020
sand-dab flounder	0.50	647	322	157	78
fourspot flounder	0.66	2,792	1,852	155	103
haddock	1.30	9	12	9	12
red hake	0.49	231,634	113,560	181,926	89,191
white hake	1.12	27,117	30,361	19,857	22,232
hake (mix)	0.56	445	249	350	196
Atlantic herring	0.09	236,451	21,852	231,351	21,381
john dory	0.68	53,055	35,901	51,764	35,027
king whiting	1.03	69,818	72,206	69,653	72,035
lumpfish	0.22	195	43	130	28
Atlantic mackerel	0.12	2,320,957	274,951	2,070,023	245,224
redfish	0.58	540	311	500	288
pollock	0.62	37	23	37	23
scup	0.75	2,462,352	1,853,144	2,099,512	1,580,074
unknown seatrout	0.83	517	428	502	416
black sea bass	2.48	137,232	339,818	108,238	268,022
sea robins	0.19	1,525	297	985	192
squeteague weakfish	0.97	8,357	8,111	6,868	6,666
spotted weakfish	1.33	3,277	4,355	2,543	3,380
American shad	0.88	30	26	13	11
smooth dogfish	0.57	1,060	602	848	482
spiny dogfish	0.21	3,365	695	2,765	571

[a] 2005 average price per lb from Maine through Virginia.

Table 46 (continued). Landings and ex-vessel revenues based on 2005 vessel trip reports in the status quo and modified status quo outer continental shelf/slope HAPC GRAs.

		Status quo (EFH at 76-366 meters)		Modified status quo (EFH at 100-300 meters)	
	No. of trips	N=1593		N=1253	
Species	**Price per lb[a] ($)**	**Landings (lb)**	**Value ($)**	**Landings (lb)**	**Value ($)**
skates (mix)	0.44	743,778	327,819	381,214	168,020
little skate	0.08	123,377	9,595	39,427	3,066
big skate	0.40	2,227	894	177	71
barndoor skate	0.46	85	39	0	0
spanish mackerel	1.20	1,000	1,196	1,000	1,196
swordfish	3.54	21,370	75,705	21,370	75,705
tautog	1.97	18	35	0	0
blueline tilefish	1.46	45	66	40	58
golden tilefish	2.49	22,350	55,735	21,794	54,349
tilefish	2.38	455	1,082	455	1,082
triggerfish	1.20	5	6	5	6
black whiting	0.48	60,302	29,118	32,652	15,766
silver hake	0.53	3,567,141	1,900,413	3,272,396	1,743,386
wolfishes	0.67	300	200	300	200
blue crab	0.62	50	31	0	0
jonah crab	0.05	421	20	416	19
rock crab	0.44	940	412	315	138
unknown crab	1.14	70	80	0	0
lobster	5.05	2,402	12,127	1,535	7,749
sea scallop	7.66	70,652	541,456	69,869	535,455
loligo squid	0.77	9,157,108	7,072,937	8,618,037	6,656,560
illex squid	0.32	209,811	68,056	207,291	67,239
unknown squid	0.78	1,147	892	1,147	892
2005 Total			**$18,269,060**		**$15,238,915**

[a] 2005 average price per lb from Maine through Virginia.

Table 47. Landings and ex-vessel revenues based on 2005 vessel trip reports in the proposed Washington, Baltimore, Wilmington, and Hudson Canyon GRAs.

		Washington Canyon GRA		Baltimore Canyon GRA		Wilmington Canyon GRA		Hudson Canyon GRA	
	No. of trips	N=19		N=17		N=40		N=183	
Species	Price per lb ($)	Landings (lb)	Value ($)	Landings (lb)	Value ($)	Landings (lb)	Value ($)	Landings (lb)	Value ($)
monkfish	1.92	1,926	3,692	1,047	2,007	2,268	4,347	4,211	8,072
bluefish	0.37	7,023	2,604	458	170	2,800	1,038	2,297	852
butterfish	0.82	65	53	0	0	1,400	1,146	54,355	44,503
Atlantic croaker	0.30							7	2
cod	1.76	0	0	0	0	0	0	0	0
blueback herring	0.35							600	210
conger eel	0.47							128	60
unkown eel	0.38							257	98
winter flounder	1.32	0	0	0	0	0	0	47	62
summer flounder	1.63	162,901	265,335	78,936	128,572	228,518	372,212	83,265	135,623
witch flounder	1.51	0	0	0	0	0	0	0	0
yellowtail flounder	1.17	0	0	0	0	0	0	0	0
American plaice	1.35	0	0	0	0	0	0	0	0
fourspot flounder	0.66							35	23
haddock	1.30	0	0	0	0	0	0	0	0
red hake	0.49	0	0	0	0	0	0	12,164	5,964
white hake	1.12	0	0	0	0	0	0	1,500	1,679
Atlantic herring	0.09	0	0	0	0	0	0	150,120	13,874
john dory	0.68	0	0	0	0	0	0	17,254	11,675
king whiting	1.03	0	0	0	0	0	0	7,109	7,352
lumpfish	0.22	0	0	0	0	0	0	0	0

[a] 2005 average price per lb from Maine through Virginia.

Table 47 (continued). Landings and ex-vessel revenues based on 2005 vessel trip reports in the proposed Washington, Baltimore, Wilmington, and Hudson Canyon GRAs.

		Washington Canyon GRA		Baltimore Canyon GRA		Wilmington Canyon GRA		Hudson Canyon GRA	
	No. of trips	N=19		N=17		N=40		N=183	
Species	**Price per lb ($)**	**Landings (lb)**	**Value ($)**	**Landings (lb)**	**Value ($)**	**Landings (lb)**	**Value ($)**	**Landings (lb)**	**Value ($)**
Atlantic mackerel	0.12	0	0	0	0	0	0	670,544	79,436
pollock	0.62							37	23
scup	0.75	1,242	935	39	29	237	178	189,743	142,799
unknown seatrout	0.83	0	0	0	0	0	0	35	29
black sea bass	2.48	23,492	58,172	2,032	5,032	32,106	79,502	8,603	21,303
sea robins	0.19							10	2
squeteague weakfish	0.97	29	28	0	0	0	0	964	936
spotted weakfish	1.33							119	158
spiny dogfish	0.21							75	16
skates (mix)	0.44	0	0	0	0	0	0	75	33
little skate	0.08							60	5
blueline tilefish	1.46	20	29	0	0	0	0	0	0
golden tilefish	2.49	0	0	0	0	5	12	2,584	6,444
black whiting	0.48	0	0	0	0	0	0	660	319
silver hake	0.53	0	0	0	0	0	0	224,325	119,510
lobster	5.05	0	0	0	0	0	0	299	1,510
sea scallop	7.66	1,376	10,545	116	889	600	4,598	200	1,533
loligo squid	0.77	2,392	1,848	45,112	34,844	1,524,757	1,177,720	2,523,980	1,949,519
illex squid	0.32	0	0	792,500	257,063	1,159,300	376,041	80,135	25,993
unknown squid	0.78	90	70	0	0	0	0	0	0
2005 Total			**$343,311**		**$428,605**		**$2,016,796**		**$2,579,615**

[a] 2005 average price per lb from Maine through Virginia.

Table 48. Landings and ex-vessel revenues based on 2005 vessel trip reports in the proposed Block, Atlantis, Veatch, and Oceanographer Canyon GRAs.

		Block Canyon GRA		Atlantis Canyon GRA		Veatch Canyon GRA		Oceanographer Canyon GRA	
	No. of trips	N=33		N=18		N=9		N=5	
Species	Price per lb ($)	Landings (lb)	Value ($)	Landings (lb)	Value ($)	Landings (lb)	Value ($)	Landings (lb)	Value ($)
monkfish	1.92	4,700	9,009	3,670	7,035	625	1,198	2,050	3,929
bluefish	0.37	10	4	0	0	0	0	0	0
butterfish	0.82	1,780	1,457	2,705	2,215	4,957	4,059	2,800	2,293
Atlantic croaker	0.30								
cod	1.76	0	0	0	0	0	0	600	1,055
blueback herring	0.35								
conger eel	0.47								
unkown eel	0.38								
winter flounder	1.32	0	0	0	0	0	0	2,010	2,656
summer flounder	1.63	37,962	61,833	23,024	37,502	2,946	4,798	2,500	4,072
witch flounder	1.51	115	173	0	0	0	0	900	1,357
yellowtail flounder	1.17	0	0	0	0	0	0	5,150	6,031
American plaice	1.35	1,500	2,020	0	0	0	0	550	741
fourspot flounder	0.66								
haddock	1.30	0	0	0	0	0	0	13,000	16,946
red hake	0.49	7,037	3,450	193	95	895	439	800	392
white hake	1.12	1,012	1,133	3,500	3,919	0	0	0	0
Atlantic herring	0.09	600	55	0	0	0	0	0	0
john dory	0.68	17	12	92	62	1,214	821	0	0
king whiting	1.03	2,015	2,084	4,500	4,654	0	0	0	0
lumpfish	0.22	130	28	0	0	0	0	0	0

[a] 2005 average price per lb from Maine through Virginia.

Table 48 (continued). Landings and ex-vessel revenues based on 2005 vessel trip reports in the proposed Block, Atlantis, Veatch, and Oceanographer Canyon GRAs.

		Block Canyon GRA		Atlantis Canyon GRA		Veatch Canyon GRA		Oceanographer Canyon GRA	
	No. of trips	N=33		N=18		N=9		N=5	
Species	**Price per lb ($)**	**Landings (lb)**	**Value ($)**	**Landings (lb)**	**Value ($)**	**Landings (lb)**	**Value ($)**	**Landings (lb)**	**Value ($)**
Atlantic mackerel	0.12	8,022	950	0	0	28	3	3,000	355
pollock	0.62								
scup	0.75	0	0	0	0	0	0	0	0
unknown seatrout	0.83	120	99	0	0	0	0	0	0
black sea bass	2.48	3,074	7,612	0	0	140	347	0	0
sea robins	0.19								
squeteague weakfish	0.97	97	94	0	0	5	5	0	0
spotted weakfish	1.33								
spiny dogfish	0.21								
skates (mix)	0.44	25	11	18,840	8,304	0	0	0	0
little skate	0.08								
blueline tilefish	1.46	0	0	0	0	0	0	0	0
golden tilefish	2.49	266	663	513	1,279	516	1,287	0	0
black whiting	0.48	0	0	2,200	1,062	0	0	0	0
silver hake	0.53	139,809	74,484	751	400	2,771	1,476	80,000	42,620
lobster	5.05	140	707	0	0	0	0	0	0
sea scallop	7.66	0	0	0	0	0	0	100	766
loligo squid	0.77	234,086	180,808	170,235	131,489	141,500	109,294	200	154
illex squid	0.32	0	0	0	0	0	0	0	0
unknown squid	0.78	0	0	0	0	0	0	0	0
2005 Total			**$346,687**		**$198,015**		**$123,728**		**$83,368**

[a] 2005 average price per lb from Maine through Virginia.

7.18.6 Practicability Analysis

The MSFMCA provisions state that an FMP must "minimize to the extent practicable adverse effects on such habitat caused by fishing." The EFH regulations at 50 CFR 600.815(a)(2)(iii) provide guidance on evaluating practicability which states, "In evaluating the practicability of the identified habitat management measures, Council should consider the nature and extent of the adverse effect on EFH and the long and short-term costs and benefits of potential management measures to EFH, associated fisheries and the nation consistent with National Standard 7. In determining whether management measures are practicable, Councils are not required to perform a formal cost/benefit analysis."

A practicability analysis weighs the economic and social costs (and benefits) against the benefits to habitat of EFH protections. It is therefore very difficult to make direct quantitative comparisons and hence give specific quantified answers to questions of practicability when the ecological values of habitat, and associated impacts on resource productivity, cannot be readily quantified. There is also uncertainty in the direct effects of fishing gears on habitat function and the lack of information on the relationships between habitat function and the productivity of managed and non-managed species. Given these difficulties, NMFS has not identified a preferred methodology for conducting the practicability analysis; therefore, the practicability analysis that is presented here is an attempt to qualitatively weigh the information presented in the analysis of impacts (see section 7.18). Following the style of other practicability analyses conducted for FMPs within the region, three primary components have been extracted from the full analysis to help determine the practicability of the alternatives. These components are:

1) *net economic change to the fishery* – this considers the long and short-term costs and benefits of these management measures to associated fisheries and the nation
2) *differences in EFH value* – this considers the nature and extent of the adverse impact on EFH and the long and short-term costs and benefits to EFH (direct)
3) *population effects and ecosystem changes* – this considers the long and short-term costs and benefits to potential management measures on EFH (indirect)

There are two action alternatives under consideration to mitigate/prevent impacts of bottom trawling on clay outcrop/pueblo habitats in the walls of certain deep-sea canyons on the continental slope which are considered to be particularly vulnerable to the effects of bottom trawling and dredging (see sections 6.3.2, 7.18.3, and Appendix E). Therefore, these two alternatives (alternatives 18B and 18C; described in sections 5.18.B and 5.18.C) have been evaluated relative to the four primary components of a practicability analysis. A summary of this information is given in Tables 49 and 50, although specific sections of this EIS should be referenced for additional detail.

Due to its potentially high economic and social impacts, alternative 18B is not considered practicable. Furthermore, it would only minimize the adverse impacts of fishing on tilefish EFH in three canyon areas that are not known to contain clay outcrops (Table 49). In fact, this habitat type has not been reported in Hudson Canyon even though vertical

tilefish burrows are very common there (see section 6.3.2). It is not practicable to close two of the canyon areas included in alternative 18C (Wilmington and Hudson) because of their relatively high economic value (more than $2 million in ex-vessel revenues in 2005) as bottom trawling areas. Furthermore, available survey data for Hudson Canyon indicates that it does not include any clay outcrops; no survey data are available for Wilmington Canyon. Of the remaining 11 canyon areas that are included as options in alternative 18C, it is highly practicable to prohibit bottom trawling in the four canyon areas that are known to contain clay outcrop/pueblo habitats (Norfolk, Veatch, Lydonia, and Oceanographer). It would also be practicable to establish GRAs in the other seven canyons that are not known to have this type of vulnerable tilefish habitat, but they might be less effective. No bottom trawling activity was reported in four of these seven canyon areas in 2005; in the other three, gross revenues were under $500,000 (Table 50). The practicability of establishing tilefish GRAs in Oceanographer and Lydonia canyons is further enhanced by the fact that they are the same areas that have already been closed to trawling under monkfish days to minimize adverse impacts of the monkfish fishery on EFH.

The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons (alternative 18C) to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council also revised the areas associated with the GRAs from what was initially provided in the document. The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons (Appendix E Figures A20 for Oceanographer and Lydonia, A22 for Veatch, and A36 for Norfolk) could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat. The proposed closed areas under the chosen preferred measure to reduce gear impacts on EFH (alternative 18C) are smaller than those first analyzed under the practicability analysis (see section 7.18.6). As such, it is expected that changes in ex-revenues associated with the proposed closures would be the same or smaller than those described under the practicability analysis. The proposed GRAs in these canyons (revised four canyon areas) are shown in Executive Summary Figures ES-1 through ES-3 and in Appendix E (Figures A20a for Oceanographer and Lydonia, A22a for Veatch, and A36a for Norfolk). In addition, coordinates for the associated closures are shown in Table 2.

Table 49. The practicability of alternative 18B relative to three primary components of the analysis.

Alternative 18B: Outer continental shelf/slope GRA		
Primary Components	**Status quo (EFH at 76-366 meters)**	**Modified status quo (EFH at 100-300 meters)**
Net economic change to the fishery	Upper limit on reduction in gross revenues to fisheries that use bottom trawls in closure: $18.3 million dollars; see section 7.18.5 of this EIS	Upper limit on reduction in gross revenues to fisheries that use bottom trawls in closure: $15.2 million dollars; see section 7.18.5 of this EIS
Differences in EFH value	Uncertain benefits to most vulnerable tilefish habitat type (clay outcrop/pueblo habitats) because it is not known to occur in area; direct benefits for other managed species with EFH that is vulnerable to trawling and dredging activity, and indirect benefits to structure-forming benthic organisms, including deep sea corals; see section 7.18.3 of this EIS and Appendix E	Uncertain benefits to most vulnerable tilefish habitat type (clay outcrop/pueblo habitats) because it is not known to occur in area; direct benefits for other managed species with EFH that is vulnerable to trawling and dredging activity, and indirect benefits to structure-forming benthic organisms, including deep sea corals; see section 7.18.3 of this EIS and Appendix E
Population effects and ecosystem changes	No benefits for managed resource because longline fishery will continue; reduced harvest and potential long-term increase in resource productivity for other managed species; see section 7.18.3 of this EIS and Appendix E	No benefits for managed resource because longline fishery will continue; reduced harvest and potential long-term increase in resource productivity for other managed species; see section 7.18.3 of this EIS and Appendix E
Due to the significant economic impacts of this alternative and its questionable value for protecting tilefish "pueblo village" habitat, it is not considered practicable at this time.		

Table 50. The practicability of the canyon GRAs relative to three primary components of the analysis

Alternative 18C: Alternative may include one, some, or all of the canyon GRAs							
Primary Components	**Norfolk Canyon GRA**	**Washington Canyon GRA**	**Baltimore Canyon GRA**	**Wilmington Canyon GRA**	**Hudson Canyon GRA**	**Block Canyon GRA**	**Atlantis Canyon GRA**
Net economic change to the fishery	Upper limit on reduction in gross revenues to fisheries that use bottom otter trawls in closure; see section 7.18.5 of this EIS						
	$0	$343,311	$428,605	$2,016,796	$2,579,615	$346,687	$198,015
Differences in EFH value	Benefits other species with EFH that is vulnerable to trawling activity, and deep sea corals; see section 7.18.3 of this EIS and Appendix E						
	Protect canyons with known pueblo habitat/clay outcrops for tilefish	Protect potentially vulnerable tilefish habitat in canyons that may contain pueblo habitat/clay outcrops					
Population effects and ecosystem changes	Potential long-term benefits on resource productivity for tilefish and other species with EFH that is vulnerable to bottom otter trawling in the gear restricted closure area, including sensitive habitat types and species within the canyons such as deep sea corals; See section 7.18.3 of this EIS and Appendix E						
Practicable	Yes (high)	Yes (low)	Yes (low)	No	No	Yes (low)	Yes (low)

Table 50 (continued). The practicability of the canyon GRAs relative to three primary components of the analysis.

Alternative 18C: Alternative may include one, some, or all of the Canyon GRAs						
Primary Components	**Veatch Canyon GRA**	**Hydrographer Canyon GRA**	**Oceanographer Canyon GRA**	**Gilbert Canyon GRA**	**Lydonia Canyon GRA**	**Heezen Canyon GRA**
Net economic change to the fishery	Upper limit on reduction in gross revenues to fisheries that use bottom otter trawls in closure; see section 7.18.5 of this EIS					
	$123,728	$0	$83,368	$0	$0	$0
Differences in EFH value	Benefits other species with EFH that is vulnerable to trawling activity, and deep sea corals; see section 7.18.3 of this EIS and Appendix E					
	Protect canyons with known pueblo habitat/clay outcrops for tilefish	Protect canyons areas that may contain vulnerable tilefish habitat type	Protect canyons with known pueblo habitat/clay outcrops for tilefish	Protect canyons areas that may contain vulnerable tilefish habitat type	Protect canyons with known pueblo habitat/clay outcrops for tilefish	Protect canyons areas that may contain vulnerable tilefish habitat type
Population effects and ecosystem changes	Potential long-term benefits on resource productivity for tilefish and other species with EFH that is vulnerable to bottom trawling in the gear restricted closure area, including sensitive habitat types and species within the canyons such as deep sea corals; See section 7.18.3 of this EIS and Appendix E					
Practicable	Yes (high)	Yes (low)	Yes (high)	Yes (low)	Yes (high)	Yes (low)

OTHER ISSUES

7.19 Methods for collecting royalties under a Tilefish IFQ system

The management measures addressing the collection of royalties under a Tilefish IFQ system were described in section 5.0. For reference purposes, these measures are:

- **Alternative 19A: No Action (Collection of royalties would not be implemented for the initial, or any subsequent, distribution of allocations in the tilefish IFQ program)**
- Alternative 19B: A per-unit fee would be assessed on tilefish IFQ allocations if an IFQ program is put in place for the commercial tilefish fishery. IFQ shareholder directly pays
- Alternative 19C: A percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder directly pays
- Alternative 19D: A Percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder pays via a federally permitted dealer
- Alternative 19E: Considered but rejected for further analysis - Implement an auction system for the collection of royalties if an IFQ program is put in place for the commercial tilefish fishery

Alternative 19E was considered but rejected for further analysis. Alternative 19D was rejected from further analysis because the Council considered that given the nature of the tilefish fishery (limited number of fishery participants, small number of ports of landings, and small overall quota) potential collusion among fishery participants could occur. This will in turn not allow for efficient price discovery and could potential limit the amount of royalties collected to a level below the administrative cost of implementing the royalty collection system. Lastly, the Council was concern that an auction system could prevent the participation of individuals with limited access to capital. No further consideration was given to alternative 18D in the document beyond justification for rejection in section 5.19.D.

7.19.1 Impacts on Managed Resource

The discussion regarding the condition of the tilefish fishery (i.e., condition of the stock relative to the biological reference points) presented in section 7.1.1 also apply here.

Under alternative 19A (preferred alternative), a royalty collection system would not be implemented if an IFQ program is put in place for the commercial tilefish fishery. Alternatives 19B through 19D are purely administrative in nature as they deal with the establishment of a fee, paid by an IFQ holder, in order to recover the costs for the management, data collection and analysis, and enforcement of the IFQ program. As a result, impacts resulting from this alternative are not likely to affect the physical or biological environment.

The alternatives discussed in this section are purely administrative; therefore, they are not expected to result in biological impacts on the tilefish stock.

7.19.2 Impacts on Non-target Species

The overall discussion regarding the nature and extent of non-target species discarding by the directed tilefish fishery presented in section 7.1.2 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices or the interaction of this fishery with non-targeted species.

7.19.3 Impacts on Habitat (Including EFH)

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to have adverse impacts to the marine habitats or EFH.

7.19.4 Impacts on Endangered and Protected Species

The information describing fishing gears used in the commercial and recreational tilefish fisheries presented in section 7.1.3 also apply here.

The actions considered under these alternatives are purely administrative; therefore, they are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort and are not expected to result in positive or negative impacts to endangered or protected species.

7.19.5 Social and Economic Impacts

Under alternative 19A (preferred alternative), a royalty collection system would not be implemented if an IFQ program is put in place for the commercial tilefish fishery. Under alternative 19B, a per-unit fee royalty would be assessed on tilefish IFQ allocations if an IFQ program is put in place for the commercial tilefish fishery. IFQ shareholders would directly pay the royalty fee under alternative 19B. Under alternatives 19C and 19D a percent royalty fee would be assessed on the landed value of harvested fish under an IFQ system for the commercial tilefish fishery. Under alternative 19C, the IFQ shareholder directly pays the royalty fees and under alternative 19D, IFQ shareholder pays the royalty fees via a federally permitted dealer. Responsibility for fee billing, collection, and submission (e.g., IFQ shareholder, dealer), calculation of percentage of ex-vessel value of

tilefish to be collected, and other payment compliances will depend on the selected alternative (see section 5.19).

The amount and timing of the fees collected via a royalty system would depend on various factors. Under alternative 19B, the amount of royalty fees that an IFQ shareholder has to pay would depend on the royalty fee level and the amount of IFQ shares allocated to that specific IFQ shareholder. The IFQ permit holder would be responsible for self-collecting his or her own fee liability for all his or her IFQ share allocation. The IFQ permit holder would be responsible for submitting this payment to NMFS in order to receive their annual IFQ permit. Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. Under this alternative, the per-unit fee would be based on a specific dollar value per unit of IFQ allocation. While the specific per-unit fee assessment has not been determined, a $0.05 per-unit (pound of IFQ allocation) fee is used to illustrate royalty calculations in this section. The level of the fee to be paid could be based on a specific revenue target. The level of the fee may be change by managers as conditions in the fishery change. If an IFQ fisherman receives an IFQ share allocation of 10,000 lb (4,536 kg). The IFQ permit holder would bear a total royalty fee liability of $ 500.00, determined as follows: (pounds of tilefish IFQ allocation X per-unit fee) = permit holder fee (10,000 lb x $ 0.05 = $ 500.00). An IFQ shareholder would have to pay higher royalty fees as the per-unit fee level increases for a given number of IFQ share allocation. The total royalty fees pay by an IFQ shareholder would increase as the per-unit royalty fee level and/or the IFQ shareholder allocation increases.

Under alternatives 19C and 19D, a percent fee would be assessed on the landed value of harvested fish under an IFQ system for the commercial tilefish fishery. Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance.

The overall fee to be paid by commercial tilefish fishermen would depend on how many permit categories are managed via IFQ system, the royalty percent fee on landed value of harvested fish, and the amount of fish harvested by IFQ permit holders. Based on a TAL of 1.995 million pounds of tilefish, a 2005 coastwide average ex-vessel price for all market categories of $2.48 per pound, and a royalty fee of 2-percent; the total annual fee expected to be collected by the program would be $94,004 under an IFQ system for all permit categories (assuming that the entire tilefish quota is landed).

Assuming 2005 tilefish landings and ex-vessel price, the potential cost to fishermen associated with the royalty system under alternatives 19C and 19D could range from approximately $8,500 to $19,500 for full-time tier 1 vessels. For part-time vessels the costs associated with a 2-percent royalty fee could range from approximately $7 to $4,200. Fees and cost recovery values associated full-time tier 2 vessels are not included for confidentiality issues. The overall net cost per vessel associated with a tilefish royalty collection program would depend on the royalty fee implemented, the amount and value of tilefish landed, and any other potential costs associated with paying the fee (e.g., time to compile information and complete paperwork associated with payment of fees). It is

expected that producer surplus would decrease by the amount of fee plus any other potential costs associated with paying the fee (e.g., time and materials required for completing the paperwork and paying the fee).

Alternatives 19B through 19D are expected to have negative socioeconomic impacts compared to alternative 6A as fishermen revenues could potentially decrease by the royalty fee collected by the NMFS. The royalty fees used in this section are for illustrative purposes only. Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. The level of the fee to be paid could be based on a specific revenue target, a percentage of the value of the fishing privilege, or a fee level equal to a percentage of the average value of harvested fish over some historical time period. Regardless of the methodology used to collect fees under a per-unit fee collection strategy, the larger the amount of fishing privileges a fishery participant holds, the higher the overall royalty payment for that participant. Conversely, the higher the amount of fish harvested and ex-vessel prices, the larger the overall amount of royalty collected under a royalty fee assessed on the landed value of harvested fish.

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8.0 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the CEQ (40 CFR Part 1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed tilefish fishery.

8.1 Consideration of the VECs

In section 6.0 (Description of the Affected Environment), the valued ecosystem components (VECs) that exist within the tilefish fishery environment are identified, and the basis for their selection is established. The significance of the cumulative effects will be discussed in relation to the VECs listed below.

1. Managed resource - golden tilefish stock
2. Non-target species
3. Habitat including EFH for the managed resource and non-target species
4. Endangered and protected species
5. Human communities (social and economic)

8.2 Geographic Boundaries

The analysis of impacts focuses primarily on actions related to the harvest of tilefish. The core geographic scope for the managed resource, non-target species, habitat, and endangered and protected species can be considered the overall range of these VECs in the Western Atlantic Ocean (Figure 10 in section 6.0). For human communities, the core geographic boundaries are defined as those U.S. fishing communities directly involved in the harvest or processing of the managed resource, which were found to occur in coastal states from Maine through Virginia (see section 6.5).

8.3 Temporal Boundaries

The temporal scope of past and present actions for the *managed resource, non-target species, habitat and human communities* is primarily focused on actions that have occurred since tilefish FMP implementation (2001). These value ecosystem components were discussed in section 6.0. For *endangered and other protected species*, the scope of past and present actions is on a species-by-species basis (see section 6.4) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs, which includes the measures proposed by this amendment, extends five years into the future following the expected implementation in 2009 (i.e., ~2014). This period was chosen because the dynamic nature

of resource management and lack of information on projects that may occur in the future makes it difficult to predict impacts beyond this timeframe with any certainty.

8.4 Actions Other Than Those Proposed in this Amendment

Table 51 below presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions to be considered other than those actions being considered in this amendment document. These impacts are described qualitatively as the actual impacts of these actions are too complex to be quantified in a meaningful way. When any of these abbreviations occur together (i.e., P, Pr, RFF), it indicates that some past actions are still relevant to the present and/or future actions.

The overall impacts of these actions (P, Pr, RFF) are summarized in Table 51 and discussed below. These impacts, in addition to the impacts of the management actions being developed in this document (see Table ES-2) and the CEA baseline conditions (Table 53) comprise the total cumulative effects that will contribute to the significance determination for each of the five VECs exhibited later in Table 59.

Past and Present Actions

The historical management practices of the Council (described in section 4.1) have resulted in positive impacts on the health of the tilefish stock. The FMP established TALs as the primary control on fishing mortality. The FMP also implemented a limited entry program and a tiered commercial quota allocation of the TAL. Other elements of the FMP included: a stock rebuilding strategy; permits and reporting requirements for commercial vessels, operators, and dealers; and a framework adjustment process. A "benchmark" stock assessment conducted at the NEFSC sponsored SARC/SAW every three years from which the specifics of the B_{MSY}, F_{MSY}, and other biological reference points could change which thus could warrant changes in the actual TAL. The strategy itself would not change, in that the 10 year rebuilding duration, with 50 percent probability of achieving the B_{MSY} target, and the TAL are the measures used by the Committee and Council to get to the target. In addition, the annual specifications process is intended to provide the opportunity for the Council and NMFS to regularly assess the status of the fishery and to make necessary adjustments to ensure that there is a reasonable expectation of meeting the objectives of the FMP and the targets associated with the rebuilding programs under the FMP. The statutory basis for Federal fisheries management is the Magnuson-Stevens Act. That act, as amended by the SFA in 1996, promotes long-term positive impacts on the environment through National Standards included in the Act. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future Federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can often have negative short-term socio-economic impacts. These impacts are usually necessary to bring about long-term sustainability of a given resource, and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the tilefish stock.

Non-fishing activities that introduce chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment pose a risk to the identified VECs either directly or indirectly. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include, but are not limited to, offshore mineral and oil exploration and extraction, agriculture, marine transportation, and offshore disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality, and as such, may indirectly constrain the sustainability of the managed resource, non-target species, and protected species. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities. The overall impact to the affected species and habitats on a population level is unknown, but likely neutral to low negative (except for offshore mineral and oil exploration and extraction), since a large portion of this species has a limited or minor exposure to these local non-fishing perturbations. When offshore mineral and oil exploration and extraction activities are considered, the impacts are likely to be higher as a large portion of the species could potentially have a larger exposure to this type of non-fishing perturbations.

In addition to guidelines mandated by the MSFCMA, NMFS reviews these types of effects through the review process required by section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act for certain activities that are regulated by Federal, state, and local authorities. The jurisdiction of these activities is in "waters of the U.S." and includes both riverine and marine habitats.

Reasonably Foreseeable Future Actions

In terms of RFF actions that relate to the federally managed tilefish fishery (Table 51), several warrant additional discussion. In order for many of the non-fishing actions proposed in Table 51 to be permitted under other Federal agencies (such as beach nourishment, offshore wind facilities, etc.), those agencies would conduct examinations of potential biological, socioeconomic, and habitat impacts. The MSFCMA (50 CFR Part 600.930) imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. The eight Fishery Management Councils are engaged in this review process by making comments and recommendations on any Federal or state action that may affect habitat, including EFH, for their managed species and by commenting on actions likely to substantially affect habitat, including EFH.

In addition, under the Fish and Wildlife Coordination Act (section 662), “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license, such department or agency first shall consult with the United

States Fish and Wildlife Service, Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular State wherein the" activity is taking place. This act provides another avenue for review of actions by other Federal and state agencies that may impact resources that NMFS manages in the reasonably foreseeable future.

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Table 51. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this amendment).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr Original FMP (2001)	Established comprehensive commercial management measures	**Indirect Positive** Regulatory tool available to rebuild and manage the stock	**Potentially Indirect Positive** Reduced fishing effort	**Potentially Indirect Positive** Reduced fishing effort	**Potentially Indirect Positive** Reduced fishing effort	**Indirect Positive** Benefits derived from rebuilding and managing the stock
P, Pr, RFF Offshore mineral and oil exploration and extraction	Geophysical exploration and extraction of minerals and oil	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability
P, Pr, RFF Agricultural runoff	Nutrients applied to agricultural land are introduced into aquatic systems[a]	**Potentially Indirect Negative** Reduced habitat quality	**Potentially Indirect Negative** Reduced habitat quality	**Potentially Direct Negative** Reduced habitat quality	**Potentially Indirect Negative** Reduced habitat quality	**Potentially Indirect Negative** Reduced habitat quality negatively affects resource viability
P, Pr, RFF Offshore disposal of dredged materials	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability

[a] Even thought tilefish are found in deep waters away from coastal areas, potential catastrophic events could redistribute pollutants to areas far from shore where they may not be generally concentrated in greater proportions than in coastal areas and/or found.

Table 51 (continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this amendment).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF Marine transportation	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for some interests, potential displacement for others
RFF National Offshore Aquaculture Act of 2007 (currently proposed)	Proposed bill that would grant DOC authority to issue permits for offshore aquaculture in Federal waters	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Direct Negative** Localized decreases in habitat quality possible	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Unknown** Costs/benefits needs to be further evaluated
RFF Amendment 9 to the SMB FMP (~2008)	Addresses finfish bycatch and discarding in the SMB small mesh fisheries. The document contains a proposal to prohibit trawl fishing in the tilefish HAPC	**Potentially Direct Positive** Localize reduction in harvest	**Neutral to Potentially Indirect Positive** Localize reduction in harvest	**Potentially Direct Positive** Will generate substrate protection for tilefish EFH both for Juveniles and Adult life stages	**Neutral** Interactions with protected species in the tilefish fishery are extremely minor	**Potential Indirect Negative** Likely to reduce bottom otter trawl revenue

Table 51 (continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this amendment).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
RFF NEFMC EFH Omnibus Amendment 2 (~2009)	Review/update/designation of EFH/HAPC of the FMPs under jurisdiction of the NEFMC	**Potentially Direct Positive** Localize reduction in harvest	**Potentially Indirect Positive** Localize reduction in harvest	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Neutral** Interaction with protected species in the tilefish fishery are extremely minor	**Neutral to Potentially Indirect Negative** Likely to reduce bottom otter trawl revenue
RFF Develop Standardized Bycatch Reporting Methodology (2007/2008)	Recommend measures to monitor bycatch in the tilefish fishery that will achieve an acceptable level of precision and accuracy	**Indirect Positive** Will improve data quality for monitoring total removals of managed resource	**Indirect Positive** Will improve data quality for monitoring removals of non-target species	**Neutral** Will not affect distribution of effort	**Neutral to Indirect Positive** Will increase observer coverage	**Potentially Indirect Negative** May impose an inconvenience on vessel operations
RFF Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (w/in next five years)	May recommend strategies to prevent the bycatch of sea turtles in commercial fisheries operations	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Neutral to Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

Summary of Non-Fishing Effects Though largely unquantifiable, it is likely that the non-fishing activities noted above would have negative impacts on habitat quality from disturbance and construction activities in the area immediately around the affected area. This would be a direct impact on habitat and an indirect effect to planktonic, juvenile, and adult life stages of fish and protected species in the project areas due to habitat degradation. However, since tilefish live in warm waters typically found in depths ranging from approximately 100 to 300 meters (328 to 984 feet), agricultural runoff and offshore aquaculture projects are likely to have limited impact on the stock if any. Nevertheless, as indicated above potential catastrophic events (e.g., storms) could redistribute pollutants to areas far from shore where they may not be generally found, and as such, potentially resulting in habitat degradation. Given the wide distribution of the affected species, minor overall negative effects to habitat are anticipated since the affected areas are localized to the project sites, which involve a small percentage of the fish population and their habitat.

Summary Effects of Past and Present Actions The present conditions of the VECs are empirical indicators of the summary effects of past actions since, independent of natural processes, and these present conditions are largely the product of these past actions. The combined effects of these actions are described in the VEC-by-VEC discussion below and are summarized in Table 52.

Managed species: The updated stock assessment indicates that the stock is not overfished and overfishing is not occurring. The managed resource is currently considered to be above the threshold criteria, and in fact, the current biomass is 72 percent of $_{Bmsy.}$ The summary effects of the past and present actions on the resource are considered to be positive. In summary, the status of the stock has significantly improved since the Tilefish FMP was first implemented. The sum effects of past and present actions on tilefish are considered to be positive in the short-term and are expected to continue to be positive in the long-term as these actions in conjunction with future actions are anticipated to continue the stock rebuilding process.

Non-target species: The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. Catch disposition analysis indicates that the tilefish fishery is very clean as the overall pounds landed and/or discarded of other species is low for directed tilefish trips. The relative contribution of the tilefish commercial fishery to the total discards (observed and self reported) of this species was evaluated in order to consider the importance of the commercial tilefish fishery to discards from a cumulative effects perspective (see section 6.2). From this analysis, the tilefish fishery appears to be a relatively minor contributor to the overall discards of other species. As such, the prosecution of fishing activities is not expected to negatively impact the abundance of other non-target species. The summary of effects of past and present non-fishing activities are less clear than for the managed resource due to lack of information. Although the negative effects of past and present actions associated with non-fishing activities (Table 51) may have resulted in negative effects, it is likely that those actions were minor due to the limited scale of the habitat impact compared with the population at

large. Thus, the resultant impact of past and present actions on non-target species is a net positive sum effect.

Habitat and Protected Species: Section 6.1 and Appendix E described fishing gears used in the commercial and recreational tilefish fisheries. The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. Longline gear has minimal detectable impacts to marine habitats (Stevenson et al. 2004). Longlines modify the structural component of the habitat, but the impacts are short-term and temporary. The impacts of hook and line gear used in the recreational fishery are likely less than longlines in that they are deployed for shorter periods of time and without anchors (MAFMC 2000). In general recreational hook and line gear in the recreational fishery is not generally associated with adverse EFH impacts because the gear does not alter bottom structure. Lastly, there have been no interactions documented between this fishery and species/stocks of marine mammals and, thus, the fishery is currently classified as a Category III fishery. As such, the prosecution of fishing activities is not expected to negatively impact the abundance of protected species or habitat in a negative manner. The summary of effects of past and present non-fishing activities are less clear than for the managed resource due to lack of information. Although the negative effects of past and present actions associated with non-fishing activities (Table 51) may have increase negative effects, it is likely that those actions were minor due to the limited scale of the habitat impact compared with the population at large. Thus, the resultant impact of past and present actions on non-target species is a net positive sum effect.

Human communities: The summary effect of past and present actions is complex since the effects have varied among fishery participants, consumers, and communities. Nevertheless, the net effect is considered to be positive in that the tilefish fishery has been able to steadily continue to support the domestic market demand. The implementation of the Tilefish FMP has contributed to reverse the stock decline that was evident in the late 1980s through 2001 (just before the plan was implemented). While some short-term economic costs have been associated with effort reductions, economic returns have generally been positive and as such, have tended to make a positive contribution to the communities associated with harvest of this species.

Summary Effects of Future Actions As with past and present actions, the list of reasonably foreseeable future actions is provided in Table 51. Additionally, the same general trends will be noted with regard to the expected outcomes of fishery-related actions and non-fishing actions. The summary effects of fishery related actions tend to be positive with respect to natural resources although short-term negative or mixed effects could be expected for human communities. Conversely, for the non-fishing actions listed in Table 51 the general outcome remains negative in the immediate project area, but minor for all VECs, again, due to the fact that tilefish live in warm waters found in depths ranging from approximately 100 to 300 meters (328 to 984 feet) where the bulk of the listed non-fishing activities presented in Table 51 would have limited impact on the stock if any.

The directionality of the impacts of future actions on the VECs will necessarily be a function of the offsetting negative vs. positive impacts of each of the actions. Since the magnitude and significance of the impacts of these future actions, especially non-fishing impacts, is poorly understood, conclusions as to the summary effects will essentially consist of an educated guess.

As previously stated, the future temporal boundary for this CEA is five years after implementation of the amendment (~2014; see section 8.3). Within that timeframe, the summary effects of future actions on managed resources, non-target species, habitat, and protected resources are all expected to be positive, notwithstanding the immeasurable localized negative effects of non-fishing actions. The optimization of the conditions of the resources is the primary objective of the management of these natural resources. Additionally, it is unknown, but expected that technology to allow for mitigation of the negative impacts of non-fishing activities will improve.

For human communities, short-term (i.e., within the temporal scope of this CEA) positive short and long-term community impacts are expected as sustainability of natural resources is attained.

Since this fishery is already operating under a hard TAL system, and the TAL is being fully harvested, it is not expected that the implementation of an IFQ program would negatively impact fishing mortality rates as the IFQ program would only be dividing and assigning the current quota to individual fishermen. However, the proposed IFQ system could provide biological benefits by potentially reducing discards and waste, especially for those permit categories that have been experiencing early closures (see section 4.2).

Although it is expected that an IFQ program would reduce overcapacity in the fishery, there are factors that can limit the speed of such transformation. In general terms, by reducing fishing capacity, IFQ programs can limit employment opportunities in fisheries where the program is implemented. This can result in trickle down effects on small fishing communities where job opportunities are scarce or skills of displaced fishermen are low. However, this amendment contains a suite of management measures that are designed to minimize drastic changes in the fishery. Finally, by improving catch efficiency under an IFQ share system, operating costs could be lowered as fishermen have more flexibility in their input choices and trip planning. This in turn is expected to promote safer at-sea operating conditions.

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Table 52. Summary effects of past, present and reasonably foreseeable future actions on the VECs identified for Amendment 1 (based on actions listed in Table 51).

VEC	Past Actions	Present Actions	Reasonably Foreseeable Future Actions	Combined Effects of Past, Present, Future Actions
Managed Resources	**positive:** the stock is not overfished and overfishing is not occurring	**positive:** the stock is not overfished and overfishing is not occurring; the stock continues to rebuilt at a pace greater than anticipated	**positive:** allow for better monitoring of tilefish landings in the management unit; the implementation of an IFQ system may encourage resource stewardship; avoid early closures and maximize performance and avoid discard and waste.	**short and long-term positive:** sustainable stock size; improve monitoring of tilefish landings; promote resource stewardship
Non-Target Species	**neutral to potential negative:** non-fishing actions that reduce habitat quality	**neutral to potential negative:** non-fishing actions that reduce habitat quality	**positive:** improved bycatch estimation	**neutral to positive in the short and long-term**: improved bycatch accounting, improved habitat quality
Habitat	**neutral to potential negative:** non-fishing actions that reduce habitat quality	**neutral to potential negative:** non-fishing actions that reduce habitat quality	**positive:** reduction in effects of disturbance by fishing gear are expected	**Positive:** reduced habitat disturbance by fishing gear
Protected Resources	**neutral to potential negative:** there are no interactions documented between this fishery and species/stocks of marine mammals. Non-fishing actions that reduce habitat quality	**neutral to potential negative:** there are no interactions documented between this fishery and species/stocks of marine mammals. Non-fishing actions that reduce habitat quality	**neutral to potential positive:** Sea Turtle Strategy	**neutral to negative in the short-term:** non-fishing actions that reduce habitat quality **long-term positive:** reduced gear encounters through Sea Turtle Strategy; improved habitat quality are expected
Human Communities	**positive:** fisheries have supported profitable industries and viable fishing communities	**positive:** fisheries continue to support profitable industries and viable fishing communities	**short-term negative to positive:** potential employment losses due to fleet consolidation; promote the safety of human life at sea; providing fishermen more flexibility in deciding when, where, and how to fish.	**short-term negative:** potential employment losses due to fleet consolidation **long-term positive:** sustainable resources should support viable communities and economies; promote safety at sea; providing fishermen more flexibility in deciding when, where, and how to fish.

8.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account.

Baseline condition for the resources, ecosystems, and human communities

For the purposes of this CEA, the baseline condition is considered as the present condition of the VECs plus the combined effects of the past, present and reasonably foreseeable future actions. Table 53 summarizes the added effects of the condition of the VECs (i.e., status/trends/stresses from section 6) and the sum effect of the past, present and reasonably foreseeable future actions (from Table 52). The resulting CEA baseline for each VEC is exhibited in the last column (shaded). In general, straight-forward quantitative metrics of the baseline conditions are only available for the managed resources, non-target species, and protected resources. The conditions of the habitat and human communities VECS are complex and varied. As such, the reader should refer to the characterizations given in sections 6.3 and 6.5, respectively. As mentioned above, this CEA Baseline is then used to assess cumulative effects of the proposed management actions below in Table 59.

8.5.1 Impacts on Managed Resource

Those past, present, and reasonably foreseeable future actions, whose effects may impact the tilefish stock and the direction of those potential impacts, are summarized in Table 54**.** The indirectly negative actions described in Table 54, which include disposal of dredged materials, marine transportation, and the National Offshore Aquaculture Act of 2005 (currently proposed), are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the managed resource is expected to be limited. Offshore mineral and oil exploration and extraction and agricultural runoff impacts may be much broader in scope. The impacts of geophysical exploration and nutrient inputs to the marine system may be of a larger magnitude, although the impact on productivity of the managed resource is unquantifiable. As described above (see section 8.4), NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP have had a positive cumulative effect on the managed resource. It is anticipated that the future management actions, described in Table54, will result in additional indirect positive effects on the managed resource through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which tilefish productivity depends. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the managed resource have had a positive cumulative effect.

Table 53. CEA baseline conditions of the VECs.

VEC	Status/Trends/Stresses	Combined Effects of Past, Present Reasonably Foreseeable Future Actions (Table 52)	Combined CEA Baseline Conditions
Managed Resource	The stock is not overfished and overfishing is not occurring	**Positive-** sustainable stock sizes	**Positive-** sustainable stock sizes
Non-target Species (principle species listed in Table 9)	Bycatch mortality, in general, continues to be very low	**Positive-** bycatch will likely continue to be almost non-existent in the directed Tilefish fishery	**Positive-** bycatch will likely continue to be almost non-existent in the directed Tilefish fishery
Habitat	Complex and variable - See section 6.0 and Appendix E; Non-fishing activities likely to have negative but site-specific effects on habitat quality; The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. Longline gear has minimal detectable impacts to marine habitats. Potential adverse impact of otter trawl gear on tilefish pueblo habitat and/or clay outcropping	**Positive-** Reduced habitat disturbance by fishing gear	**Positive-** reduced habitat disturbance by fishing gear and non-fishing actions
Protected Resources	There are no interactions documented between this fishery and species/stocks of marine mammals. The fishery is currently classified as a Category III fishery (see section 6.4).	**Long term low positive-** potential reduced gear encounters through Sea Turtle Strategy; improved habitat quality are expected	**Long term low positive-** potential reduced gear encounters through Sea Turtle Strategy
Human Communities	Stock is recovering and the fishery continues to supported profitable industries and fishing communities	**Short and long-term positive-** sustainable resources should support viable communities and economies	**Short and long-term positive-** sustainable resources should support viable communities and economies

The most recent stock assessment (i.e., 2005) indicates that tilefish fishery is not overfished and overfishing is not occurring (see section 6.1). In fact, it appears that if current recovery trends continue, the fishery will likely be rebuilt by the end of the recovery period (i.e., 2001 to 2010). The latest assessment indicates that the current biomass has increased to 14.80 million pounds or 72 percent of B_{msy}.

Amendment 1 to the FMP is being developed in order to evaluate the implementation of an IFQ program, new reporting requirements and recreational measures, and review of the EFH components of the FMP. The IFQ system is considered as a means to promote flexibility for the fishermen in their fishing operations and further control the harvesting capacity of the fishery. The measures to improve monitoring of commercial and recreational fishing activities should enhance management for this species.

The proposed IFQ system has the potential to reduce fishing capacity and is expected to allow fishermen to improve overall fishing methods by providing fishermen more flexibility in deciding when, where, and how to fish. IFQ would likely better match harvesting capacity to resource abundance and thus likely resulting in no race to fish. The proposed IFQ system could provide biological benefits by reducing discards and waste, especially for those permit categories that have been experiencing early closures (see section 4.2).

This amendment also proposes to update EFH descriptions for tilefish. The new definitions are based on current information regarding habitat requirements and would result in a narrower band of benthic substrate defined as EFH. The proposed action for EFH update would have neutral impacts on the managed resource when compared to the current definitions. The amendment also proposes to update the existing HAPC designations based on new information and re-examination of previous studies. Redefining HAPC areas for tilefish to correspond with current information regarding habitat requirements for this species would allow for more effective management oversight of HAPC that may be vulnerable to damage by fishing and/or non-fishing activities. The proposed action for HAPC modifications would have neutral to positive impacts on the managed resource when compared to the current definitions because it would allow for impacts to EFH for tilefish eggs, larvae, juveniles, and adults be identified and mitigated if necessary. Finally, the amendment also considers closing tilefish HAPC to bottom tending gear to decrease localized damage to tilefish habitat. This would have neutral to potentially positive impacts on the managed resource as these options allow for more effective protection of vulnerable tilefish HAPC when compared to the status quo.

The proposed measures under this amendment would support the long-term sustainability of the tilefish stock and be consistent with the objectives of the FMP under the guidance of the MSFCMA. The combination of any management measure in this amendment with those taken under the original FMP should promote improvement and long-term sustainability of the tilefish stock and result in positive cumulative impacts. Continued sound management of the tilefish stock is associated with positive cumulative impacts.

Table 54. Summary of the effects of past, present, and reasonably foreseeable future actions on the managed resource.

Action (see Table 51 for more detailed description)	Past to the Present		Reasonably Foreseeable Future
Original FMP	**Indirect Positive**		
Offshore mineral and oil exploration and extraction	**Indirect Negative**		
Agricultural runoff	**Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
National Offshore Aquaculture Act of 2007 (currently proposed)			**Indirect Negative**
Amendment 9 to the Squid, Mackerel, and Butterfish FMP (~2008)			**Indirect Positive**
NEFMC EFH Omnibus Amendment 2 (~2009)			**Indirect Positive**
Develop Standardized Bycatch Reporting Methodology (2007/2008)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next five years)			**Indirect Positive**
Summary of past, present, and future actions excluding those proposed in this Amendment	**Overall, actions have had, or will have, positive impacts on tilefish**		

8.5.2 Impacts on Non-target Species

Those past, present, and reasonably foreseeable future actions, whose effects may impact non-target species and the direction of those potential impacts, are summarized in Table 55. The indirectly negative actions described in Table 55, which include disposal of dredged materials, marine transportation, and the National Offshore Aquaculture Act of 2005 (currently proposed), are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the managed resource is expected to be limited. Offshore mineral and oil exploration and extraction and agricultural runoff impacts may be much broader in scope. The impacts of geophysical exploration and nutrient inputs to the marine system may be of a larger magnitude, although the impact on productivity of non-target species and the oceanic ecosystem is unquantifiable. As described above (see section 8.4), NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. At this time, NMFS can consider impacts to non-target species (federally managed or otherwise) and comment on potential impacts. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources within NMFS' jurisdiction.

The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. Catch disposition analysis indicates that the tilefish fishery is very clean as the overall pounds landed and/or discarded of other species is low for directed tilefish trips (see section 6.2). Past fishery management actions taken through the FMP have had a positive cumulative effect on non-target species. It is anticipated that the future management actions, described in Table 55, will result in additional indirect positive effects on non-target species through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which the productivity of many of these non-target resources depend. In particular, standardized bycatch reporting methodology would have a particular impact on non-target species by improving the methods which can be used to assess the magnitude and extent of a potential bycatch problem. Better assessment of potential bycatch issues allows more effective and specific management measures to be developed to address a bycatch problem. The impacts of these future actions could be broad in scope, and it should be noted the managed resource and non-target species are often coupled in that they utilize similar habitat areas and ecosystem resources on which they depend. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful have had a positive cumulative effect on non-target species.

The implementation of an IFQ program, new reporting requirements and recreational management measures, and review of the EFH components of the FMP would support the long-term sustainability of the tilefish stock and be consistent with the objectives of the FMP under the guidance of the MSFCMA, including National Standard 9. The IFQ system is considered as a means to promote flexibility for the fishermen in their fishing operations and further control the harvesting capacity of the fishery. The measures to improve monitoring of commercial and recreational fishing activities should enhance management for this species. This amendment also proposes to update EFH descriptions for tilefish. The new definitions are based on current information regarding habitat

requirements and would result in a narrower band of benthic substrate defined as EFH. The proposed action for EFH update would have neutral impacts on non-target species when compared to the current definitions. The amendment also proposes to update the existing HAPC designations based on new information and re-examination of previous studies. Redefining HAPC areas for tilefish to correspond with current information regarding habitat requirements for this species would allow for more effective management oversight of HAPC that may be vulnerable to damage by fishing and/or non-fishing activities. The proposed action for HAPC modifications would have neutral impacts on non-target species when compared to the current definitions. Finally, the amendment also considers closing tilefish HAPC to bottom tending gear to decrease localized damage to tilefish habitat. This would have neutral to potentially positive impacts on non-target species as these options may result in decreased encounters with non-targets (but potential effort displacement) when compared to the status quo. It is expected none of the proposed actions in this document would have any significant effect on the non-target species individually, or in conjunction with other anthropogenic activities.

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Table 55. Summary of the effects of past, present, and reasonably foreseeable future actions on non-target species.

Action (see Table 51 for more detailed description)	Past to the Present		Reasonably Foreseeable Future
Original FMP	**Indirect Positive**		
Offshore mineral and oil exploration and extraction	**Indirect Negative**		
Agricultural runoff	**Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
National Offshore Aquaculture Act of 2007 (currently proposed)			**Indirect Negative**
Amendment 9 to the Squid, Mackerel, and Butterfish FMP (~2008)			**Indirect Positive**
NEFMC EFH Omnibus Amendment 2 (~2009)			**Indirect Positive**
Develop Standardized Bycatch Reporting Methodology (2007/2008)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next five years)			**Indirect Positive**
Summary of past, present, and future actions excluding those proposed in this Amendment	**Overall, actions have had, or will have, positive impacts on non-target species**		

8.5.3 Impacts on Habitat (Including EFH)

Those past, present, and reasonably foreseeable future actions, whose effects may impact habitat (including EFH) and the direction of those potential impacts, are summarized in Table 56. The indirectly negative actions described in Table 56, which include disposal of dredged materials, and the National Offshore Aquaculture Act of 2005 (currently proposed), are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the managed resource is expected to be limited. Offshore mineral and oil exploration and extraction and agricultural runoff impacts may be much broader in scope. The impacts of geophysical exploration and nutrient inputs to the marine system may be of a larger magnitude, although the impact on habitat and EFH is unquantifiable. As described above (see section 8.4), NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by resources under NMFS' jurisdiction.

Section 6.1 described fishing gears used in the commercial and recreational tilefish fisheries. The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. In addition, a small percentage (<10%) of the total tilefish landings come from bottom otter trawl gear. Rod and reel is the typical gear used in the recreational fishery. Because tilefish are found in relatively deep waters, electric reels may be used to facilitate landing in the recreational fishery (Freeman and Turner 1977). Longline gear has minimal detectable impacts to marine habitats (Stevenson et al. 2004). Longlines modify the structural component of the habitat, but the impacts are short-term and temporary. Additionally, deployment and retrieval of anchors result in minimal disturbance to bottom sediments; effects (e.g., increased turbidity) are minimal and ephemeral. Because of the limited length of time this gear is deployed, effects at the community and ecosystem levels are not detectable. The impacts of hook and line gear used in the recreational fishery are likely less than longlines in that they are deployed for shorter periods of time and without anchors (MAFMC 2000). In general recreational hook and line gear in the recreational fishery is not generally associated with adverse EFH impacts because the gear does not alter bottom structure. Past fishery management actions taken through the FMP have had a positive cumulative effect on habitat and EFH.

It is anticipated that the future management actions, described in Table 56, will result in additional direct or indirect positive effects on habitat through actions which protect EFH for federally managed species and protect ecosystem services on which these species productivity depends. These impacts could be broad in scope. All of the VECs are interrelated; therefore, the linkages among habitat quality and EFH, managed resource and non-target species productivity, and associated fishery yields should be considered. For habitat and EFH, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and it is anticipated will continue to be, taken to improve the condition of habitat. There are some actions, which are beyond the scope of NMFS and

Council management such as coastal population growth and climate changes, which may indirectly impact habitat and ecosystem productivity. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had a neutral to positive cumulative effect.

The implementation of an IFQ program, new reporting requirements and recreational management measures, and review of the EFH components of the FMP would support the long-term sustainability of the tilefish stock and be consistent with the objectives of the FMP under the guidance of the MSFCMA, including EFH. The IFQ system is considered as a means to promote flexibility for the fishermen in their fishing operations and further control the harvesting capacity of the fishery. The measures to improve monitoring of commercial and recreational fishing activities should enhance management for this species.

This amendment also proposes to update EFH descriptions for tilefish. The new definitions are based on current information regarding habitat requirements and would result in a narrower band of benthic substrate defined as EFH. The proposed action for EFH update would have neutral impacts on habitat but allow for more effective consultations on oversight of vulnerable EFH areas when compared to the current definitions. The amendment also proposes to update the existing HAPC designations based on new information and re-examination of previous studies. Redefining HAPC areas for tilefish to correspond with current information regarding habitat requirements for this species would allow for more effective management oversight of HAPC that may be vulnerable to damage by fishing and/or non-fishing activities. The proposed action for HAPC modifications would have neutral to positive impacts on habitat if these areas are managed to protect sensitive habitat areas and their ecological function. Finally, the amendment also considers closing tilefish HAPC to bottom tending gear to decrease localized damage to tilefish habitat. This would have potentially positive impacts on habitat as these options may allow for protection of vulnerable tilefish HAPC, as well as EFH for other species as well when compared to the status quo. It is expected that none of the proposed actions in this document would have any significant effect on EFH individually, or in conjunction with other anthropogenic activities.

8.5.4 Impacts on Endangered and Protected Species

Those past, present, and reasonably foreseeable future actions, whose effects may impact endangered and protected species and the direction of those potential impacts, are summarized in Table 57. The indirectly negative actions described in Table 57, which include disposal of dredged materials, and the National Offshore Aquaculture Act of 2005 (currently proposed), are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on endangered and protected species, relative to the range of many of the endangered and protected species, is expected to be limited. Offshore mineral and oil exploration and extraction and agricultural runoff impacts may be much broader in scope. The impacts of geophysical exploration and nutrient inputs to the marine system may be of a larger magnitude, although the impact on endangered and protected species either directly or indirectly is

Table 56. Summary of the effects of past, present, and reasonably foreseeable future actions on habitat (including EFH).

Action (see Table 51 for more detailed description)	Past to the Present		Reasonably Foreseeable Future
Original FMP	**Indirect Positive**		
Offshore mineral and oil exploration and extraction	**Direct Negative**		
Agricultural runoff	**Direct Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
National Offshore Aquaculture Act of 2007 (currently proposed)			**Indirect Positive**
Amendment 9 to the Squid, Mackerel, and Butterfish FMP (~2008)			**Indirect Positive**
NEFMC EFH Omnibus Amendment 2 (~2009)			**Indirect Positive**
Develop Standardized Bycatch Reporting Methodology (2007/2008)			**Neutral**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next five years)			**Indirect Positive**
Summary of past, present, and future actions excluding those proposed in this Amendment	**Overall, actions have had, or will have, neutral to positive impacts on habitat (including EFH)**		

unquantifiable. As described above (see section 8.4), NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' endangered and protected species prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on endangered and protected species under NMFS' jurisdiction.

As indicated in section 6.4, according to NMFS observers on tilefish vessels and anecdotal information from tilefish fishermen, interactions between tilefish vessels and endangered and/or protected species have not been recorded. While not known with certainty, it is possible that the type of gear and fishing methods used in the tilefish fishery may contribute to the gear type used in the fishery having no observed interactions with endangered and/or threatened species. More specifically, commercial tilefish vessels have used circular hooks for many years, in fact, the tilefish fleet in Montauk switched from J hooks to circular hooks back in the early 1980s. Even when J hooks were used in the tilefish fishery, they were very light weight when compared to the hooks used in Atlantic pelagic longline fisheries (e.g., swordfish, shark, tuna) because tilefish vessels were targeting smaller size animals, typically less than 40 lb (longline pelagic vessels use heavier lines and hooks because they target larger/heavier animals). In addition, tilefish fishermen use less bait per hook compared to Atlantic pelagic longline fishermen. For example, a tilefish fisherman may use one mackerel fish to bait up to eight hooks or one squid to bait two hooks, while pelagic fishermen use an entire squid or mackerel to bait each hook as the hooks used in the Atlantic pelagic fishery are longer than those used in the tilefish fishery. Finally, tilefish fishermen deploy their gear early in the morning, securing it to the bottom of the ocean and retrieving it after a relatively short 2 to 4 hour soak. Conversely, Atlantic pelagic fishermen typically deploy their gear in the afternoon or evening and in some cases fishing all night drifting. The specific fishing gear configuration and methods of fishing used by longline tilefish vessels described above (gear type, location/depth of fishery, amount of bait used) are all positive reasons why the gear type used in the typical tilefish vessel may not interact (no known observed or anecdotal interactions) with ESA-listed endangered or protected species (including marine mammals and sea turtles).

Past fishery management actions taken through the FMP have had a positive cumulative effect on endangered and protected species through the reduction of fishing effort (potential interactions). It is anticipated that the future management actions, specifically the Atlantic Trawl Gear Take Reduction Team and the development of strategies for sea turtle conservation described in Table 57, will result in additional indirect positive effects on the endangered and protected species through management actions. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to endangered and protected species have had a positive cumulative effect.

The implementation of an IFQ program, new reporting requirements and recreational management measures, and review of the EFH components of the FMP would support the long-term sustainability of the tilefish stock and be consistent with the objectives of the FMP under the guidance of the MSFCMA. The IFQ system is considered as a means

to promote flexibility for the fishermen in their fishing operations and further control the harvesting capacity of the fishery. The measures to improve monitoring of commercial and recreational fishing activities should enhance management for this species.

This amendment also proposes to update EFH descriptions for tilefish. The new definitions are based on current information regarding habitat requirements and would result in a narrower band of benthic substrate defined as EFH. The proposed action for EFH update would have neutral impacts on protected and endangered resources. The amendment also proposes to update the existing HAPC designations based on new information and re-examination of previous studies. Redefining HAPC areas for tilefish to correspond with current information regarding habitat requirements for this species would allow for more effective management oversight of HAPC that may be vulnerable to damage by fishing and/or non-fishing activities. The proposed action for HAPC modifications would have neutral impacts on protected and endangered resources. Finally, the amendment also considers closing tilefish HAPC to bottom tending gear to decrease localized damage to tilefish habitat. This would have neutral to potentially positive impacts on protected and endangered resources as they may result in decreased encounters with protected and endangered resources (but potential effort displacement) when compared to the status quo. It is expected that none of the proposed actions in this document would have any significant effect on protected and endangered resources individually, or in conjunction with other anthropogenic activities.

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Table 57. Summary of the effects of past, present, and reasonably foreseeable future actions on endangered and protected species.

Action (see Table 51 for more detailed description)	Past to the Present		Reasonably Foreseeable Future
Original FMP	**Indirect Positive**		
Offshore mineral and oil exploration and extraction	**Indirect Negative**		
Agricultural runoff	**Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
National Offshore Aquaculture Act of 2007 (currently proposed)			**Indirect Negative**
Amendment 9 to the Squid, Mackerel, and Butterfish FMP (~2008)			**Indirect Positive**
NEFMC EFH Omnibus Amendment 2 (~2009)			**Indirect Positive**
Develop Standardized Bycatch Reporting Methodology (2007/2008)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next five years)			**Indirect Positive**
Summary of past, present, and future actions excluding those proposed in this Amendment	**Overall, actions have had, or will have, positive impacts on endangered and protected species**		

8.5.5 Social and Economic Impacts (Human Communities)

Those past, present, and reasonably foreseeable future actions, whose effects may impact human communities and the direction of those potential impacts, are summarized in Table 58. The indirectly negative actions described in Table 58, which include offshore disposal of dredged materials, marine transportation, and the National Offshore Aquaculture Act of 2005 (currently proposed), are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. It may, however, displace fishermen from project areas. Offshore mineral and oil exploration and extraction and agricultural runoff impacts may be much broader in scope. The impacts of geophysical exploration and nutrient inputs to the marine system may be of a larger magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is unquantifiable. As described above (see section 8.4), NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact human communities which are sustained by NMFS' resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities that rely on NMFS' resources for their income and livelihood.

The proposed IFQ system would eliminate derby style fishing and associated race for the fish that exists under the current management system. Fishermen would not have to go to sea during unsafe weather conditions in order to compete with someone else for a share of the quota. Fishermen could decide when it is better for them to harvest quota share taking into consideration weather conditions and price at the dock.

Consolidation of IFQ shares would result in fewer vessels and reduced crew requirements Employment losses due to the potential consolidation of a fishery under an IFQ program could have detrimental impacts on communities in which the fishery is embedded, particularly for communities in which fishing is an important part of the economy and social structure of the area. Furthermore, employment losses could result in trickle down impacts on small fishing communities where alternative employment opportunities for displaced fishermen are low. As discussed above, given the very small tilefish contribution to the total value and poundage of all finfish and shellfish, it can be assumed that only a small amount of the region's fishing vessel employment, wages, and sales are dependent on tilefish. In fact, the bulk of the tilefish landed for the last five years (2001-2005) have been caught by approximately six vessels. Similarly, support industries that are heavily reliant on selling products and services to the tilefish industry will also be affected. However, specific data needed to quantify the extent of these impacts are unavailable.

This amendment also proposes to update EFH descriptions for tilefish. The new definitions are based on current information regarding habitat requirements and would result in a narrower band of benthic substrate defined as EFH. The proposed action for EFH update would have positive impacts on human communities as human activities may not be unnecessary constrained in areas that are not "essential" as tilefish habitat (reduced

limitations on activities in these areas). The amendment also proposes to update the existing HAPC designations based on new information and re-examination of previous studies. Redefining HAPC areas for tilefish to correspond with current information regarding habitat requirements for this species would allow for more effective management oversight of HAPC that may be vulnerable to damage by fishing and/or non-fishing activities. The proposed action for HAPC modifications would have positive on human communities as human activities may not be unnecessary constrained in areas not considered HAPC (reduced limitations on activities in these areas). Finally, the amendment also considers closing tilefish HAPC to bottom tending gear to decrease localized damage to tilefish habitat. This would have neutral to potentially negative impacts in the short-term associated with reduced fishery yields (tilefish and other fisheries) because bottom trawling activity will not be allowed in these areas.

The economic impact of the commercial tilefish fishery relative to employment and wages is difficult to determine. According to NMFS, commercial fishermen from Maine through Virginia landed approximately 1.1 billion lb of fish and shellfish in 2005. Those landings have been valued at approximately $872 million. Total landed value ranged from $0.9 million in Delaware to $405 million in Massachusetts. However, it can be assumed that only a small amount of the region's fishing vessel employment, wages, and sales are dependent on tilefish since the relative contribution of tilefish to the total value and poundage of all finfish and shellfish is very small. In addition, in the last five years (2001-2005) a small number of vessels (approximately six) have landed the bulk of the tilefish quota.

It is not expected that the overall sustained participation of fishing communities in the tilefish fishery will change under an IFQ system when compared to the existing limited access program. It is also expected that reduction in fishing capacity in excess of the needed capacity to efficiently harvest the commercial TAL would result in a more profitable fishery. This in turn should benefit the communities where the fishery operates.

Past fishery management actions taken through the FMP process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices, while at the same time potentially reducing the availability of the resource to all participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions, described in Table 58, will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur through management actions that may implement gear requirements or area closures and thus, reduce revenues in the short-term. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had a positive cumulative effect.

The implementation of an IFQ program, new reporting requirements and recreational management measures, and review of the EFH components of the FMP would support the long-term sustainability of the tilefish stock and be consistent with the objectives of

the FMP under the guidance of the MSFCMA, including National Standard 8. The IFQ system is considered as a means to promote flexibility for the fishermen in their fishing operations and further control the harvesting capacity of the fishery. The measures to improve monitoring of commercial and recreational fishing activities should enhance management for this species. Therefore, none of the proposed actions in this document would have any significant effect on human communities individually, or in conjunction with other anthropogenic activities.

8.5.6 Preferred Action on all the VECS

A summary comparison of all the resultant anticipated cumulative effects for each set alternatives and each VEC are presented in Table 59 (the preferred alternatives are listed in the table as **bolded**.). The impacts of this proposed action on the VECs are described in sections 7.1 through 7.19. The magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, have been taken into account throughout this section 8.0. The action proposed in this document builds off action taken in the original FMP. When this action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative. Based on the information and analyses presented in the FMP document and this amendment, there are no significant cumulative effects associated with any of the actions proposed in this document.

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Table 58. Summary of the effects of past, present, and reasonably foreseeable future actions on human communities.

Action (see Table 51 for more detailed description)	Past to the Present		Reasonably Foreseeable Future
Original FMP	**Indirect Positive**		
Agricultural runoff	**Indirect Negative**		
Offshore mineral and oil exploration and extraction	**Mixed**		
Offshore disposal of dredged materials	**Indirect Negative**		
Marine transportation	**Mixed**		
National Offshore Aquaculture Act of 2007 (currently proposed)			**Unknown**
Amendment 9 to the Squid, Mackerel, and Butterfish FMP (~2008)			**Indirect Negative**
NEFMC EFH Omnibus Amendment 2 (~2009)			**Indirect Negative**
Develop Standardized Bycatch Reporting Methodology (2007/2008)			**Potentially Indirect Negative**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next five years)			**Indirect Negative**
Summary of past, present, and future actions excluding those proposed in this Amendment	**Overall, actions have had, or will have positive impacts on human communities**		

Table 59. Summary comparison of cumulative effects for Amendment 1 alternatives. (See section 5.0 for a complete description of each alternative.)

Valued Ecosystem Components (VEC)		Managed Resources	Non-Target Species	Habitat	Protected Species	Human Communities
Baseline Effects without Amendment 1 (includes effects of past, present and reasonably foreseeable future actions)		**Positive in short-term term-** stock is not overfished, overfishing is not occurring **Positive in long-term-** sustainable stock size	**Positive in long-term-** improved bycatch accounting, improved habitat quality	**Positive-** reduced habitat disturbance by fishing gear (NEFMC EFH Omnibus Amend 2) and non-fishing actions	**Neutral to Positive-** reduced gear encounters through Sea Turtle Strategy; improved habitat quality	**Short-term negative-** lower revenues would continue until stock is fully rebuilt **Long-term positive-** sustainable resources should support viable communities and economies
Alt #	**Management Measure/Alternative**	**Relative Incremental Effect Contribution of Amendment 1 Alternatives to Overall Cumulative Effect of Baseline**				
IFQ Allocation (Alternatives 1A through 1F)						
1A	No Action (Maintain status quo management system for tilefish)	0/--	0	0	0	0/--
Set 1B (1B1 to 1B4)	Full-time tier 1 permit holders only. (Avg. landings 1988-1998; Avg. landings for 2001-2005; Avg. landings best five years from 1997-2005; and/or equal allocation)	0/<+	0	0	0	<+
Set 1C (1C1 to 1C4)	Full-time tier 1 & 2 permit holders only. (Avg. landings 1988-1998; Avg. landings for 2001-2005; Avg. landings best five years from 1997-2005; and/or equal allocation)	0/<+	0	0	0	+

Table 59 (continued).						
Set 1D (1D1 to 1D4)	Full-time tier 1 & 2 and part-time permit holders only. (Avg. landings 1988-1998; Avg. landings for 2001-2005; Avg. landings best five years from 1997-2005; and/or equal allocation)	0/<+	0	0	0	+
1E*	**Full-time tier 1, full-time tier 2, and/or part-time permit holders. Avg. landings for years 1988-1998, 2001-2005, or best five years from 1997-2005. Allocations based on %s associated with landings and/or equal division among all qualifying vessels**	0/<+	0	0	0	+
1F	Considered but Rejected - Do not restrict initial eligibility for the IFQ ownership	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 1F in the document beyond justification for rejection in section 5.1.F.				
Permanent IFQ Transferability of Ownership						
2A	No Action (IFQ shares would not be transferable)	0	0	0	0	--
2B	IFQ shares may be transferable among any interested party	0/+	0	0	0	+
2C*	**IFQ shares may only be transferred among IFQ shareholders during the first five years of the IFQ program and other individuals thereafter**	0	0	0	0	--(S)/+(L)
2D	IFQ shares may only be transferred among IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit	0	0	0	0	--
2E	IFQ shares may only be transferred among IFQ shareholders/other vessels with a valid limited access commercial tilefish permit/established tilefish fishermen	0	0	0	0	--

Table 59 (continued).						
IFQ Leasing						
3A	No Action (Annual IFQ allocations would not be leased)	0	0	0	0	--
3B*	**Annual IFQ allocations may be leased among any interested party**	0/+	0	0	0	+
3C	Only tilefish IFQ shareholders would be permitted to lease annual IFQ allocations during the first five years of the IFQ program and other individuals thereafter	0	0	0	0	+
3D	Only tilefish IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit would be permitted to lease annual IFQ allocations	0	0	0	0	<--
3E	Only tilefish permit holders (IFQ shareholders or limited access permit holders)/established tilefish fishermen would be permitted to lease annual IFQ allocations	0	0	0	0	<--
IFQ Share Accumulation						
4A	No Action (IFQ share accumulation would not be limited)	0	0	0	0	<--/<+
4B	Limit IFQ share accumulation to 49 percent of the TAL	0	0	0	0	<--/<+
4C	Limit IFQ share accumulation to 37 percent of the TAL	0	0	0	0	<--/<+
4D	Limit IFQ share accumulation to 25 percent of the TAL	0	0	0	0	<--/<+
4E	Limit IFQ share accumulation to 16.5 percent of the TAL	0	0	0	0	<--/<+

Table 59 (continued).						
4F	Considered but rejected for further analysis - Limit IFQ share accumulation to 66/15/19 percent of the TAL for full-time tier 1/full-time tier 2/part-time IFQ permit holders, respectively	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 4F in the document beyond justification for rejection in section 5.4.F				
Commercial Trip Limit						
5A*	**No Action (Maintain status quo management regarding trip limits)**	0	0	0	0	0
5B	If an IFQ system is not implemented for the part-time permit category, then a 15,000 pounds tilefish trip limit would be implemented for that permit category	0/<--	0	0	0	0/<+
Fees and Cost Recovery						
6A	No Action (Fees and cost recovery would not be collected if an IFQ program is implemented)	0	0	0	0	0
6B	IFQ shareholder directly pays	0	0	0	0	--
6C	IFQ shareholder pays via a federally permitted dealer	0	0	0	0	--
IFQ Review Process						
7A	No Action (Review of the IFQ program during a specific timeframe period would not be implemented)	0	0	0	0	--
7B*	**Allow for a formal and detailed review of the IFQ program**	0	0	0	0	+
7C	Considered but rejected for further analysis - Develop a system for review of the IFQ program such as fixed-term, cascading entitlements	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 7C in the document beyond justification for rejection in section 5.7.C.				
IFQ Reporting Requirements						
8A	No Action (Maintain status quo reporting requirements)	0	0	0	0	0

Table 59 (continued).						
8B*	**Facilitation of an IFQ system administration if an IFQ program is implemented**	0	0	0	0	0/+
IVR Reporting Requirements						
9A	No Action (Maintain the status quo reporting of tilefish landings under the current IVR system)	0	0	0	0	0
9B*	**IVR reporting must be made 48 hours after offloading fish**	0/<+	0	0	0	0/<+
Commercial Vessel Logbook Reports						
10A	No Action (Maintain the status quo reporting of tilefish landings under the current logbook record keeping system)	This alternative is no longer relevant as two alternatives to the current system were considered but rejected for further analysis (see 10B and 10C below).				
10B	Considered but rejected for further analysis - Exempt longline tilefish vessels from current logbook record keeping requirements (VTR) and implement a specific logbook system for those longline vessels	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 10B in the document beyond justification for rejection in section 5.10.B.				
10C	Considered but rejected for further analysis - Implement an electronic reporting system for commercial landings	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 10C in the document beyond justification for rejection in section 5.10.C.				
Hook Size Restrictions						
11A	Considered but rejected for further analysis - Implement minimum hook size restriction in the commercial fishery	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 11A in the document beyond justification for rejection in section 5.11.A.				
Recreational Party/Charter Permits and Reporting Requirements						
12A	No Action (Maintain the status quo permit and reporting requirements for party/charter vessels and operators)	0	0	0	0	0
12B*	**Establish a P/C tilefish vessel permit and P/C vessel reporting requirements**	0/<+	0	0	0	0

Table 59 (continued).						
Recreational Bag-Size Limit						
13A	No Action (Maintain status quo recreational bag-size limits)	0	0	0	0	0
13B	Establish an 8-fish recreational bag-size limit per person per trip	0/<+	0	0	0	0
13C	Establish a 4-fish recreational bag-size limit per person per trip	0/<+	0	0	0	0
13D	Establish a 2-fish recreational bag-size limit per person per trip	0/<+	0	0	0	0
13E	Establish a 1-fish recreational bag-size limit per person per trip	0/<+	0	0	0	0
13F	Establish a tilefish recreational bag-size limit of 1-fish per person per trip if future recreational landings go up to 4-percent of the total TAL	0/<+	0	0	0	0
Improve Monitoring of Golden Tilefish Landings Caught in the Mid-Atlantic Region						
14A	No Action (Maintain the status quo management regarding the catch and reporting of tilefish)	0/--	0	0	0	0
14B*	**Implement measures that would allow for golden tilefish caught in the management unit to be landed in the management unit only**	+	0	0	0	0/+
Framework Adjustment Process						
15A	No Action (Maintain the status quo measures that can be added or modified via the framework adjustment process)	0	0	0	0	0
15B*	**Expand the list of management measures identified to be added or modified via the framework adjustment process to include recreational measures and measures that facilitate the periodic review of the IFQ program**	0/<+	0	0	0	0/<+

Table 59 (continued).						
EFH Designation						
16A	No Action (Maintain status quo EFH designation)	0	0	0	0	0
16B*	**Modify current EFH designation**	0/+	0	0/+	0	+
16C	Considered but rejected for further analysis - GIS analysis of substrate and temperature	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 16C in the document beyond justification for rejection in section 5.16.C				
HAPC Designation						
17A	No Action (Maintain the status quo HAPC designation)	0	0	0	0	0
17B	Designate HAPC as statistical areas with modified depth	0/+	0	0/+	0	0/+
17C*	**Designate HAPC as four canyons**	0/+	0	0/+	0	0/+
17D	Designate HAPC as thirteen canyons	0/+	0	0/+	0	0/+
Measures to Reduce Gear Impact on EFH						
18A	No Action (No GRAs)	0/--	0	--	0	0(S)/--(L)
18B	GRAs within statistical areas 616 and 537	0	0	0/+	0	--(S)/+(L)
18C	GRAs within canyons	0/+	0	+	0	0/--(S); +(L)
18D	Considered but rejected for further analysis - EEZ GRA	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 18D in the document beyond justification for rejection in section 5.18.D				
Royalty Collection System						
19A	No Action (Collection of royalties would not be implemented for the initial, or any subsequent, distribution of allocations in the tilefish IFQ program)	0	0	0	0	0/+

Table 59 (continued).

19B	A per-unit fee would be assessed on tilefish IFQ allocations if an IFQ program is put in place for the commercial tilefish fishery. IFQ shareholder directly pays	0/<+	0	0	0	--
19C	A percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder directly pays	0/<+	0	0	0	--
19D	A Percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder pays via a federally permitted dealer	0/<+	0	0	0	--
19E	Considered but rejected for further analysis - Implement an auction system for the collection of royalties if an IFQ program is put in place for the commercial tilefish fishery	Determination is not applicable because the alternative was considered but rejected for further analysis. No further consideration was given to alternative 19E in the document beyond justification for rejection in section 5.19.E				

Bolded * = Preferred Alternative
0 = No Cumulative Impact
+ = Positive Cumulative Impact
>+ = High Positive; < + = low positive
-- = Negative Cumulative Impact
> -- = High Negative; < -- = low negative
S=Short-term
L=Long-term
Low (as in *low* positive or *low* negative): to a lesser degree
High (as in *high* positive or *high* negative): to a greater degree
Potentially: some degree of uncertainty associated with the impact

Impact Definitions:
Managed Species, Non-Target species, Protected Species:
Positive: actions that increase stock/population size
Negative: actions that decrease stock/population size
Habitat:
Positive: actions that improve the quality or reduce disturbance of habitat
Negative: actions that degrade the quality or increase disturbance of habitat
Human Communities:
Positive: actions that increase revenue and well being of fishermen and/or associated businesses
Negative: actions that decrease revenue and well being of fishermen and/or associated businesses

9.0 CONSISTENCY WITH THE MAGNUSSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

9.1 National Standards

Section 301(a) of the MSFCMA states: "Any fishery management plan prepared, and any regulation promulgated to implement any such plan, pursuant to this title shall be consistent with the following national standards for fishery conservation and management." The Council continues to manage the tilefish fishery in accordance with the National Standards required under the Magnuson-Stevens Act. Amendment 1 to the Tilefish FMP fully addresses how the management actions implemented to successfully manage tilefish comply with the National Standards. The following is a discussion of the national standards and how this amendment meets them:

<u>NATIONAL STANDARD 1</u> - Conservation and management measures shall prevent overfishing while achieving, on a continuous basis, the optimum yield from each fishery for the United States fishing industry.

Consistent with the National Standard Guidelines, the Council has instituted a program to rebuild the stock. The tilefish FMP instituted a TAL as the primary control on fishing mortality. A 10 year stock rebuilding schedule (i.e., 2001 to 2009) with 50% probability of achieving the rebuilt B_{MSY} stock level was also implemented. The current recovery consists of a constant harvest strategy and annual quota reductions for previous overages of the quota exist. In addition, a "benchmark" stock assessment conducted at the NEFSC sponsored SARC/SAW every three years from which the specifics of the B_{MSY}, F_{MSY}, and other biological reference points could change which thus could warrant changes in the actual TAL. The annual TAL of 1.995 million live pounds has not change since the FMP was first implemented. The most recent stock assessment (i.e., 2005) indicates that tilefish fishery is not overfished and overfishing is not occurring (see section 6.1). In fact, it appears that if current recovery trends continue, the fishery will likely be rebuilt by the end of the recovery period.

The alternatives discussed in section 7.0 will not modify the process used by the Council to establish the TAL. The IFQ program could modify the distribution of harvesting allocations among fishermen within and across permit categories that participates in the in the IFQ system while maintaining existing management measures to rebuilt the stock and address overfishing. The proposed IFQ system has the potential to reduced fishing capacity as it is expected that this system would allow fishermen to improve overall fishing methods by providing fishermen more flexibility in deciding when, where, and how to fish.

The recreational party/charter permit requirements would allow for collection of better data on this sector of the fishery. Better data would allow for a better understanding of the overall recreational tilefish fishing mortality.

<u>NATIONAL STANDARD 2</u> - Conservation and management measures shall be based upon the best scientific information available.

There was extensive analytical work and data source used in the development of this amendment. NMFS dealer, IVR, and VTR, data were used to characterize the fishery and analyzed the proposed measures. The specialists who worked with these data are familiar with the most recent analytical techniques and with the available data and information relevant to tilefish fisheries. Marine Recreational Fisheries Statistical Survey (MRFSS) data were used to characterize the recreational fishery. The analytical work presented in this document is based on the most current landings data and biological and socioeconomic data available at the time the analysis was conducted.

The most recent peer-reviewed tilefish stock assessment (SAW 41, NEFSC 2005) included specific revisions to the biological reference points for Tilefish. These reference points are used by fishery managers in setting harvest targets such that optimum yield can be achieved. The analytical advice provided through peer-reviewed scientific stock assessments is generally accepted as being consistent with the best scientific information available, and is, therefore, consistent with National Standard 2. Lastly, the original EFH background document (Steimle et al. 1999), the updated EFH source document (Steimle et al. 2005), in addition to an extensive literature review were used to review and update the description and identification of EFH. In addition to maintaining consistency with the Magnuson-Stevens Act, this action should indirectly promote the achievement of FMP management objective 1.

<u>NATIONAL STANDARD 3</u> - To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The management unit is all golden tilefish (*Lopholatilus chamaeleonticeps*) under United States jurisdiction in the Atlantic Ocean north of the Virginia/North Carolina border. Tilefish south of the Virginia/North Carolina border are currently managed as part of the Fishery Management Plan for the Snapper-Grouper Fishery managed by the South Atlantic Fishery Management Council. Katz et al. (1983) used significant differences in allelic frequencies to identify distinct stocks between mid-Atlantic and South Atlantic tilefish. The authors also felt that certain aspects of tilefish distribution, life history and ocean circulation patterns supported their two stock hypothesis for the United States Atlantic. For management purposes, the Southeast Fisheries Science Center manages the tilefish stock south of the Virginia/North Carolina border under two management plans. The Atlantic portion of the stock south of the Virginia/North Carolina border is managed by the SAFMC under the Snapper Grouper Fishery Management Plan and the Gulf of Mexico portion of the stock is managed by the GMFMC under the Reef Fish Fishery Management Plan.

Commercial tilefish landings occur throughout the Maine thought North Carolina range. However, the last 10 years (1996 to 2005) close to 98 percent of the commercial landings were attributed to the states of Rhode Island, Connecticut, New York, and New Jersey (Table 3). The

tilefish commercial fishery is prosecuted in EEZ waters. While small quantities of tilefish landings have been reported as being landed from state controlled waters it is likely that these are misreported landings.

Golden tilefish in the South Atlantic are classified as overfished. The annual commercial quota was reduced in 2006 to 295,000 pounds (gutted weight). Commercial tilefish landings were over 222,000 pounds in 2004. The SAFMC also has in place a commercial limited access permit, commercial and recreational gear restrictions, commercial trip limits, and recreational possession limits.[36]

Vessels landing tilefish from the Northeast management unit must land tilefish in the northeast/mid-Atlantic states of Maine through Virginia. This specification is consistent with National Standard 3.

NATIONAL STANDARD 4 - Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The amendment does not discriminate among residents of different states. The IFQ program would not discriminate between residents of different states. The IFQ system would distribute shares proportionately among those who have historically participated in the fishery regardless of the location of their respective principal port of landings or home port state. Furthermore, the IFQ system does not differentiate among United States citizens, nationals, resident aliens, or corporations on the basis of their state of residence or incorporate or rely on a state statute or regulation that discriminates against residents of another state. The overall quota under an IFQ quota share system is based on stock size and is designed to assure that the target mortality rate is not exceeded.

The tilefish FMP uses Total Allowable Landings (TAL) as the primary control on fishing mortality. In addition, the FMP implemented a limited entry program and a tiered commercial quota allocation of the TAL. There are three fishing categories, an incidental, a part-time, and a full-time category for division of the quota under the tilefish limited access program. Under the FMP, the "target" estimate of landings for the incidental category (5 percent of the TAL) is first deducted from the overall TAL, and then the remainder of the TAL is divided among the full-time tier 1 category, which receives 66 percent; the full-time tier 2 category, which receives 15 percent; and, the part-time category, which receives 19 percent. Trip limits are currently only imposed in the incidental permit category (open access) to achieve a "target" or soft quota. The preferred IFQ systems, would implement quota shares for the full-time tier 1 category, full-time tier 2 category, and the part-time category. The chosen IFQ system would initially allocate the

[36] For additional information regarding tilefish regulations see: Snapper Grouper Amendment 13C at http://www.safmc.net/Portals/6/Library/FMP/SnapGroup/SG%20Amend%2013C%202-23-06%20FINAL.pdf

same proportion of the overall commercial quota by permit category under the IFQ system as it is done under the current limited entry program. That is, full-time tier 1 category vessels would still receive 66 percent of the TAL (after adjusting for incidental category landings), full-time tier 2 category vessels would receive 15 percent, and part-time category vessels would receive 19 percent. However, the IFQ system would allocate specific quota shares to vessels within the permit categories based on historical landings from one of three proposed sets of time periods (average landings for years 1988-1998, average landings for years 2001-2005, best five years from 1997 to 2005) or by dividing the overall quota for each permit category among all permitted vessels in each category. Any chosen IFQ system could therefore potentially restructure the current fishery. The individuals that will benefit from initial allocations are those that hold Federal limited access permits to participate in the tilefish fishery, as these individuals are the universe of individuals that can harvest commercial tilefish legally.

The proposed IFQ system has the potential to improve overall fishing methods by providing fishermen more flexibility in deciding when, where, and how to fish. This in turn would allow fishermen to land fish when the most appropriate conditions exist. Consequently fishermen could spread landings throughout the year, maximize product quality, and market value. As a result, optimization of resource yield in terms of product volume and value would likely occur.

The amendment contains several measures that would prevent excessive share accumulation. The Magnuson-Stevens Act requires that if it becomes necessary to allocate or assign fishing privileges among various United States fishermen, an FMP must be "...carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges" (Magnuson-Stevens Act § 301(a)(4)). Even though the Act requires that any individual, person, or corporation does not acquire excessive quota shares under an IFQ system, the Act does not provide specific guidance regarding what should be the appropriate limits on consolidation. The National Standard guidelines do not define excessive shares but they imply conditions of monopoly or oligopoly. The limits on quota share accumulation would be consistent with National Standard 4.

The recreational party/charter permit requirements would allow for collection of better data on this sector of the fishery. Better data would allow for a better understanding of the overall recreational participation in this fishery. These provisions are, therefore, "reasonably calculated to promote conservation."

<u>NATIONAL STANDARD 5</u> - Conservation and management measures shall, where practicable, consider efficiency in the utilization of the fishery resources; except that no such measure shall have economic allocation as its sole purpose.

The proposed IFQ system has the potential to reduced fishing capacity as it is expected that they would allow fishermen to improve overall fishing methods by providing fishermen more flexibility in deciding when, where, and how to fish. This in turn would allow fishermen to land fish when the most appropriate conditions exist. Consequently fishermen could spread landings throughout the year, maximize product quality, and market value. As a result, optimization of

resource yield in terms of product volume and value would likely occur. Furthermore, it is expected that since all three of the permit categories will participate in the IFQ system, the larger these benefits.

By improving catch efficiency under an IFQ share system, operating costs could be lowered as fishermen have more flexibility in their input choices and trip planning. This in turn is expected to promote safer at-sea operating conditions. The proposed IFQ system of quota share allocations is an economic solution to the race for fish. The reduction in fishing capacity could potentially be the highest under the IFQ systems that include the largest amount of categories of permit holders.

In addition, the proposed IFQ system could provide biological benefits by reducing discards and waste, especially for those permit categories that have been experiencing early closures. For example it is possible that when tilefish closures are first implemented, vessels that are out at sea may be forced to discard caught fish as they would not be allowed to land it due to closures. As indicated in section 4.2, the full-time tier 2 category closed early in 2005 and 2006 and the part-time category had early closures in 2002, 2004, 2005, and 2006.

Maintaining the status quo management system (alternative 1A) for tilefish would continue the overall incentives for overcapitalization and derby fishing conditions. Therefore, if the management regime under the current system were to continue fishing vessels would continue to employ higher than necessary levels of capital investment and operating costs, and shorter fishing seasons. These vessels would also continue to face lower ex-vessel value due to market gluts. In addition, the current system would not motivate fishermen to limit fishing practices during unsafe conditions.

As indicated above, the IFQ systems are expected to produce biological benefits by further reducing discards and waste. In addition, these systems would enhance safety at sea. These biological and social considerations indicate that economic allocation is not the sole purpose of the IFQ management systems. The management regime is intended to allow the fishery to operate at the lowest possible cost (e.g., fishing effort, administration, and enforcement) given the FMP's objectives.

<u>NATIONAL STANDARD 6</u> - Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

The management measures presented in this document would not change the manner in which the stock is assessed and the total allowable catch is determined. The definition of overfishing is based upon a fishing mortality rate strategy. As such, the quota may fluctuate to reflect changes in tilefish stock conditions after a benchmark stock assessment has been conducted based on any changes among the biological reference points or the stock status relative to those reference points.

The IFQ program would allow fishermen to adjust their fishing operations to changes in biological and economic conditions. For example, the IFQ systems would allow fishermen to fish when favorable conditions exist and to reduce fishing effort when less favorable conditions exist (bad weather, saturated market, low product price). The proposed IFQ system would allow fishermen with more flexibility when conducting their fishing practices and business activities when compared to the current management system. In general, the IFQ systems will enhance the ability of fishermen to adjust fishing practices when faced with variations and contingencies. As such, the proposed IFQ program is consistent with National Standard 6.

NATIONAL STANDARD 7 - Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

The amendment is consistent with and complements, but does not duplicate, management measures contained in other FMPs. The proposed IFQ program could initially increase annual management, enforcement, and data collection and analysis costs due to initial program implementation. NMFS is required under the Magnuson-Stevens Act to collect fees to recover these directly related IFQ program costs. Under section 304(d)(2)(A) of the Act, the Secretary is authorized to collect a fee to recover these costs. Under this action, these costs will be recovered from the industry as part of the cost recovery program. The implementation of a cost recovery program in this fishery is expected to reduce the public cost of fishery management.

Preliminary analyses show that management, enforcement, and data collection cost would be approximately $94,000 under the proposed IFQ program. Based on a TAL of 1.995 million pounds of tilefish, a 2005 coastwide average ex-vessel price for all market categories of $2.48 per pound, and the maximum fee level of 3-percent; the total fee expected to be collected in the first year of the program would be $141,066 under the implementation of an IFQ program for all permit categories (assuming that the entire tilefish quota is landed). Furthermore, the program is also expected to increase benefits in terms of increased revenues by approximately $252,000 (assuming a 1.995 million lb TAL and 2005 tilefish ex-vessel price).

Industry harvesting costs are expected to decrease as the system is expected to improve catch efficiency and fishermen have more flexibility in their input choices and trip planning. However, at this time no estimates can be provided. In addition, it is expected that tilefish fishermen will increase benefits in terms of increased revenues and fishing season under the IFQ system.

Fishermen would have flexibility under the IFQ program by adjusting the amount of shares holdings and planning when to conduct business. Fishermen who choose to exit the fishery under the IFQ system may receive economic benefit if they sell their share harvesting privilege. The burden on fishermen who do not receive an initial allocation is discussed under section 7.5 and the RIR/IRFA in section 11.10. Management measures proposed for the IFQ system would replace the existing limiting access system used to manage the fishery, and therefore, are not duplicative.

<u>NATIONAL STANDARD 8</u> - Conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act (including the prevention of overfishing and rebuilding of overfished stocks), take 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.

It is not expected that the overall sustained participation of fishing communities in the tilefish fishery will change under an IFQ system when compared to the existing limited access program. It is also expected that reduction in fishing capacity in excess of the needed capacity to efficiently harvest the commercial TAL would result in a more profitable fishery. This in turn should benefit the communities where the fishery operates.

The port and community description is in section 6.5.1, the RIR is in section 11.10 and the SIA is in section 12.0. In 2005, the commercial harvesting sector landed approximately 2.7 million pounds of tilefish valued at $3.5 million and in 2004, there were 1.5 million pounds with a total value was $3.3 million.

The economic impact of the commercial tilefish fishery relative to employment and wages is difficult to determine. According to NMFS, commercial fishermen from Maine through Virginia landed approximately 1.1 billion lb of fish and shellfish in 2005. Those landings have been valued at approximately $872 million. Total landed value ranged from $0.9 million in Delaware to $405 million in Massachusetts. However, it can be assumed that only a small amount of the region's fishing vessel employment, wages, and sales are dependent on tilefish since the relative contribution of tilefish to the total value and poundage of all finfish and shellfish is very small. In addition, in the last five years (2001-2005) a small number of vessels (approximately six) have landed the bulk of the tilefish quota. The affects on employment for the harvesting sector are currently unknown. Information regarding the number of permits, dealers, and processors in the tilefish fishery is presented in the SIA (see section 12.0). The SIA contains information on the social and cultural impacts of the Amendment on communities and individuals.

The action will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; materially alter the budgetary impact of entitlement, grants, user fees, or loan programs or the rights and obligations of their participants thereof; or, raise novel, legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in EO 12866.

Consolidation of IFQ shares would result in fewer vessels and reduced crew requirements Employment losses due to the potential consolidation of a fishery under an IFQ program could have detrimental impacts on communities in which the fishery is embedded, particularly for communities in which fishing is an important part of the economy and social structure of the area. Furthermore, employment losses could result in trickle down impacts on small fishing communities where alternative employment opportunities for displaced fishermen are low. As discussed above, given the very small tilefish contribution to the total value and poundage of all

finfish and shellfish, it can be assumed that only a small amount of the region's fishing vessel employment, wages, and sales are dependent on tilefish. In fact, the bulk of the tilefish landed for the last five years (2001-2005) have been caught by approximately six vessels. Similarly, support industries that are heavily reliant on selling products and services to the tilefish industry will also be affected. However, specific data needed to quantify the extent of these impacts are unavailable.

Another area of concern of the proposed action is the affect on certain ports. With regard to specific ports, the majority of the tilefish landings (98%) in recent years (2000-2005) came from five ports: Montauk [60% of landings, 66% of value] and Hampton Bays [13% of landings, 15% of value], NY (Suffolk county); Long Beach/Barnegat Light [13% of landings, 11% of value], NJ (Ocean county); Point Judith [7% of landings, 5% of value], RI (Washington county) and Gloucester [2% of landings, 1% of value], MA (Essex county). Only 7 ports, however, have at least a 1.0% fishing revenue dependence on tilefish: Pine Beach and Long Beach/Barnegat Light, NJ (Ocean county) Montauk, Hampton Bays and Mattituck, NY (Suffolk county), Middletown, NJ (Monmouth county), and Point Judith, RI (Washington county). Ports showing at least a 1% landings dependence on tilefish are all of these except Point Judith. Pine Beach and Middletown, NJ and Mattituck, NY (which were not in the upper tiers of tilefish ports in general) come to the fore. And Gloucester, which was in the top 5 tilefish ports in terms of tilefish landings, drops out of the top list when tilefish landings are compared to total landings for the port. We must remember, however, that Gloucester still has high tilefish landings and revenue relative to the tilefish fishery. Further, though Pine Beach is highly dependent based on tilefish landings relative to all landings, its total landings are still very low (see section 6.5). These ports are dependent, to varying degrees, upon tilefish landings and will be impacted by the proposed regulatory action. The extent to which local communities and businesses will be affected "materially" is unknown, but it is likely that local businesses which support the commercial fishing industry will not be adversely impacted by this action.

The proper management of the tilefish stock through implementation of the management measures discussed in this amendment will be beneficial to the commercial fishing communities of the Atlantic coast in the long-term as the stock continues to rebuild. By preventing continued overfishing and allowing stock rebuilding, benefits to the fishing communities will be realized through increased tilefish abundance and subsequent harvests at sustainable levels.

<u>NATIONAL STANDARD 9</u> - Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

This national standard requires Councils to consider the bycatch effects of existing and planned conservation and management measures. Bycatch can, in two ways, impede efforts to protect marine ecosystems and achieve sustainable fisheries and the full benefits those resources can provide to the Nation. First, bycatch can increase substantially the uncertainty concerning total fishing-related mortality, which makes it more difficult to assess the status of stocks, to set the appropriate OY and define overfishing levels, and to ensure that OYs are attained and

overfishing levels are not exceeded. Second, bycatch may also preclude other more productive uses of fishery resources.

The term "bycatch" means fish that are harvested in a fishery, but that are not sold or kept for personal use. Bycatch includes the discard of whole fish at sea or elsewhere, including economic discards and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include any fish that legally are retained in a fishery and kept for personal, tribal, or cultural use, or that enter commerce through sale, barter, or trade. Bycatch does not include fish released alive under a recreational catch-and-release fishery management program. A catch-and-release fishery management program is one in which the retention of a particular species is prohibited. In such a program, those fish released alive would not be considered bycatch.

The directed commercial fishery for tilefish is largely prosecuted by longline. According to 2005 VTR data, 100% of the tilefish landed by directed commercial trips employed longline gear. Bottom otter trawls may also be used to catch tilefish, but have limited utility because of the habitat preferred by tilefish. Bottom otter trawls are only effective where the bottom is firm, flat, and free of obstructions. Soft mud bottom, rough or irregular bottom, or areas with obstructions, which are those areas most frequented by tilefish, are not conducive to bottom trawling. However, tilefish are occasionally taken incidental to other directed fisheries, such as the trawl fisheries for lobster and flounder (Freeman and Turner 1977) and hake, squid, mackerel and butterfish (MAFMC 2000).

Longlining for tilefish catches very few other species. According to VTR data, very little (< 0.01%) discarding was reported by longline vessels that targeted tilefish for the 1996 to 2005 period (Table 9). In addition, the 2005 stock assessment indicates that there is little reported discarding of tilefish in the trawl fishery according to VTR data. Reported tilefish otter trawls discards for the 1994 to 2004 period ranged from less than 1,000 pounds for most years to 28,713 pounds in 2003 (SAW 41, NEFSC 2005).

According to the latest stock assessment, dependable discard estimates for tilefish do not exist. Discard to keep ratios in the trawl fishery for the 1989 to 2004 period ranged from zero in 1993 to 1.4 in 2001. Observer data also indicates that from 1989 to 2004, less than 15 trips were sample that caught tilefish in twelve of the sixteen year period (SAW 41, NEFSC 2005). Overall, discards appear as low as they can be at the present and there does not appear to be a problem. However, there is limited at-sea observer data thus, more data collection is needed to better assess this issue.

<u>NATIONAL STANDARD 10</u> - Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

The proposed IFQ system would eliminate derby style fishing and associated race for the fish that exists under the current management system. Fishermen would not have to go to sea during unsafe weather conditions in order to compete with someone else for a share of the quota.

Fishermen could decide when it is better for them to harvest quota share taking into consideration weather conditions and price at the dock. In summary, the Council has concluded that this amendment should promote the safety of human life at sea.

9.2 Other Required Provisions of the Magnuson-Stevens Act

Section 303(a) of the Magnuson-Stevens Act contains 15 additional required provisions for FMPs, which are discussed below. Any FMP prepared by any Council, or by the Secretary, with respect to any fishery, shall:

PROVISION 1 - Contain the conservation and management measures, applicable to foreign fishing and fishing by vessels of the United States, which are-- (A) necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery; (B) described in this subsection or subsection (b), or both; and (C) consistent with the National Standards, the other provisions of this Act, regulations implementing recommendations by international organizations in which the United States participates (including but not limited to closed areas, quotas, and size limits), and any other applicable law;

The proposed amendment would maintain current management measures to rebuild the stock and address overfishing. Alternative 1E could potentially reduce discard and waste for sectors experiencing early closures in the commercial tilefish fishery. Furthermore, this alternative has the potential to reduce fishing capacity as it is expected that the proposed IFQ system would allow fishermen to improve overall fishing methods by providing fishermen more flexibility in deciding when, where, and how to fish.

Alternative 9B is expected to allow for an increase the accuracy and timely reporting of tilefish landings and thus improve management.

The implementation of party/charter permits and reporting requirements under alternative 12B would allow for the collection of better data for this sector of the fishery.

Alternative 13B would implement caps on the number of fish that recreational anglers are allowed to land is expected to limit the intake of tilefish by the recreational fishery and thus meet the management and recovery objectives of the FMP.

Alternative 14B would allow for better monitoring of tilefish landings in the management unit. This alternative would likely ensure that golden tilefish landings from Maine through Virginia are properly deducted from the overall golden tilefish TAL. As tilefish landings are properly reported indicating where they came from, the management of the tilefish stock will be enhanced.

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

Sections 6.1 and 6.5 in this document include a description o the fisheries managed under this FMP.

<u>PROVISION 3</u> - Assess and specify the present and probable future condition of, and the maximum sustainable yield and optimum yield from, the fishery, and include a summary of the information utilized in making such specification;

The specification of annual management measures under this FMP includes the identification of MSY and OY. The species managed under this FMP has threshold criteria for identifying when the stock is overfished. This discussion is presented in section 6.1 of this document.

<u>PROVISION 4</u> - Assess and specify-- (A) the capacity and the extent to which fishing vessels of the United States, on an annual basis, will harvest the optimum yield specified under paragraph (3); (B) the portion of such optimum yield which, on an annual basis, will not be harvested by fishing vessels of the United States and can be made available for foreign fishing; and (C) the capacity and extent to which United States fish processors, on an annual basis, will process that portion of such optimum yield that will be harvested by fishing vessels of the United States;

Alternative 1E (IFQ system) will constrain the possibility of increased overcapitalization in the tilefish. The specification of annual management measures under this FMP includes analyses the fisheries' ability to harvest OY.

<u>PROVISION 5</u> - Specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, and charter fishing in the fishery, including, but not limited to, information regarding the type and quantity of fishing gear used, catch by species in numbers of fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, and the estimated processing capacity of, and the actual processing capacity utilized by, United States fish processors;

Section 6 in this document includes an extensive presentation of pertinent data for the tilefish fisheries, and as such, satisfies this provision.

<u>PROVISION 6</u> - Consider and provide for temporary adjustments, after consultation with the Coast Guard and persons utilizing the fishery, regarding access to the fishery for vessels otherwise prevented from harvesting because of weather or other ocean conditions affecting the safe conduct of the fishery; except that the adjustment shall not adversely affect conservation efforts in other fisheries or discriminate among participants in the affected fishery;

No preferred alternative in this amendment addresses this provision.

<u>PROVISION 7</u> - Describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 305(b)(1)(A), minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat;

Section 6.3 of this document describes and identifies EFH in order to satisfy this provision.

<u>PROVISION 8</u> - In the case of a fishery management plan that, after January 1, 1991, is submitted to the Secretary for review under section 304(a) (including any plan for which an amendment is submitted to the Secretary for such review) or is prepared by the Secretary, assess and specify the nature and extent of scientific data which is needed for effective implementation of the plan;

The preparation of this amendment included a review of the scientific data that were available to assess the impacts of all of the preferred alternatives in this amendment. Alternatives 16B and 17C specifically improve the FMP in order to bring it into compliance with updates to this scientific information.

<u>PROVISION 9</u> - Include a fishery impact statement for the plan or amendment (in the case of a plan or amendment thereto submitted to or prepared by the Secretary after October 1, 1990) which shall assess, specify, and describe the likely effects, if any, of the conservation and management measures on-- (A) participants in the fisheries and fishing communities affected by the plan or amendment; and (B) participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants;

Section 7.0 of this document provides an extensive assessment of the likely effects of the actions proposed in this amendment on fishery participants and communities.

<u>PROVISION 10</u> - Specify objective and measurable criteria for identifying when the fishery to which the plan applies is overfished (with an analysis of how the criteria were determined and the relationship of the criteria to the reproductive potential of stocks of fish in that fishery) and, in the case of a fishery which the Council or the Secretary has determined is approaching an overfished condition or is overfished, contain conservation and management measures to prevent overfishing or end overfishing and rebuild the fishery;

The species managed under this FMP has threshold criteria for identifying when the stock is overfished. This discussion is presented in section 6.1 of this document.

<u>PROVISION 11</u> - Establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority-- (A) minimize bycatch; and (B) minimize the mortality of bycatch which cannot be avoided;

This FMP is in compliance with this provision as established through the implementation of the Standardized Bycatch Reporting Methodology (SBRM) Amendment for fisheries in the Northeast Region.

<u>PROVISION 12</u> - Assess the type and amount of fish caught and released alive during recreational fishing under catch and release fishery management programs and the mortality of such fish, and include conservation and management measures that, to the extent practicable, minimize mortality and ensure the extended survival of such fish;

No preferred alternative in this amendment addresses this provision.

<u>PROVISION 13</u> -Include a description of the commercial, recreational, and charter fishing sectors which participate in the fishery and, to the extent practicable, quantify trends in landings of the managed fishery resource by the commercial, recreational, and charter fishing sectors;

The commercial and recreational components of the tilefish fishery are addressed in section 6.1 of this document. However, as indicated in that section, the recreational component of the fishery is not significant.

<u>PROVISION 14</u> - To the extent that rebuilding plans or other conservation and management measures which reduce the overall harvest in a fishery are necessary, allocate any harvest restrictions or recovery benefits fairly and equitably among the commercial, recreational, and charter fishing sectors in the fishery;

As previously indicated, the current FMP regulations allow for tilefish to be harvested by the recreational sector. When the FMP was first developed, the recreational participation in this fishery was very small and there was not a substantial directed recreational fishery. As such, the original FMP does not contain management measures for the recreational fishery. However, some Council members and stakeholders have indicated that they have seen an increase in recreational tilefish landings and would like to readdress this sector of the fishery. Currently, it is thought that much of the catch by the recreational sector is not captured through federal reporting requirements. Since the catch data for this sector is not fully known, no quota is set aside for the recreational fishing sector, nor is catch counted towards the total allowable landings for the fishery. Implementing caps on the number of fish that recreational anglers are allowed to land (alternative 13B) is likely to limit the intake of tilefish by the recreational fishery and thus meet the management and recovery objectives of the FMP.

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

The original FMP implemented a stock rebuilding strategy. A “benchmark” stock assessment conducted at the NEFSC sponsored SARC/SAW every three years from which the specifics of the B_{MSY}, F_{MSY}, and other biological reference points could change which thus could warrant changes in the actual TAL. The strategy itself would not change, in that the 10 year rebuilding duration, with 50 percent probability of achieving the B_{MSY} target, and the TAL are the measures used by the Committee and Council to get to the target. In addition, the annual specifications process is intended to provide the opportunity for the Council and NMFS to regularly assess the status of the fishery and to make necessary adjustments to ensure that there is a reasonable expectation of meeting the objectives of the FMP and the targets associated with the rebuilding

programs under the FMP. While the preferred alternative under the rebuilding plan is a constant harvest strategy, there would be annual quota reductions for previous overages of the quota.

9.3 Essential Fish Habitat Assessment

The Magnuson Stevens Act / EFH Provisions (50 CFR 600.920(e)(3)) requires that any Federal action which may adversely affect EFH must include a written assessment of the affects of that action on EFH. The following EFH Assessment satisfies this requirement. Tilefish have EFH designated in many of the same bottom habitats that have been designated as EFH for many other federally managed species. Specific habitats that are designated as EFH and are important to tilefish are described in section 6.3 of this document. New EFH descriptions for tilefish eggs and larvae and for juveniles and adults are proposed as part of this amendment (see Item #16 in the Executive Summary and section 5.16). This amendment also proposes a new HAPC designation for tilefish eggs and larvae (Item #17 in the Executive Summary and section 5.17).

9.3.1 Description of Action

The purpose of the proposed action and a brief description of the principal management measures included in it are presented in section 4.0 of this document. Detailed descriptions of the alternatives proposed in this amendment document are provided in section 5.0. In general terms, the proposed action under this amendment would: implement an IFQ program/allocation; establish IFQ permanent transferability of ownership; establish IFQ temporary transferability of ownership; establish IFQ share accumulation guidelines or limitations; implement commercial trip limits in the part-time category; address fees and cost recovery; establish flexibility to revise/adjust the IFQ program; establish IFQ reporting requirements; modify the IVR reporting requirements; implement recreational party/charter permits and reporting requirements; implement recreational bag-size limits; improve monitoring of tilefish commercial landings; expand the list of management measures that can be adjusted via the framework adjustment process; modify EFH designation; modify HAPC designation; implement measures to reduce gear impacts on EFH; and establish methods for collecting royalties under a Tilefish IFQ system.

Under the EFH Final Rule, “Councils must act to prevent, mitigate, or minimize any adverse effect from fishing, to the extent practicable, if there is evidence that a fishing activity adversely affects EFH in a manner that is more than minimal and not temporary in nature...” “Adverse effect” means any impact that reduces the quality or quantity of EFH. The original fishing impact analysis for the tilefish fishery (MAFMC 2000) concluded that there was no evidence that tilefish EFH is adversely impacted by federally-managed fishing activities. The revised gear effects evaluation in Appendix E of this document determined that one specific type of tilefish habitat - clay outcrop/pueblo habitats that occur in the steep walls of certain submarine canyons that bisect the outer continental shelf – is highly vulnerable to bottom trawling. That evaluation indicates that the potential impact of bottom trawls to these outcrops is “more than minimal and not temporary in nature.” As such, this amendment proposes alternatives to mitigate impacts of bottom otter trawls on this habitat type for tilefish (see section 5.18).

9.3.2 Potential Adverse Effects of the Action on EFH

Section 5.0 describes all of the management measures considered in this document and highlights the preferred alternatives. Analysis of impacts of all alternatives on habitat is provided in section 7.0 of this document. A summary of the potential habitat impact of each management measure considered in this amendment is presented in Box 9.3.2 below.

The actions proposed in this document are necessary to continue to meet the objectives of the FMP. Relative to the No Action alternative, the potential habitat impacts of the proposed management measures range from no impacts to positive impacts.

9.3.3 Proposed Measures to Avoid, Minimize, or Mitigate Adverse Impacts of This Action

This action does not include any measures that will adversely impact EFH for tilefish or any other federally-managed species. It does propose to minimize the "more than minimal" adverse impacts of bottom trawling on EFH for juvenile and adult tilefish by the prohibiting the use of bottom trawls in portions of four canyons (Norfolk, Veatch, Lydonia, and Oceanographer; alternative 18C). In addition, the revised EFH and HAPC designations proposed in this action are expected to have an indirect positive benefit on EFH. A summary of the potential impacts of these measures is presented in Box 9.3.2 below.

9.3.4 Conclusions

All of the action alternatives proposed in this amendment may have effects on EFH that range from impacts remaining the same to impacts that are less than existing impacts. As such, the expected overall effect of the proposed action on habitat is a net positive in that the implementation of the preferred alternatives 16B and 17C is associated with neutral but potentially positive impacts and alternative 18C is associated with positive impacts, while all the other preferred alternatives are associated with null effects on habitat.

Given that none of the proposed management measures would negatively impact EFH, and because the proposed action includes four canyon GRAs that are expected to minimize the adverse impacts of bottom trawling on tilefish EFH to the extent practicable, this amendment meets the habitat protection requirements described in section 305(a)(7) of the Magnuson-Stevens Act.

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Box 9.3.2. Summary of evaluated management measures and their expected impacts on EFH. (*Preferred alternatives.)

Management Measure	Impact	Explanation
IFQ Allocation (Alternatives 1A through 1F; **1E***)	0	Not expected to change fishing effort.
Permanent IFQ Transferability of Ownership (Alternatives 2A through 2E; **2B***)	0	Not expected to change fishing effort.
IFQ Leasing (Alternatives 3A through 3E; **3B***)	0	Not expected to change fishing effort.
IFQ Share Accumulation (Alternatives 4A through 4F; **4B***)	0	Not expected to change fishing effort.
Commercial Trip Limit (Alternatives **5A*** through 5B)	0	Not expected to change fishing effort.
Fees and Cost Recovery (Alternatives 6A through 6C; **6B***)	0	Administrative measure should result in no change in fishing effort.
IFQ Review Process (Alternatives 7A through 7C; **7B***)	0	Administrative measure should result in no change in fishing effort.
IFQ Reporting Requirements (Alternatives 8A through **8B***)	0	Administrative measure should result in no change in fishing effort.
IVR Reporting Requirements (Alternatives 9A through **9B***)	0	Administrative measure should result in no change in fishing effort.
Commercial Vessel Logbook Reports (Alternatives 10A through 10C)	N/A	Determination is not applicable because no further consideration was given to alternatives 10B and 10C in the document beyond section 5.10. That is, alternatives to the current system were considered but rejected for further analysis.
Hook Size Restrictions (Alternative 11A)	N/A	See note below.
Recreational Party/Charter Permits and Reporting Requirements (Alternatives 12A through **12B***)	0	Administrative measure should result in no change in fishing effort.
Recreational Bag-Size Limits (Alternatives 13A through 13F; **13B***)	0	Not expected to change fishing effort.
Improve Monitoring of Golden Tilefish Landings Caught in the Mid-Atlantic Region (Alternatives 14A through **14B***)	0	Not expected to change fishing effort.
Framework Adjustment Process (Alternatives 15A through **15B***)	0	Administrative measure should result in no change in fishing effort.

Note: Alternatives 1F, 4F, 7C, 10B, 10C, 11A, 16C, 18D, and 19E were considered but rejected for further analysis. No further analysis was given to these alternatives in the document beyond justification for rejection in section 5.0. Therefore, determination is not applicable to these alternatives.
N/A = not applicable.

Box 9.3.2 (continued). Summary of evaluated management measures and their expected impacts on EFH. (*Preferred alternatives.)

Management Measure	Impact	Explanation
EFH Designation for Eggs/Larvae and Juveniles/Adults (Alternatives 16A through 16C; **16B***)	0/+	16A -- Neutral (status quo) **16B*** -- Neutral, but potentially positive if smaller EFH area leads to more effective management to reduce habitat impacts of fishing.
HAPC Designation for Juveniles/Adults (Alternatives 17A through 17D; **17C***)	17A = 0 17B = 0/+ **17C*** & 17D = 0/+	17A -- Neutral (status quo) 17B -- Neutral, but potentially positive if smaller EFH area leads to more effective management to reduce habitat impacts of fishing. **17C*** & 17D -- Neutral to potentially positive impacts if these areas are managed to protect vulnerable habitat areas and their ecological function.
Measures to Reduce Gear Impact on EFH (Alternatives 18A through 18D; **18C***)	18A = - 18B = 0/+ **18C*** = +	18A -- Negative impacts since it affords no protection for vulnerable tilefish habitat from adverse impacts of current or future bottom trawling. 18B -- Neutral to potentially positive if there are clay outcrop habitats in the HAPC (not known); indirect positive impacts for EFH of other managed species in GRA. **18C*** -- Positive impacts; more effective protection of highly vulnerable tilefish EFH and indirect benefits for other managed species and highly sensitive benthic organisms (e.g., corals) within canyon areas.
Royalty Collection System (Alternatives **19A*** through 19E)	0	Administrative measure should result in no change in fishing effort.

Note: Alternatives 1F, 4F, 7C, 10B, 10C, 11A, 16C, 18D, and 19E were considered but rejected for further analysis. No further analysis was given to these alternatives in the document beyond justification for rejection in section 5.0. Therefore, determination is not applicable to these alternatives.
N/A = not applicable.

10.0 RALATIONSHIP TO OTHER APPLICABLE LAWS

10.1 National Environmental Policy Act NEPA

10.1.1 Introduction

NEPA requires preparation of an Environmental Impact Statement (EIS) for major Federal actions that significantly affect the quality of the environment. The Council published a Notice of Intent (NOI) to prepare this Amendment and the EIS in the Federal Register on March 23, 2005 [Vol. 70, No. 55, Page 14650].

10.1.2 Scoping

Notice of scoping meetings was published on the Federal register on March 3, 2005 [Vol. 70, No. 41, Page 10360] and March 18, 2005 [Vol. 70, No. 52, Page 13171]. NEPA requires that the Council conduct one or more scoping meetings to inform interested parties of the proposed action and alternatives, and to solicit comments on the range and type of analysis to be included in the EIS. The Council invited discussion on the scoping document and any other issues of concern at the scoping meeting as well as suggestions for appropriate management measures to consider during the development of this amendment. The Council held public scoping hearings in Southampton, NY Atlantic City, Egg Harbor Township, NJ. There were eight members of the public in attendance at each of the scoping hearings and five people presented oral comments at each of the scoping hearings. In addition, a total of 10 written comments were received by the Council. Comments were received by individuals representing the commercial fishing industry, NGOs, and representatives form miscellaneous interested parties.

Comments from stakeholders indicated several areas of controversy.

1) *Individual Fishing Quota allocation*: Some individuals were concerned regarding the time period used for IFQ allocation purposes.

2) *Share accumulation under an IFQ system*: Some individuals considered important to cap the amount of IFQ shares that a single individual could accumulate.

3) *Latent effort in the tilefish fishery*: Some parties suggested that the Council address the issue of latent effort and to evaluate the elimination of latent effort form the fishery.

4) *Record keeping and reporting requirements*: Some parties indicated that the current record keeping and reporting requirement in the commercial tilefish fishery needed to be improved.

5) *Recreational issues*: Several parties indicated that recreational landings needed to be reassessed to ensure that the objectives of the tilefish rebuilding program are met.

6) *Hook size/configuration*: The primary concern was that the implementation of hook size/configuration in the tilefish commercial fishery should be evaluated.

7) *Tilefish habitat*: It was suggested that the Council develop and consider alternatives to protect tilefish habitat.

10.1.3 Development of the EIS

The Council evaluated a reasonable range of alternatives under each of the proposed actions in the amendment/EIS. At its June 2007 meeting in Hampton, VA, the Council identified several of its preferred alternatives for the draft version of Amendment 1. Following approval of the draft document, and subsequent review by NMFS Northeast Regional Office (NERO), a Notice of Availability (NOA) for the draft document was published in the Federal Register [Vol. 72, No. 248/December 28, 2007, Page 73799] by the Environmental Protection Agency (EPA). Publication of the NOA initiated the Public Comment Period during which the Council accepted written and verbal comments. Verbal comments were accepted at four public hearings that were announced through the Federal Register [Vol. 73, No. 9/Monday, January 14, 2008, Page 2225] as well as through mass mailing. The public hearings were held in Hampton, VA; Riverhead, NY; Warwick, RI; and Toms River, NJ. A summary of the public comments on the DEIS is provided in Appendix J. All comments (written and verbal) were presented to the Council at the April 2008 meeting. At that meeting, the Council selected the final suite of management actions and voted to submit Amendment 1 to NMFS.

10.1.4 Determination of Significance

National Oceanic and Atmospheric Administration Administrative Order 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 to 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?

The proposed action presented in this document is not expected to jeopardize the sustainability of tilefish. The proposed IFQ system will not affect the rebuilding strategy for this species. Since this fishery is already operating under a hard TAL system, and the TAL is being fully harvested, it is not expected that the implementation of an IFQ program would negatively impact fishing mortality rates as the IFQ program would only be dividing and assigning the current quota to individual fishermen. Closing areas to otter trawl activity (GRA in Norfolk, Veatch, Lydonia, and Oceanographer canyons) would reduce gear impacts on juvenile and adult tilefish EFH. The

GRA alternative would result in potentially positive impacts on the managed resource if the protection it affords to vulnerable tilefish habitat (i.e., clay outcrop/ pueblo habitats) within these canyons results in an increase in tilefish resource productivity. The proposed recreational measures are likely to provide better monitoring and understanding of this sector of the fishery and thus enhance the long-term recovery of the stock. The rest of the alternatives (e.g., sale of IFQ shares, lease of IFQ allocation, IFQ share accumulation, IFQ fees and cost recovery, IFQ program review process, and reporting requirements) are for the most part administrative in nature and do not impact the sustainability of the managed resource. However, it is possible that if IFQ shares were to be bought (or leased) by individuals not intending to use them for fishing could potentially have positive biological implications on the stock. Lastly, the implementation of cost recovery fees could also enhance the sustainability of the stock as the collected fees would be used to recover the costs directly related to the management, enforcement, and data collection and analysis of IFQ programs. The preferred alternatives are consistent with the FMP objectives.

2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?

The proposed action presented in this document is not expected to jeopardize the sustainability of any non-target species. This action is not expected to alter fishing methods or activities.

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?

The proposed action as described in section 7.0 of this document is not expected to cause damage to the ocean, coastal habitats, and/or EFH as defined under the Magnuson-Stevens Act and identified in the amendment document. The directed commercial fishery for tilefish is largely prosecuted by longline. According to 2005 VTR data, 100% of the tilefish landed by directed commercial trips employed longline gear. Otter trawls (bottom) may also be used, but have limited utility because of the habitat preferred by tilefish. Otter trawls (bottom) are only effective where the bottom is firm, flat, and free of obstructions. As such, most landings of tilefish with bottom otter trawl (fish) are incidental, and tilefish are not being specifically targeted with this gear. Longlines have minimal detectable impacts to marine habitats. Longlines modify the structural component of the habitat, but the impacts are short-term and temporary (Appendix E).

The proposed action would close areas to otter trawl activity (GRA in Norfolk, Veatch, Lydonia, and Oceanographer canyons). Although impacts by otter trawl fisheries on clay outcrops/pueblo habitat in these canyons is likely to be currently minimal, the proposed closed areas should ensure that no increased threat to EFH in those areas could occur from bottom otter trawl fishing activities. The GRA measures proposed in this action will either reduce the amount of time that bottom trawling vessels spend fishing in the proposed closed canyons or maintain it at the same level as the status quo alternative. In either case, no adverse impacts to the marine habitats or

EFH are expected. Similarly, none of the other measures included in the proposed action will have any adverse habitat impact.

4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?

No substantial changes in fishing behavior that would affect safety are anticipated. However, it is anticipated that the implementation of an IFQ system would eliminate derby style fishing and associated race for the fish that exists under the current management system, especially for vessels currently participating in the part-time category. It is expected that under an IFQ system fishermen would not have to sea during unsafe weather conditions in order to compete with someone else for a share of the quota. Fishermen could decide when it is better for them to harvest quota share taking into consideration weather conditions and price at the dock. The overall effect of the proposed actions on this fishery, including the communities in which they operate, will not impact adversely public health or safety. NMFS will consider comments received concerning safety and public health issues.

5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?

The proposed action is expected to alter fishing methods or activities. The proposed action is not expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort (see section 7.0). Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on this fishery.

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.)?

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. This action is not expected to significantly alter fishing methods or activities, nor is it expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The proposed closure of Norfolk, Veatch, Lydonia, and Oceanographer canyons bottom otter trawl fishing will likely contribute to biodiversity and ecosystem stability over the long-term.

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

The proposed action is not expected to have a substantial impact on the natural or physical environment. Commercial capture of tilefish in the Mid-Atlantic region is largely prosecuted by longline. Longlines modify the structural component of the habitat, but the impacts are short-term and temporary. The commercial fishery for tilefish is primarily prosecuted with bottom longline gear. Catch disposition analysis indicates that the tilefish fishery is very clean as the overall pounds landed and/or discarded of other species is low for directed tilefish trips. The

proposed action is not expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, there are no social or economic impacts interrelated with significant natural or physical environmental effects (see section 7.0).

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

The impacts of the proposed measures on the human environment are described in section 7.0 of this document. The most controversial measure contained in this document is the implementation of an IFQ system. Comments from stake holders indicating areas of controversy are discussed in Appendix J (Public Comment Summary and Public Comment Letters).

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?

The tilefish fishery is not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas.

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

The impacts of the proposed action on the human environment are described in section 7.0 of this document. None of the proposed measures is expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The measures contained in this action are not expected to have highly uncertain effects or to involve unique or unknown risks on the human environment.

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

As discussed in section 8.0 of this document, the proposed action is expected to have individually insignificant, but cumulatively significant impacts. The proposed action, together with past, present, and future actions is expected to result in significant improvement in the condition of the managed resources, habitat and long-term social and economic conditions.

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?

The impacts of the proposed measure on the human environment are described in section 7.0 of this document. The tilefish fishery is not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National

Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources. Therefore, the proposed action is not expected to affect any of these areas.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

There is no evidence or indication that the prosecution of the tilefish fishery has ever resulted in the introduction or spread of nonindigenous species. This action is not expected to alter fishing methods or activities in the tilefish fishery, or the spatial and/or temporal distribution of this fishery. Therefore, it is highly unlikely that the action described in this EIS would be expected to result in the introduction or spread of a non-indigenous species.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

The proposed action is not expected to establish a precedent for future actions with significant effects in this fishery or other fisheries. This action does not result in significant effects, nor does it represent a decision in principle about a future consideration.

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

The proposed action is not expected to alter fishing methods or activities in the tilefish fishery such that they threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. In fact, the proposed measures have been found to be consistent with other applicable laws discussed in section 9 (see below).

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?

The impacts of the proposed alternatives on the biological, physical, and human environment are described in section 7.0 of this EIS. The cumulative effects of the preferred alternatives on the human environment are described in sections 8.0 of this EIS. The proposed action is not expected to significantly alter fishing methods or activities in the tilefish fishery, or the spatial and/or temporal distribution of this fishery.

The cumulative effects of the proposed action on target and non-target species are detailed in section 7.6 of this document. None of the proposed specifications or RSA projects is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The synergistic interaction of improvements in the efficiency of the fishery through implementation of this action is expected to generate positive cumulative effects overall.

The Council has reviewed the above criteria relative to the action proposed in Amendment 1 to the Tilefish FMP. Based on these criteria, the Council has determined that the Proposed Action represents a significant action and has prepared an EIS in accordance with the National

Environmental Policy Act. The Final EIS for the action proposed in this amendment is included in this integrated document.

10.2 Endangered Species Act

Sections 6.4, 7.1.4, through 7.19.4 of the EIS should be referenced for an assessment of the impacts of the proposed action on endangered and protected species. This action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

10.3 Marine Mammal Protection Act

Sections 6.4, 7.1.4, through 7.19.4 of the EIS should be referenced for an assessment of the impacts of the proposed action on marine mammals. This action is not expected to affect marine mammals or critical habitat in any manner not considered in previous consultations on the fisheries.

10.4 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals.

NMFS must determine whether the FMP will affect a state's coastal zone. If it will, the amendment must be evaluated relative to the state's approved CZM program to determine whether it is consistent to the maximum extent practicable. The states have 60 days in which to agree or disagree with the NMFS's evaluation. If a state fails to respond within 60 days, the state's agreement may be presumed. If a state disagrees, the issue may be resolved through negotiation or, if that fails, by the Secretary.

10.5 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by Federal agencies. The purpose is to ensure public access to the Federal rulemaking process and to give the public notice and an opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of a fishery management plan and subsequent amendments and framework adjustments. Development of this amendment provided many opportunities for public review, input, and access to the rulemaking process. This proposed document was developed as a result of a multi-stage process that involved review by affected members of the public. Notice of

scoping meetings was published on the Federal register on March 3, 2005 [Vol. 70, No. 41, Page 10360] and March 18, 2005 [Vol. 70, No. 52, Page 13171]. NEPA requires that the Council conduct one or more scoping meetings to inform interested parties of the proposed action and alternatives, and to solicit comments on the range and type of analysis to be included in the EIS. The Council held public scoping hearings in Southampton, NY (March 21, 2005) and Atlantic City, Egg Harbor Township, NJ (March 22, 2005) and accepted scoping comments through April 22, 2005. A notice of intent to prepare an EIS was published in the Federal Register on March 23, 2005 [Vol. 70, No. 55, Page 14650]. The Council evaluated a reasonable range of alternatives under each of the proposed actions in the amendment/EIS. At its June 2007 meeting in Hampton, VA, the Council identified several of its preferred alternatives for the draft version of Amendment 1. Following approval of the draft document, and subsequent review by NMFS Northeast Regional Office (NERO), a Notice of Availability (NOA) for the draft document (DEIS) was published in the Federal Register [Vol. 72, No. 248/December 28, 2007, Page 73799] by the Environmental Protection Agency (EPA). Publication of the NOA initiated the Public Comment Period during which the Council accepted written and verbal comments. Verbal comments were accepted at four public hearings that were announced through the Federal Register [Vol. 73, No. 9/Monday, January 14, 2008, Page 2225] as well as through mass mailing. The public hearings were held in Hampton, VA (January 30, 2008); Riverhead, NY (February 4, 2008); Warwick, RI (February 5, 2008); and Toms River, NJ (February 6, 2008). The Council's deadline for the receipt of public comments was set as February 11, 2008. All comments (written and verbal) were presented to the Council at the April 2008 meeting. At that meeting, the Council selected the final suite of preferred alternatives to be included in the FIES.

10.6 Section 515 (Information Quality Act)

Utility of Information Product

The proposed document includes: A description of the management issues, a description of the alternatives considered, and the reasons for selecting the preferred management measures, to the extent that this has been done. These actions propose modifications to the existing FMP. These proposed modifications implement the FMP's conservation and management goals consistent with the Magnuson-Stevens Act as well as all other existing applicable laws.

This proposed amendment is being developed as part of a multi-stage process that involves review amendment document by affected members of the public. The public has had the opportunity to review and comment on management measures during the Tilefish Committee Meeting held with Advisors in Secaucus, NJ (April 26, 2007); and public hearings held in Hampton, VA (January 30, 2008); Riverhead, NY (February 4, 2008); Warwick, RI (February 5, 2008); and Toms River, NJ (February 6, 2008); and during the MAFMC meeting held on April 10, 2008 in Annapolis, MD. The public has had further opportunity to comment on this amendment through the 45-day public hearing process, the above mentioned public hearing meetings. The public will have further opportunity to comment once NMFS publishes a request for comments on the proposed regulations in the FR. The Federal Register notice that announces

the proposed rule and the implementing regulations will be made available in printed publication and on the website for the Northeast Regional Office.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g., Confidentiality of Statistics of the Magnuson-Stevens Act; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act.).

Objectivity of Information Product

The category of information product that applies for this product is "Natural Resource Plans."

In preparing amendment documents, the Council must comply with the requirements of the Magnuson-Stevens Act, the National Environmental Policy Act, the Regulatory Flexibility Act, the Administrative Procedure Act, the Paperwork Reduction Act, the Coastal Zone Management Act, the Endangered Species Act, the Marine Mammal Protection Act, the Data Quality Act, and Executive Orders 12630 (Property Rights), 12866 (Regulatory Planning), 13132 (Federalism), and 13158 (Marine Protected Areas).

The review process for this amendment involves the Mid-Atlantic Fishery Management Council, the Northeast Fisheries Science Center, the Northeast Regional Office, and NOAA Fisheries headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics and biology, as well as the social sciences. The Council review process involves public meetings at which affected stakeholders have opportunity to provide comments on the specifications document. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the amendment document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

The supporting materials and analyses used to develop the measures in the amendment are contained in the amendment document and to some degree in previous amendments and/or FMPs as specified in this document.

10.7 Paperwork Reduction Act

The Paperwork Reduction Act concerns the collection of information. The intent of the Act is to minimize the Federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government.

Amendment 1 contains several alternatives that would require new collection of information requirements subject to the PRA. The collection of information requirements associated with the measures proposed in this amendment was addressed through a separate analysis conducted by NMFS. The PRA package prepared in support of this action, including the required forms and supporting statements, will be submitted to NMFS headquarters by the NMFS Northeast Regional Office under separate cover.

10.8 Impacts of the Plan Relative to Federalism/EO 13132

This specifications document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

10.9 Environmental Justice/EO 12898

This EO provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." EO 12898 directs each Federal agency to analyze the environmental effects, including human health, economic, and social effects of Federal actions on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA. Agencies are further directed to "identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices."

The proposed actions are not expected to affect participation in the tilefish fisheries. Since the proposed action represents no changes relative to the current levels of participation in these fisheries, no negative economic or social effects are anticipated as a result (see section 7.0). Therefore, the proposed action is not expected to cause disproportionately high and adverse human health, environmental or economic effects on minority populations, low-income populations, or Indian tribes.

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10.10 Regulatory Impact Review/Initial Regulatory Flexibility Analysis (RFA/IRFA)

10.10.1 Introduction

This section provides the analysis and conclusions to address the requirements of Executive Order 12866 and the Regulatory Flexibility Act (RFA). Since many of the requirements of these mandates duplicate those required under the Magnuson-Stevens Act and NEPA, this section contains references to other sections of this document. The following sections provide the basis for concluding that the proposed actions are not significant under E.O. 12866 and will not have a significant economic impact on a substantial number of small entities under the RFA.

NMFS requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement or significantly amend an FMP. The RIR in section 11.10.2 provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis reviews the problems and policy objectives prompting the regulatory proposals and evaluates the alternatives presented as a solution. This analysis ensures that the regulatory agency systematically and comprehensively considers all available alternatives so public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses multiple items in the regulatory philosophy and principles of Executive Order (EO) 12866. Also included under section 11.10.3 is an Initial Regulatory Flexibility Analysis (IRFA) which evaluates the economic impacts of the alternatives on small business entities.

10.10.2 Evaluation of EO 12866 Significance

10.10.2.1 Description of the Management Objectives

A complete description of the purpose and need and objectives of this proposed rule is found under section 4.0 of this document. The proposed actions are consistent with, and do not modify those goals and objectives. This action is taken under the authority of the MSA and regulations at 50 CFR part 648.

10.10.2.2 Description of the Fishery

Section 6.0 of this document contains a detailed description of the fisheries managed under this FMP.

10.10.2.3 A Statement of the Problem

A statement of the problem for resolution is presented under section 4.0 of this document. The need for this amendment is to address issues and problems that have been identified since the FMP was first implemented. The purpose of this amendment is to achieve the management objectives of the FMP as outlined in section 4.3, as well as to evaluate and consider the implementation of an IFQ program, new reporting requirements, gear modifications, recreational fishing issues, and review the EFH components of the FMP.

10.10.2.4 A Description of Each Alternative

There are 70 alternatives being considered in this amendment. These are fully described in section 5.0 of this document, and are also listed in the next section.

10.10.2.5 Analysis of Alternatives

The analysis on the economic impacts of the alternatives is presented in section 7.0 of this document. This section summarizes and further describes potential economic impacts of the proposed action.

This section evaluates the economic impacts of the management measures considered in this amendment. For each alternative, potential impacts on several areas of interest are discussed such that the economic effects of the various alternatives are comprehensively evaluated. The types of effects that are considered include the following changes in landings, prices, consumer and producer benefits, harvesting costs, enforcement costs, and distributional effects. Due to the lack of an empirical model for these fisheries and knowledge of elasticities of supply and demand, a qualitative approach to the economic assessment was adopted. Nevertheless, quantitative measures are provided whenever possible. A more detailed description of the economic concepts involved can be found in "Guidelines for Economic Review of National Marine Fisheries Service Regulatory Actions" (NMFS 2007), as only a brief summary of key concepts will be presented here.

Benefit-cost analysis is conducted to evaluate the net social benefit from changes in consumer and producer surpluses that are expected to occur upon implementation of a regulatory action. Total Consumer Surplus (CS) is the difference between the amounts consumers are willing to pay for products or services and the amounts they actually pay. Thus CS represents net benefit to consumers. When the information necessary to plot the supply and demand curves for a particular commodity is available, CS is represented by the area that is below the demand curve and above the market clearing price where the two curves intersect. Since an empirical model describing the elasticities of supply and demand for these species is not available, it was assumed that the price for this species was determined by the market clearing price or the intersection of the supply and demand curves. These prices were the base prices used to determine potential changes in prices due to changes in landings.

Net benefit to producers is producer surplus (PS). Total PS is the difference between the amounts producers actually receive for providing goods and services and the economic cost producers bear to do so. Graphically, it is the area above the supply curve and below the market clearing price where supply and demand intersect. Economic costs are measured by the opportunity cost of all resources including the raw materials, physical and human capital used in the process of supplying these goods and services to consumers.

One of the more visible societal costs of fisheries regulation is that of enforcement. From a budgetary perspective, the cost of enforcement is equivalent to the total public expenditure

devoted to enforcement. However, the economic cost of enforcement is measured by the opportunity cost of devoting resources to enforcement vis à vis some other public or private use, and/or by the opportunity cost of diverting enforcement resources from one fishery to another.

MEASURES AFFECTING FISHERY PROGRAM ADMINISTRATION

Individual Fishing Quota Program

1 Individual fishing quota (IFQ)

The IFQ alternatives and all other alternatives addressed in this amendment were described in section 5.0. There are 20 alternatives considered for the purpose of initial IFQ allocation. Alternative (1F) was considered but rejected for further analysis. More specifically, alternative 1F would not restrict the initial eligibility for the IFQ ownership, and as such, anyone could obtain IFQ allocation. A detailed description of each IFQ allocation alternative is presented in section 5.1 and the analysis of impacts is presented in section 7.1. In addition, a brief description of these alternatives is presented in Box 9.10 below.

The Tilefish FMP implemented a limited entry program and a tiered commercial quota allocation of the TAL. The original FMP does not address how the quota is to be distributed among vessels within each of the three fishing categories. However, individuals in the full-time tier 1 category have developed a system to further allocate the overall tier 1 allocation to vessels within that category. According to stakeholders, this "cooperative understanding" allowed the full-time tier 1 participants to spread landings throughout the year to maximize their performance. More specifically, under this "cooperative understanding," tier 1 participants decide at the vessel level when to fish, how much to fish, and when to land the fish harvested in order to maximize ex-vessel price (by avoiding market gluts and spreading landings throughout the year). Full-time tier 1 stakeholders would like to explore the possibility of implementing an IFQ program that would further stabilize the fishery and formalize their cooperative agreement. According to stakeholders, individuals participating in the full-time tier 2 and part-time categories have not implemented a "cooperative understanding" such as the one developed by full-time tier 1 participants.

The tilefish fishery is marked with overcapitalization. While there are fewer boats today participating in the fishery that when the FMP implementing the current limited access system was implemented, there are still more boats in the fishery than required for efficient harvesting of the TAL. Furthermore, derby fishing conditions in the part-time category (and to an extend the full-time tier 2 category as well) have forced early season closure in recent years. The current system may be preventing the full benefit from scale economies. The proposed IFQ system would eliminate derby style fishing and associated race for the fish that exists under the current management system. Fishermen would not have to go to sea during unsafe weather conditions in order to compete with someone else for a share of the quota. Fishermen could decide when it is better for them to harvest quota share taking into consideration weather conditions and price at the dock.

The range of evaluated IFQ allocation management measures would allow for a wide variety of systems to be implemented. The evaluated IFQ systems could implement quota shares for the full-time tier 1 category only, or for full-time tier1 and tier 2 categories only, or for all full-time and part-time categories. In all these cases, the chosen IFQ system would initially allocate the same proportion of the overall commercial quota by permit category under the IFQ system as it is done under the current limited entry program. That is, full-time tier 1 category vessels would still receive 66 percent of the TAL (after adjusting for incidental category landings), full-time tier 2 category vessels would receive 15 percent, and part-time category vessels would receive 19 percent. However, the IFQ system would allocate specific quota shares to vessels within the permit categories based on historical landings from one of three proposed sets of time periods (average landings for years 1988-1998, average landings for years 2001-2005, best five years from 1997 to 2005) or by dividing the overall quota for each permit category among all permitted vessels in each category.

As previously indicated, the proposed IFQ system has the potential to reduced fishing capacity as it is expected that these systems would allow fishermen to improve overall fishing methods by providing fishermen more flexibility in deciding when, where, and how to fish. The proposed IFQ system of quota share allocations is an economic solution to the race for fish. The reduction in fishing capacity could potentially be the highest under the IFQ systems that include the largest amount of categories of permit holders (e.g., alternative sets D and E). Furthermore, alternatives that would allocate the IFQ employing more current fishing participation (e.g., sub-alternatives 1C2, 1C3, 1D2, 1D3, and 1E) would also further reduce excess fishing capacity and latent fishing effort. However, it is important to mention that the degree of capacity reduction under the various IFQ measures presented in this document would also depend on various factors such as: a) adopted transferability rules (alternative 7.2); b) employment opportunities in other fisheries or economic sectors; c) the initial amount of allocated quota; d) capital availability and flexibility; e) credit availability; and f) skipper and crew experience. For example, marginal operations, with a limited quota shares allocation and high fishing opportunities and earnings in other fisheries (or sectors of the economy) may quickly exit the fishery, while operations with a larger quota shares, more experienced skipper and fishing crew, and/or significant less fishing opportunities and earnings in other fisheries (or sectors of the economy) may take longer or not exit the fishery at all. Marginal operations are expected to continue to fish for tilefish under an IFQ system as long as they can cover variable costs. By improving catch efficiency under an IFQ share system, operating costs could be lowered as fishermen have more flexibility in their input choices and trip planning. This in turn is expected to promote safer at-sea operating conditions.

The Council chose 1E as its preferred alternative because it will allow for the greatest flexibility to develop an IFQ system. More specifically the Council chose to implement an IFQ system for all three permit categories currently fishing under the limited access system. The apportionment of the IFQ allocation is to be distributed among qualifying vessels using average landings for the 2001-2005 period to allocate IFQ shares to full-time tier 1 and 2 vessels. For part-time vessels, an equal allocation for vessels that landed tilefish during the 2001-2005 period was used to allocate IFQ shares to that permit category.

Box 9.10. Brief description of the IFQ allocation alternatives included in this amendment. "Status" refers to whether an alternative is proposed or has been considered but rejected for further analysis in this FEIS.

Issue	Alternative	Status of Alternative	Description (see section 5.0)
IFQ Allocation	1A	Proposed (No Action)	Maintain status quo management system for tilefish
	1B1	Proposed	Full-time tier 1 permit holders only. Avg. landings 1988-1998
	1B2	Proposed	Full-time tier 1 permit holders only. Avg. landings 2001-2005
	1B3	Proposed	Full-time tier 1 permit holders only. Avg. landings best five years from 1997-2005
	1B4	Proposed	Full-time tier 1 permit holders only. Equal allocation
	1C1	Proposed	Full-time tier 1 & 2 permit holders only. Avg. landings 1988-1998
	1C2	Proposed	Full-time tier 1 & 2 permit holders only. Avg. landings 2001-2005
	1C2A	Proposed	Full-time tier 1 & 2 permit holders only. Equal category allocation based on 1C2
	1C3	Proposed	Full-time tier 1 & 2 permit holders only. Avg. landings best five years from 1997-2005
	1C3A	Proposed	Full-time tier 1 & 2 permit holders only. Equal category allocation based on 1C3
	1C4	Proposed	Full-time tier 1 & 2 permit holders only. Equal category allocation
	1D1	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Avg. landings 1988-1998
	1D1A	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Equal category allocation based on 1D1
	1D2	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Avg. landings 2001-2005
	1D2A	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Equal category allocation based on 1D2
	1D3	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Avg. landings best five years from 1997-2005
	1D3A	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Equal category allocation based on 1D3
	1D4	Proposed	Full-time tier 1 & 2 and part-time permit holders only. Equal category allocation
	1E	**Preferred**	Full-time tier 1, full-time tier 2, and/or part-time permit holders. Avg. landings for years 1988-1998, 2001-2005, or best five years from 1997-2005. Allocations based on %s associated with landings and/or equal division among all qualifying vessels
	1F	Considered but Rejected[a]	Do not restrict initial eligibility for the IFQ ownership

[a] Considered but rejected for further analysis. Basic consideration was given to impacts of the alternative; however, it was not considered a reasonable solution to the issue and was not given further consideration in the document beyond justification for rejection in section 5.1.F.

The specific vessel allocations associated with all the evaluated alternatives are fully described in section 7.1. In order to assess potential changes in fishing opportunities associate with the proposed IFQ share allocations, potential changes in fishing opportunities associated with the proposed IFQ allocations under the preferred IFQ would be compared (when possible) to the aggregate fishing opportunities that were available in 2005 (base year). As indicated in section 7.1, it is expected that landings for full-time vessels (tier 1 and 2) would not change under a tilefish IFQ system when compared to the landings generated by these vessels under the current limited access system in 2005 (base year).

The proposed IFQ system is not expected to change the overall amount of tilefish landed. Since this fishery is already operating under a hard TAL system, and the TAL is being fully harvested, it is not expected that the implementation of an IFQ program would negatively impact landings. The IFQ program would only be dividing and assigning the current quota to individual fishermen. Overall tilefish prices are not expected to significantly change and the overall landings are likely to remain constant under the current rebuilding scheme. However, it is likely that part-time vessels qualifying for IFQ allocations will likely spread their landings throughout the year (avoid derby fishing practices) and as such may received higher prices for their product. Assuming the current TAL allocated to the part-time vessels and the 2005 tilefish price differential between full-time and part-time vessels, it is expected that part-time vessels may generate revenue increases of approximately $253,000 resulting from spreading landings throughout the year and not engaging in derby fishing. A potential increase in tilefish prices would decrease consumer surplus.

If there is a change in the price of tilefish there will be associated changes in producer surplus (PS). The magnitude of the PS change will be associated with the price elasticity of demand for this species. The law of demand states that price and quantity demanded is inversely related. Given a demand curve for a commodity (good or service), the elasticity of demand is a measure of the responsiveness of the quantity that will be taken by consumers giving changes in the price of that commodity (while holding other variables constant). There are several major factors that influence the elasticity for a specific commodity. These factors largely determine whether demand for a commodity is price elastic or inelastic:[37]: 1) the number and closeness of substitutes for the commodity under consideration, 2) the number of uses to which the commodity can be put; and 3) the price of the commodity relative to the consumer's purchasing power (income). There are other factors that may also determine the elasticity of demand but they are not mentioned here because they are beyond the scope of this discussion. As the number and closeness of substitutes and/or the number of uses for a specific commodity increase, the demand for the specific commodity will tend to be more elastic. Demand for commodities that take a large amount of the consumer’s income are likely to be elastic compared to services with lower prices relative to the consumer’s income. It has been argued that the availability of substitutes is the most important of the factors listed in determining the elasticity of demand for a specific commodity (Leftwich 1973; Awk 1988). Seafood demand in general appears to be elastic. In fact, for most species, product groups, and product forms, demand is elastic (Asche

[37] Price elasticity of demand is elastic when a change in quantity demanded is large relative to the change in price. Price elasticity of demand is inelastic when a change in quantity demanded is small relative to the change in price. Price elasticity of demand is unitary when a change in quantity demanded and price are the same.

and Bjørndal 2003). For example, an increase in the ex-vessel price of tilefish may increase PS. A decrease in the ex-vessel price of tilefish may also increase PS if we assumed that the demand for tilefish is moderate to highly elastic. However, the magnitude of these changes cannot be fully assessed without knowledge of the exact shape of the market demand curve for these species.

There is also a possibility that the IFQ program may also affect the bargaining power dynamics. When fishermen have a more flexibility in marketing decisions relative to their fishing trips, they may be able to negotiate better prices for their product. As such, there is a possibility that they may be bale to more rent previously enjoyed by dealers.

Under status quo alternative (alternative 1), the commercial tilefish fleet will likely continue to be characterized for higher than necessary levels of capital investment and increased operating costs. In addition, shortened seasons and limited at-sea safety, price fluctuations, and depressed ex-vessel price would continue mainly for the part-time and full-time tier 2 categories. The implementation of an IFQ system would likely decrease overcapitalization, spread the fishing season throughout the year, decrease operating costs by allowing fishermen to better manage their input mix and trip-planning, and potentially increase ex-vessel prices.

One of the more visible societal costs of fisheries regulation is that of enforcement. From a budgetary perspective, the cost of enforcement is equivalent to the total public expenditure devoted to enforcement. However, the economic cost of enforcement is measured by the opportunity cost of devoting resources to enforcement vis à vis some other public or private use, and/or by the opportunity cost of diverting enforcement resources from one fishery to another. Properly defined, enforcement costs are not equivalent to the budgetary expense of dockside or at-sea inspection of vessels. Rather, enforcement costs from an economic perspective are measured by opportunity cost in terms of foregone enforcement services that must be diverted to enforcing summer flounder, scup, and black sea bass regulations. The proposed measures are not expected to drastically change enforcement costs. However, it is possible that these costs would slightly decrease. A detailed discussion regarding fees and cost recovery measures (fees to recover the costs directly related to the management, enforcement, and data collection) is presented below (alternative 6).

2 Permanent IFQ transferability of ownership

- Alternative 2A: No Action (IFQ shares would not be transferable)
- Alternative 2B: IFQ shares may be transferable among any interested party **[Preferred Alternative]**
- Alternative 2C: IFQ shares may only be transferred among IFQ shareholders during the first five years of the IFQ program and other individuals thereafter
- Alternative 2D: IFQ shares may only be transferred among IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit
- Alternative 2E: IFQ shares may only be transferred among IFQ shareholders, other vessels maintaining a valid limited access commercial tilefish permit, or established tilefish fishermen (i.e., captains, mates, and deckhands)

The Council considered 5 alternatives that would define transferability of ownership. Restrictions on who may purchase quota shares after an initial IFQ share allocation has been established are frequently a major consideration when developing IFQ programs. Transfer restrictions are generally used to address concerns that implementing the IFQ program will result in drastic and rapid changes to the fisheries' status quo. Some economists would argue that the free flow of IFQ quota shares across sectors would produce the highest overall profits for the managed resource. Individuals arguing against the free transfer of IFQ quota shares are often concerned about how resource rents would be reallocated after the transfers.

Individuals wishing to sell IFQ quota shares would like to see as few restrictions as possible on transfers. Individuals wishing to but quota shares would likely prefer that individuals outside their 'sector" not be allowed to buy quota shares. In the short-run, transferability results in lower operating costs and higher production value in fisheries that have overwhelming harvesting capacity. In this case fishermen that can catch fish at a lowest cost or produce the most valuable product are able to buy or lease fishing quotas from marginal operations at a price that is satisfactory to both buyers and sellers. In the long-run, transferability of quotas is anticipated to optimize the size of fishing fleets as a person or firm holding quotas will have no economic incentive to invest in more equipment or larger vessels than needed to take their quota allocation (NRC 1999).

In general terms, free transferability of quota shares could change the status quo of the existing fishery rapidly and/or substantially. In addition, it is possible that quota shares could move into groups that are willing to pay the highest price. It is likely that these groups operate at the lowest cost, produce the most valuable product, and in general terms be the most efficient operations.

Alternative 2A (no action) would prohibit the transfer of IFQ shares. Therefore, the buying or selling of quota shares would be prohibited. This alternative would not benefit people wishing to sell their shares or buy shares to enter the fishery or expand fishing operations.

Alternative 2B (preferred alternative) would allow for free quota shares transfer. That is, anyone could buy quota shares and this would benefit people wishing to buy or sell shares. Since alternative 2B does not limit persons to whom shares can be transferred, it is the most liberal of the alternatives evaluated and would enhance the market for IFQ shares to a greater extend that any other evaluated alternative.

Under alternative 2C, there is restriction on the sale of shares early in the program; this would likely reduce the value of the shares during the early period of the IFQ program implementation. People wishing to sell their quota shares within the first five years of the implementation of the program may have to sell their at a discount price. On the other hand, this alternative would benefit IFQ participants that received small quota shares when the system is first implemented as they could be the only individuals allowed to purchase additional quota shares during the first five years of program implementation.

Alternative 2D would reward participants in the fishery as they would be the only ones allowed to buy shares as they become available. Alternative 2E is identical to alternative 2D, except that

it also allows for established fishermen to buy quota shares when they become available. Alternatives 2D and 2E would not result in drastic or rapid changes to the composition of participants in the fishery when compared to alternatives 2B and 2C. It is important to mention that it may be difficult for some individuals to prove that they classify as well established fishermen (alternative 2E). In fact, it is anticipated that the administrative burden to NMFS may be prohibitively high as there is currently no similar program that verifies person's identities and work histories.

In general terms options that limit the demand of tilefish IFQ quota shares are likely to the selling price of the quotas. The alternative limits the demand for the IFQ shares, the larger anticipated price reduction. The difference in selling price under the alternatives evaluated cannot be estimated with the existing information. Nevertheless, it is likely that increase demand for a commodity that has a fixed supply would tend to increase the selling price. These alternatives are not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, consumer surplus and producer surplus are not expected. In addition, no changes in enforcement cost re anticipated as a result of this action. However, harvest cost for individuals that lease IFQ allocations may increase, and thus, their producer surplus may decrease.

3 IFQ leasing (temporary transfer of ownership)

- Alternative 3A: No Action (Annual IFQ allocations would not be leased)
- Alternative 3B: Annual IFQ allocations may be leased among any interested party **[Preferred Alternative]**
- Alternative 3C: Only tilefish IFQ shareholders would be permitted to lease annual IFQ allocations during the first five years of the IFQ program and other individuals thereafter

- Alternative 3D: Only tilefish IFQ shareholders or other vessels maintaining a valid limited access commercial tilefish permit would be permitted to lease annual IFQ allocations
- Alternative 3E: Only tilefish permit holders (IFQ shareholders or limited access permit holders) or established tilefish fishermen (i.e., captain, mates, and deckhands) would be permitted to lease annual IFQ allocations

As indicated in section 7.3, some degree of leasing flexibility may be important to allow fisheries to adapt to change, and address concerns of overages. For instance, leasing would allow fishermen that obtained no quota or a small quota share during the initial IFQ allocation to lease quota shares in order to participate in the fishery and fine tune their operations before they make a commitment to purchase IFQ shares.

In general terms, the discussion regarding the supply and demand factors affecting the price of IFQ shares when sold and benefits to fishing operations derived from various levels transferability systems discussed under the previous alternative also apply here.. As with the previous alternative, the difference in leasing price under the alternatives evaluated cannot be estimated with the existing information.

It is possible that quota shares could move via leasing into groups that are willing to pay the highest price. It is likely that these groups operate at the lowest cost, produce the most valuable product, and in general terms be the most efficient operations. However, the overall harvest cost may increase for these individuals as a consequence of leasing IFQ allocations. Quota shareholders can also benefit from leasing as they can modify their operations to deal with market fluctuations, or simple lease their shares in the event of some type of physical or mechanical hardship. Fisherman holding IFQ shares can fish he quota or lease to another fishermen and generate revenues. These alternatives are not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price and consumer surplus are not expected. In addition, no changes in enforcement cost re anticipated as a result of this action.

4 IFQ share accumulation

- Alternative 4A: No Action (IFQ share accumulation would not be limited)
- Alternative 4B: Limit IFQ share accumulation to 49 percent of the TAL **[Preferred Alternative]**
- Alternative 4C: Limit IFQ share accumulation to 37 percent of the TAL
- Alternative 4D: Limit IFQ share accumulation to 25 percent of the TAL
- Alternative 4E: Limit IFQ share accumulation to 16.5 percent of the TAL
- Alternative 4F: Considered but rejected for further analysis - Limit IFQ share accumulation to 66, 15, and 19 percent of the TAL for full-time tier 1, full-time tier 2, and part-time IFQ permit holders, respectively

Since alternative 4F may result in excessive share accumulation that surpasses per vessel landings historical highs, it was not given further consideration in the document beyond justification for rejection in section 5.4.F.

Consolidation occurs when the shares needed to harvest fish become concentrated in the hands of fewer and fewer participants. Consolidation could lead to positive economic development and may be considered a rational outcome when a resource can be sold. Nevertheless, it might result in only a few participants enjoying the benefits of this public resource, as the price of shares goes up and smaller operators may not be able to afford to buy their way into the fishery. It is possible that in some cases, these smaller operators might lease shares and become economically dependent on absentee owners.

Regarding share accumulation, section 303A(c)(5)(D) of the 2006 reauthorized Magnuson-Stevens Act states that IFQ privilege programs should ensure that limited access privilege holders do not acquire an excessive share of the total limited access privileges in the program by: 1) establishing a maximum share, expressed as a percentage of the total limited access privileges, that a limited access privilege holder is permitted to hold, acquire, or use; 2) establishing any other limitations or measures necessary to prevent an in equitable concentration of limited access privileges; and 3) authorize limited access privileges to harvest fish to be held, acquired, used by, or issued under the system to persons who substantially participate in the fishery, including in a specific sector of such fishery, as specified by the Council.

As previously stated, an excessive share limit can only be defined in the context of a well defined problem which is related to the amount of quota share owned or controlled by a single entity, or by the number of operating entities. The excessive share limit is defined as that limit which prevents the problem from occurring or keeps it at an acceptable level. The most obvious problem is market power in the sale of fish. Likely not to be much of a problem, given the number of substitute products for tilefish in the market place.

Alternative 4A would not establish a cap on share consolidation. Alternative 4A would allow for the largest amount of consolidation of IFQ shares. In economic terms, this would potentially lead to achieving increased efficiency as vessel owners would attempt to maximize profit by improving efficiency and benefiting from the opportunity to reduce production costs (economic efficiency grounds; exploitation economics of scale). Alternatives 4B through 4E would limit the amount of consolidation in the fishery and in economic terms not allow the most efficient operations to harvest the quota.

For example, under alternatives 4C, 4D, or 4E, the initial quota share allocation described under alternative 7.1 could be impacted. Under alternative 4B (preferred alternative) an accumulation limit would be set at 49% of the TAL (adjusted). In selecting this alternative, the Council considered the potential market power impact that a specific entity could have when accumulation tilefish IFQ shares and historical fishing practices. The Council did not believe that a 49% IFQ share cap would allow harvesters to control the market price for tilefish. In fact, the Council does not believe that even a 100% IFQ share cap in the tilefish fishery would allow a single harvester control the market price for tilefish due to the large number of substitutes for tilefish available in the market place. In addition, the Council took into consideration historical landings and participation when selecting this alternative. For example, during the open access fishery, one vessel landed approximately 36% and 37% of the overall tilefish landings during the 1989 and 1990 years, respectively. The Council thought that setting a 49% IFQ share accumulation limit would provide tilefish vessels with an opportunity to accumulate shares above what some specific vessels had landed in recent history in order to potentially allow for the most efficient operations to harvest the quota. Furthermore, the Council was also concerned that if the overall TAL level goes down substantially, then full-time tier 1 and tier 2 vessels may not be able to fish at efficient levels and may require buying/leasing additional shares from other vessels in order to continue to participate full-time in the fishery. The vessels that qualified for tier 1 and tier 2 when the FMP was first developed had more than enough capacity to harvest the current quota level. In fact, in 1997, three full-time tier 1 vessels landed between 706 and 811 thousand pounds of tilefish. These alternatives are not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, consumer surplus and producer surplus are not expected. In addition, no changes in enforcement cost re anticipated as a result of this action.

5 Commercial Trip Limits

- Alternative 5A: No Action (Maintain status quo management regarding trip limits) **[Preferred Alternative]**
- Alternative 5B: If an IFQ system is not implemented for the part-time permit category, then a 15,000 pounds tilefish trip limit would be implemented for that permit category

Part-time category stakeholders have indicated that a threshold of 15,000 pounds would allow them to continue to fish at a profitable level without saturating the market with product, and at the same time extending the fishing season and avoiding potential early closures. As indicated before, part-time category had early closures in 2002, 2004, 2005, and 2006.

A threshold analysis (see section 7.5.1) indicates that a 15,000 pounds threshold would affect few trips according to VTR landings data for 2001 through 2005 fishing years. Therefore, it is not likely that this trip limit will significantly extend the fishing season for this permit category. Alternative 5A (preferred alternative) would continue the status quo in the fishery and a trip limit would not be implemented for any category currently not having a trip limit in place. Furthermore, as indicated above, the Council recommended the implementation of an IFQ system for all permit categories, as such, there is n need to implement a trip limit for the directed fishery.

These alternatives are not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, consumer surplus and producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

6 Fees and Cost Recovery

- Alternative 6A: No Action (Fees and cost recovery would not be collected if an IFQ program is implemented)
- Alternative 6B: IFQ shareholder directly pays **[Preferred Alternative]**
- Alternative 6C: IFQ shareholder pays via a federally permitted dealer

As previously indicated, NMFS is required under the Magnuson-Stevens Act to collect fees to recover the costs directly related to the management, enforcement, and data collection and analysis of IFQ programs. Under section 304(d)(2)(A) of the Act, the Secretary is authorized to collect a fee to recover these costs. The fee shall not exceed 3-percent of the ex-vessel value of the fish harvested.

Under alternative 6A fees and cost recovery would not be implemented if an IFQ program is put in place for the commercial tilefish fishery. This alternative would be contrary to the Congressional mandate to collect fees for IFQ programs as specified in the Magnuson-Stevens Act. Both alternatives 6B (preferred alternative) and 6C would implement a fee and cost recovery program for the tilefish fishery. The main difference between these two alternatives is the manner in which payments are collected and made. Under alternative 6B, the share holder is responsible for self-collecting his or her own fee liability for all his or her IFQ tilefish landings. Under alternative 6C, federally permitted dealers are required to collect the fee from the IFQ share holder at the point of purchase for later submission to NMFS.

Alternatives 6B and 6C would implement a 3-percent fee of the actual ex-vessel value of tilefish landed under the IFQ program. The fee can be adjusted downward by NMFS in the event the

recovered fees exceed the costs directly related to the management, enforcement, and data collection and analysis.

Based on a TAL of 1.995 million pounds of tilefish, a 2005 coastwide average ex-vessel price for all market categories of $2.48 per pound, and the maximum fee level of 3-percent; the total fee expected to be collected in the first year of the program would be $141,066 under the implementation of an IFQ program for all permit categories. Given the same assumptions and a 2-percent fee level, the total fee expected to be collected in the first year of the program would be $94,044 under the implementation of an IFQ program for all permit categories. Producer surplus would be reduced by the amount of the fee plus any other costs associated with paying the fee. Those costs would include time and materials required for completing the paperwork and paying the fee. Preliminary analyses show that management, enforcement, and data collection cost would be approximately $94,000. As such, a 3-percent fee is expected to cover the costs directly related to the management, enforcement, and data collection and analysis of the tilefish IFQ program.

Once again, it is important to mention that while alternatives 6B and 6C would impose an initial default fee and cost recovery rate of 3-percent, this rate may change in subsequent years if the fee and cost recovery is lower than initially assessed. NMFS will not know the actual annual costs of the IFQ Program until after the end of the tilefish fishing year. After that time, the Regional Administrator could reduce the fee percentage for that year to reflect more closely the actual IFQ-related management, enforcement, and data collection costs for the past fishing year.

These alternatives are not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

7 IFQ Program Review Process

- Alternative 7A: No Action (Review of the IFQ program during a specific timeframe period would not be implemented)
- Alternative 7B: Allow for a formal and detailed review of the IFQ program five years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every seven years**) [Preferred Alternative]**
- Alternative 7C: Considered but rejected for further analysis - Develop a system for review of the IFQ program such as fixed-term, cascading entitlements

Alternative 7C was considered but rejected for further analysis. Because this alternative would implement a review process that may be too complicated and tedious for managers and stakeholders to implement it was not given further consideration beyond the justification for rejection in section 5.7.C.

Under alternative 7A, a formal review process would not be required if an IFQ program is put in place for the commercial tilefish fishery. Alternative 7A would be in violation of the MSFCMA.

Alternative 7B (preferred alternative) would provide for an enforceable provision for regular review and evaluation of the performance of the IFQ program.

Both alternatives are expected to allow fishermen to engage in long-term planning and investment. Long-term fishing privileges reduce business uncertainty and provide incentive to invest in the resource. Furthermore, by not having sunset provisions the overall efficiency of the harvesting sector increases. The proposed review process under alternative 7B does not constitute a sunset provision, it merely allows for periodic evaluation and/or adjustments to the IFQ program. Thus, allowing for the flexibility for review and/or adjustments to improve the IFQ program. These alternatives are not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

8 IFQ Reporting Requirements

- Alternative 8A: No Action (Maintain status quo reporting requirements)
- Alternative 8B: Facilitation of an IFQ system administration if an IFQ program is implemented **[Preferred Alternative]**

Alternative 8A would continue to use the same reporting system currently in use to mange the limited access fishery for managing the fishery under an IFQ system. Alternative 8B would modify the current reporting system to include additional requirements to identify landings under an IFQ system in a more efficient manner. Under alternative 8B (preferred alternative), a trip identifier would be mandatory for dealer and IVR reports (the trip identifier is pre-printed on the VTR) in order to match all reported IVR landings to the dealer repots. This would allow for all IVR data to match dealer data on a trip-by-trip basis. In addition, the dealer number would also need to be recorded into the IVR to have vessels report pounds by dealer on the IVR. This would ensure that amounts of tilefish landed and ex-vessel prices are properly recorded for quota monitoring purposes and the calculation of IFQ fees, respectively. This action is purely administrative and is not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

GENERAL REPORTING REQUIREMENTS

9 IVR Reporting Requirements

- Alternative 9A: No Action (Maintain the status quo reporting of tilefish landings under the current IVR system)
- Alternative 9B: The owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 48 hours after offloading fish **[Preferred Alternative]**

The current tilefish regulations require that the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 24 hours after returning to port and offloading as required by the Regional Administrator. The requirement to provide tilefish catch reports within 24 hours after landing/offloading may force fishermen to report preliminary catch data into the IVR system. Stakeholders have commented that they should only report landings via IVR once they know for sure how much fish they have in the hold and this can only be reported accurately once the fish has been packed out and in some instances this may take over 24 hours. In addition, industry members have also indicated that if they report landings after reaching port but before the fish has been packed-out, the catch estimates can be off by as much as 1,500 pounds.

Reporting tilefish catch via the IVR system allows for tilefish landings to be reported on a trip-by-trips basis. This information is used to monitor the tilefish quota landings in a timely basis. Alternative 9A would maintain the status quo IVR reporting requirements. Under alternative 9B (preferred alternative), the owner or operator of any vessel issued a limited access permit for tilefish must submit a tilefish catch report via the IVR system within 48 hours after offloading fish. It is anticipated that increasing the time allowed for IVR reporting from 24 hours to 48 hours would allow for tilefish catch reports to be more accurate. This action is purely administrative and is not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

10 Commercial Vessel Logbook Reports

- Alternative 10B: Considered but rejected for further analysis - Exempt longline tilefish vessels from current logbook record keeping requirements (VTR) and implement a specific logbook system for those longline vessels
- Alternative 10C: Considered but rejected for further analysis - Implement an electronic reporting system for commercial landings

The commercial vessel logbook report alternatives addressed in this amendment were described in section 5.0. Alternative 10A (no action or status quo alternative) is no longer relevant as two alternatives (alternatives 10B and 10C) to the current system were considered but rejected for further analysis. More specifically, these alternatives were considered but rejected for further consideration because alternative 5.10.B may be too burdensome to implement for all parties involved and currently there are no management system capabilities to implement alternative 5.10.C, as such, no further consideration beyond the justification for rejection in section 5.10.B and 5.10.C, respectively.

GEAR RESTRICITONS

11 Hook Size Restriction

- Alternative 11A: Considered but rejected for further analysis - Implement minimum hook size restriction in the commercial fishery

Alternative 11A was considered but rejected for further analysis. Because there is no quantifiable scientific study data available to implement hook size restrictions it was not given further consideration beyond the justification for rejection in section 5.11.A.

RECREATIONAL FISHING SECTOR

12 Recreational Party/Charter Permits and Reporting Requirements

- Alternative 12A: No Action (Maintain the status quo permit and reporting requirements for party/charter vessels and operators)
- Alternative 12B: Establish a party/charter tilefish vessel permit and party/charter vessel reporting requirements **[Preferred Alternative]**

Alternative 12A (no action alternative) would not implement permit and reporting requirements for party/charter vessels and operators. Alternative 12B (preferred alternative) would implement party/charter vessel. In addition, alternative 12B would require that any vessel fishing recreationally with a party/charter boat permit must have on board at least one operator who holds a permit. According to NMFS VTR data, 32 vessels have landed tilefish from 1996 through 2005. It is expected that all of these vessels will apply for a party/charter vessel permit in order to maintain flexibility in their operations.

Party/charter vessels permits issued pursuant to this amendment must submit monthly logbooks. It is estimated that all party/charter vessels participating in the tilefish fishery hold one or more permits for fisheries that require logbook submission (e.g., multispecies, summer flounder, black sea bass, scup, etc.). As such, these vessels are only required to submit one report to meet the reporting requirement for these fisheries. Therefore, no additional burden is anticipated by the addition of tilefish to the list. The implementation of alternative 12B would likely increase the understanding of the party/charter recreational participation in this sector of the fishery. Alternative 12B would assist managers to better assess fishing trends in the recreational tilefish fishery.

This action is purely administrative and is not expected to change current participation of party/charter vessels in the tilefish fishery.

13 Recreational Bag-Size Limits

- Alternative 13A: No Action (Maintain status quo recreational bag-size limits)
- Alternative 13B: Establish an 8-fish recreational bag-size limit per person per trip **[Preferred Alternative]**
- Alternative 13C: Establish a 4-fish recreational bag-size limit per person per trip
- Alternative 13D: Establish a 2-fish recreational bag-size limit per person per trip
- Alternative 13E: Establish a 1-fish recreational bag-size limit per person per trip
- Alternative 13F: Establish a tilefish recreational bag-size limit of 1-fish per person per trip if recreational landings go up to 4-percent of the total TAL

The current FMP regulations allow for tilefish to be harvested by the recreational sector. When the FMP was first developed, the recreational participation in this fishery was very small. As such, recreational management measures were not included in the FMP. A small recreational fishery briefly occurred during the 1970's but subsequent recreational catches have been small.

However, according to anecdotal information, in recent years there appears to be an increase in the level of recreational interest for this species. Furthermore, some Council members have indicated that they have seen an increase in recreational tilefish landings and would like to readdress this sector of the fishery. Nonetheless, VTR data indicates that for the last decade (1996-2005), the number of tilefish caught by party/charter vessels from Maine through Virginia is low, averaging 444 fish per year. In addition, MRFSS data indicates that for the 2000 through 2005 period, only 2 trips in had tilefish reported as the primary target species (see section 6.1).

Alternative 13A (status quo) no recreational bag-size limits in the tilefish fishery would take place. Alternative 13B (preferred alternative) would set the tilefish recreational bag limit at the upper range of the mean effort seen in the last 10 years (1996 through 2005 period). Alternatives 13C, 13D, and 13E would establish a recreational bad limit at the mid range, slightly higher than the lower range, and the lower range of the mean effort seen during the 1996 through 2005 period, respectively. Alternative 13F would automatically set a 1-fish bag limit per person per trip, thus capping recreational landings per angler if the contributions of recreational landings to total landings increase to levels similar to those seen when the recreational fishery was at it's highest level during the 1970's.

As previously stated, it is not known with certainty how many boats may be targeting tilefish. Nevertheless, it is likely that due to the recreational catch data from MRFSS and VTR data, the number of vessel targeting tilefish is likely to be very low.

Recreational anglers typically fish for tilefish when tuna fishing especially during the summer months (Freeman, pers. comm. 2006). However, some for hire vessels from New Jersey and New York are tilefish fishing in the winter months (Caputi pers. comm. 2006). In addition, recreational boats in Virginia are also reported to be fishing for tilefish (Pride pers. comm. 2006). Anglers are highly unlikely to catch tilefish while targeting tuna on tuna fishing trips. However, these boats may fish for tilefish at any time during a tuna trip (i.e., when the tuna limit has been reached, on the way out or on the way in from a tuna fishing trip, or at any time when tuna

fishing is slow). While fishing for tuna recreational anglers may trawl using rod and reel (including downriggers), handline, and bandit gear. Rod and reel is the typical gear used in the recreational tilefish fishery. Because tilefish are found in relatively deep waters, electric reels may be used to facilitate landing (Freeman and Turner 1977).

There is very little information available to empirically estimate how sensitive the affected anglers might be to the proposed recreational bag-size limits (alternatives 13B-13F). It is possible that the proposed management measures could restrict the recreational fishery and cause some decrease in recreational satisfaction (i.e., low bag limit). However, due to lack of data, these effects cannot be quantified. It is likely that the proposed measures with a lower bag-size limit (alternatives 13E and F) would affect recreational satisfaction to a lesser extent than measures with larger bag-size limits (alternative 13B and C). Although the proposed regulations may change the number of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. In addition, recreational anglers may choose not to stop recreational fishing altogether and may choose to fish for alternative species (scup, black sea bass, hake, cod, tautog, pelagics, etc.). Even though the proposed management measures could affect the demand for trips for tilefish, it is not expected that they would negatively affect the overall number of recreational fishing trips in the North and mid-Atlantic regions. Therefore, the demand for fishing trips should remain relatively unaffected.

MONITORING OF TILEFISH LANDINGS

14 Improve Monitoring of Golden Tilefish Landings Caught in the Mid-Atlantic Region

- Alternative 14A: No Action (Maintain the status quo management regarding the catch and reporting of tilefish)
- Alternative 14B: Implement measures that would allow for golden tilefish caught in the management unit to be landed in the management unit only **[Preferred Alternative]**

According to stakeholders, fisherman holding a tilefish Federal permit and a snapper/grouper Federal permit could potentially fish for golden tilefish in the mid-Atlantic and for southern tilefish (south of the Virginia/North Carolina border) on the same trip. If tilefish landings are not properly reported indicating where they came from, the recovery of the stock could potentially be adversely affected. For example, if the amount of golden tilefish is mistakenly underreported on trips where tilefish from both regions are landed, this could adversely affect the recovery strategy for this species as not all golden tilefish landings may be properly reported. On the other hand, if the amount of golden tilefish is mistakenly over reported on trips where tilefish from both regions are landed, this could result in the golden tilefish fishery being closed too early. Therefore it is important to better define where tilefish are caught as fishermen may potentially report landings of tilefish in one region into another region in order to maintain active permit status or avoid more restrictive measures. It is not known with certainty how many vessels engage in this activity, however, it is expected that only a few number of vessels are currently engage in this type of activity (L. Nolan, pers. comm. 2006).

The proposed requirements under alternative 14B (preferred alternative) are not expected to change fishing methods and practices. However, they would allow for better landings reporting and properly account for catches and landings of golden tilefish in the management unit. This action is not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

FRAMEWORK ADJUSTMENT

15 Framework Adjustment Process

- Alternative 15A: No Action (maintain the status quo measures that can be added or modified via the framework adjustment process)
- Alternative 15B: Expand the list of management measures identified to be added or modified via the framework adjustment process to include recreational measures and measures that facilitate the periodic review of the IFQ program **[Preferred Alternative]**

Alternative 15A would maintain the current status quo alternatives, and as such, the list of management measure that can be added or modified through a streamlined public review process would not change. Alternative 15B (preferred alternative) would allow for the expansion of the list of management measures that have been identified in the plan that can be implemented or adjusted at any time during the year. The recreational management measures that would be added to the list are: 1) recreational bag-size limit, fish size limit, and seasons; and 2) recreational gear restrictions or prohibitions. The measures to facilitate the periodic review of the IFQ program to be added to the list are: 1) capacity reduction; 2) safety at sea issues; 3) transferability rules; 4) ownership concentration caps; 5) permit and reporting requirements; and 6) fee and cost recovery issues. The inclusion of these management measures to the list of measures that can be addressed via the framework adjustment process would incorporate, into the FMP, mechanisms to control and address potential future increases in tilefish recreational landings and/or modifications to the IFQ system. As a result, managers would have more flexibility to control and address potential future increases in tilefish recreational landings and/or modifications to the IFQ system. This action is purely administrative and is not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

ESSENTIAL FISH HABITAT (EFH) MEASURES

16 EFH Designations

- Alternative 16A: No Action: Maintain status quo EFH designations
- Alternative 16B: Modify status quo EFH designations **[Preferred Alternative]**
- Alternative 16C: Considered but rejected for further analysis - GIS analysis of substrate and temperature

Alternative 16C (GIS analysis of substrate and temperature) was considered but rejected for further analysis, on the basis that data does not support such an analysis. No further consideration was given to alternative 16C in the documents beyond justification for rejection in section 5.16.C.

Under no action alternative 16A, the current EFH designations for tilefish life stages would be maintained as described in section 5.16.A, therefore this alternative is expected to have neutral economic impacts. The impacts of designating EFH for tilefish relative to having no designation was evaluated in the original FMP (MAFMC 2000); however, this no action alternative only proposes maintaining the currently established EFH designations (see section 7.16).

Under alternative 16B (preferred alternative), the EFH designations for tilefish would be redefined as described in section 5.16.B. Impacts of the action alternative 16B on the social and economic aspects of human communities are expected to be positive relative to the no action alternative. Under alternative 16B, the EFH designation is more narrowly defined in terms of substrate type, depth, and temperature ranges and includes more detailed descriptions of essential substrates for juvenile and adult tilefish. The action alternative is expected to have positive social and economic impacts because it could result in an increase in human activities that may have been unnecessarily constrained in areas not truly “essential” as tilefish habitat. This action would allow for more effective consultations on oversight of vulnerable EFH areas when compared to the current definitions. This action is not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

17 HAPC Designation

- Alternative 17A: No Action: Maintain status quo HAPC designation
- Alternative 17B: Status quo HAPC with modified depth range
- Alternative 17C: Designate HAPC in a specified depth range within four canyons **[Preferred Alternative]**
- Alternative 17D: Designate HAPC as thirteen canyons (in a specified depth range)

The number of alternatives that can be selected for HAPC designation is not limited to one. Therefore, there are 8 possible HAPC designations based on individual alternatives or

combinations of alternatives. These are 17A only; 17A+17C; 17A+17D; 17B only; 17B+17C; 17B+17D; 17C only; and 17D only. Alternatives 17C and 17D are mutually exclusive. Alternative 17C (only) is the preferred alternative.

Alternative 17A would maintain the existing HAPC designation established under the FMP. "The MAFMC recommended in the Tilefish FMP that the substrate between the 250 and 1200 ft isobath, from U.S./Canadian boundary to the Virginia/North Carolina boundary within statistical areas 616 and 537 be designated as HAPC for juvenile and adult tilefish" (MAFMC 2000).

Alternative 17B would modify the current HAPC designation for juvenile and adult tilefish, described above in alternative 17A (no action), and redefine HAPC for juvenile and adult tilefish to be clay outcrop/pueblo habitats in an area of the outer continental shelf and slope bounded by 70°W and 39°N in depths of 100 to 300 meters (328 to 984 ft).

Alternative 17C would define HAPC for juvenile and adult tilefish to be clay outcrop/pueblo habitats in an area of the outer continental shelf and slope within Norfolk, Veatch, Lydonia, and Oceanographer canyons at the depth range specified for tilefish EFH (100 - 300 meters). Under this alternative, only canyons with known pueblo habitats and/or clay outcropping areas would be designated as HAPC.

Alternative 17D would define HAPC for juvenile and adult tilefish to be clay outcrop/pueblo habitats in an area of the outer continental shelf and slope within Norfolk, Washington, Baltimore, Wilmington, Hudson, Block, Atlantis, Veatch, Hydrographer, Oceanographer, Gilbert, Lydonia, and Heezen canyons at the depth range specified for tilefish EFH (100 - 300 meters). Under this alternative, canyons that are known to have pueblo habitats, clay outcroppings, or sufficient slope (in the canyon walls) to potentially contain clay outcrops would be designated as HAPC.

The Council chose 17C as its preferred HAPC alternative because it designates four canyons on the outer continental shelf and slope that are known to have clay outcrop/pueblo habitats, a habitat type that is particularly sensitive to fishing impacts. Under alternative 17C, portions of Norfolk, Veatch, Lydonia, and Oceanographer canyons within the depth range identified in the selected EFH designation alternative would be designated as HAPC for juvenile and adult tilefish. It is likely that habitat management measures applied to these four canyons would be more effective in terms of the amount of vulnerable tilefish EFH that would be protected relative to the area being managed.

Alternatives 17C and 17D are smaller areas designated as HAPC relative to the no action alternative or alternative 17B. The potential impacts on the social and economic aspects of human communities from alternatives 17C and 17D are also expected to be positive relative to the no action alternative, since they could result in less restricted human activity when compared to the larger status quo HAPC area. This seems much more likely for the two canyon HAPC alternatives since they are much smaller than either alternative 17A or 17B and include a higher proportion of deep, steep bottom areas on the edge of the continental shelf that are not as accessible to fishing as the shallower, flatter areas on the shelf that make up most of the 17A and

17B areas. This action is not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

18 Measures to Reduce Gear Impacts on EFH

- Alternative 18A: No Action: No GRA
- Alternative 18B: Outer continental shelf/slope HAPC GRA
- Alternative 18C: GRAs within canyons **[Preferred Alternative]**
- Alternative 18D: Considered but rejected for further analysis - EEZ GRA

Alternative 18D which would create an EEZ GRA that would prohibit fishing with bottom otter trawl in the EEZ was considered but rejected for further analysis. This alternative was considered because of the extensive bottom otter trawling activity that occurs throughout the EEZ. However, alternative 18D was rejected from further analysis because it would result in profound social and economic impacts on fishermen and their communities. No further consideration was given to alternative 18D in the document beyond justification for rejection in section 5.18.D.

The Council chose 18C as its preferred alternative. Under alternative 18C, the Council had to decide which canyons to select for GRA designation. That is, the Council could have selected to close one, some, or all of the following 13 canyons. The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council also revised the areas associated with the GRAs from what was initially provided in the document.

The associated potential changes in ex-vessel revenues associated with each of the evaluated GRAs are discussed in detail in sections 7.18.5 and 7.18.6. Alternative 18A (status quo) is expected to have neutral short-term social and economic impacts as the current status quo would be maintained. However, there could potentially be longer-term negative socioeconomic impacts if the failure to establish a GRA prevents potential future increases in the productivity and associated fishery yields of managed resources in the region. Alternative 18B would implement a closure to protect tilefish habitat between 70°W and 39°N on the outer continental shelf/slope from bottom trawling. This area is being considered because of the extensive bottom trawling activity identified in the overlap analysis (Appendix E) in these two statistical areas. The GRA closure size and shape, which were developed to encompass depth contours, would depend on which EFH designation alternative is selected. This alternative is expected to have significant short-term negative socioeconomic impacts based on an examination of 2005 vessel trip report data within the proposed closure area. It should be noted that because the data are self reported, there could be errors in the spatial information or reported data resulting from inaccurate reporting, unclear handwriting, or error in transcribing the written information. Potential losses in ex-vessel revue could be as high as $18.3 million (when compared to 2005 fishing opportunities) if the current EFH designation would had been maintained (alternative 16A). Economic losses could potentially be slightly lower under the new EFH designation (alternative 16B).

The combined potential changes in ex-vessel revenues associated with the implementation of GRAs in Norfolk, Veatch, Lydonia, and Oceanographer canyons under alternative 18C is approximately $210,000. As discussed in section 7.18.5, it is likely that errors in these estimates exist. This is due to the fact that the VRT data is not collected at the necessary resolution scale for this type of analysis. Nevertheless, these values provide an overall view of the activity level in the proposed GRAs.

It is expected that localized reductions in revenues due to the proposed GRAs are likely to be partially or completely recouped due to an increase in effort outside of the closed area. Effort displacement could, however, increase operating costs for fishermen who are forced to fish in other areas. As such, the lost revenue estimates represent a worst case prediction of the anticipated loss in ex-vessel revenues that would result from closing this area to bottom otter trawling.

The Council chose 18C as its preferred alternative. Under alternative 18C, the Council had to decide which canyons to select for GRA designation. That is, the Council could have selected to close one, some, or all of the following 13 canyons. The Council selected to close Norfolk, Veatch, Lydonia, and Oceanographer canyons to otter bottom trawl gear to reduce gear impacts on juvenile and adult tilefish EFH. The Council also revised the areas associated with the GRAs from what was initially provided in the document. The proposed GRAs in these canyons (revised four canyon areas) are shown in Executive Summary Figures ES-1 through ES-3 and in Appendix E (Figures A20a for Oceanographer and Lydonia, A22a for Veatch, and A36a for Norfolk). In addition, coordinates for the associated closures are shown in Table 2. A practicability analysis (see section 7.18.6) concluded that alternative 18B is not practicable because it does not contain any known areas of highly vulnerable tilefish habitat and it has a high economic value as a bottom trawling area. Two of the canyon GRAs included as options in alternative 18C are also not practicable. Four canyons GRA areas in this alternative (these are the four canyons selected for GRAs by the Council) are ranked as practicable (high) and seven as practicable (low). The proposed closed areas under the chosen preferred alternative are smaller than those first analyzed under the practicability analysis (see section 7.18.6). As such, it is expected that changes in ex-revenues associated with the proposed closures would be the same or smaller than those described under the practicability analysis.

As indicated above, the Council selected GRAs around the mouth of the four canyons on the outer continental shelf and slope that are known to have clay outcrop/pueblo habitats (Norfolk, Veatch, Lydonia, and Oceanographer). The revised GRAs are smaller than the previously derived GRAs for those four canyons under alternative 18C. The Council was concerned that closing the entire designated HAPC around these four canyons (Appendix E Figures A20 for Oceanographer and Lydonia, A22 for Veatch, and A36 for Norfolk) could potentially restrict fishing in areas that are neither clay outcrop nor pueblo habitat and have large adverse economic impacts. This action is not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

19 Methods for collecting royalties under a Tilefish IFQ system

- Alternative 19A: No Action (Collection of royalties would not be implemented for the initial, or any subsequent, distribution of allocations in the tilefish IFQ program)
- Alternative 19B: A per-unit fee would be assessed on tilefish IFQ allocations if an IFQ program is put in place for the commercial tilefish fishery. IFQ shareholder directly pays
- Alternative 19C: A percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder directly pays
- Alternative 19D: A Percent fee would be assessed on the landed value of harvested fish if an IFQ system is put in place for the commercial tilefish fishery. IFQ shareholder pays via a federally permitted dealer
- Alternative 19E: Considered but rejected for further analysis - Implement an auction system for the collection of royalties if an IFQ program is put in place for the commercial tilefish fishery

Alternative 19E was considered but rejected for further analysis. Alternative 19D was rejected from further analysis because the Council considered that given the nature of the tilefish fishery (limited number of fishery participants, small number of ports of landings, and small overall quota) potential collusion among fishery participants could occur. This will in turn not allow for efficient price discovery and could potential limit the amount of royalties collected to a level below the administrative cost of implementing the royalty collection system. Lastly, the Council was concern that an auction system could prevent the participation of individuals with limited access to capital. No further consideration was given to alternative 18D in the document beyond justification for rejection in section 5.19.D.

The Council chose 19A as the preferred alternative. As such, they recommended that royalties would not be collected if an IFQ program is put in place for the commercial tilefish fishery. Most Council members were concerned that we do have sufficient economic data (e.g., production cost data, fishery profit levels) to make an informed decision regarding the implementation of a royalty collection system. Council members were concerned that implementing a royalty system without adequate information could negatively affect the fishery. For example, under the per-unit fee royalty collection system, managers were concerned that imposing a fee too high could force IFQ permit holder to cease fishing. Under the percentage fee assessed on the landed value of harvest collection system, managers were concerned that additional burden would be place on fishermen as this system would collect royalties in a similar fashion as the system developed to collect cost recovery fees.

Under alternative 19A, a royalty collection system would not be implemented if an IFQ program is put in place for the commercial tilefish fishery. Under alternative 19B, the amount of royalty fees that an IFQ shareholder has to pay would depend on the royalty fee level and the amount of IFQ shares allocated to that specific IFQ shareholder. Under alternative 19B, the per-unit fee would be based on a specific dollar value per unit of IFQ allocation. While the specific per-unit fee assessment has not been determined, a $0.05 per-unit (pound of IFQ allocation) fee is used to illustrate royalty calculations in this section. The level of the fee to be paid could be based on a

specific revenue target. The level of the fee may be change by managers as conditions in the fishery change. If an IFQ fisherman receives an IFQ share allocation of 10,000 lb (4,536 kg). The IFQ permit holder would bear a total royalty fee liability of $ 500.00, determined as follows: (pounds of tilefish IFQ allocation X per-unit fee) = permit holder fee (10,000 lb x $ 0.05 = $ 500.00). An IFQ shareholder would have to pay higher royalty fees as the per-unit fee level increases for a given number of IFQ share allocation. The total royalty fees pay by an IFQ shareholder would increase as the per-unit royalty fee level and/or the IFQ shareholder allocation increases.

Under alternatives 19C and 19D, a percent fee would be assessed on the landed value of harvested fish under an IFQ system for the commercial tilefish fishery. Managers could determine the fee to be paid by fishery participants prior to the fishing season or even several years in advance. The overall fee to be paid by commercial tilefish fishermen would depend on how many permit categories are managed via IFQ system, the royalty percent fee on landed value of harvested fish, and the amount of fish harvested by IFQ permit holders. Based on a TAL of 1.995 million pounds of tilefish, a 2005 coastwide average ex-vessel price for all market categories of $2.48 per pound, and a royalty fee of 2-percent; the total annual fee expected to be collected by the program would be $94,004 under an IFQ system for all permit categories (assuming that the entire tilefish quota is landed).

Assuming 2005 tilefish landings and ex-vessel price, the potential cost to fishermen associated with the royalty system under alternatives 19C and 19D could range from approximately $8,500 to $19,500 for full-time tier 1 vessels. For part-time vessels the costs associated with a 2-percent royalty fee could range from approximately $7 to $4,200. Fees and cost recovery values associated full-time tier 2 vessels are not included for confidentiality issues. The overall net cost per vessel associated with a tilefish royalty collection program would depend on the royalty fee implemented, the amount and value of tilefish landed, and any other potential costs associated with paying the fee (e.g., time to compile information and complete paperwork associated with payment of fees). It is expected that producer surplus would decrease by the amount of fee plus any other potential costs associated with paying the fee (e.g., time and materials required for completing the paperwork and paying the fee).

This action is not expected to alter the amount of tilefish landings and as such changes in the ex-vessel price, harvest cost, and consumer or producer surplus are not expected. In addition, no changes in enforcement cost or distributive effects are anticipated as a result of this action.

The proposed action does not constitute a significant regulatory action under EO 12866 for the following reasons. First, it will not have an annual effect on the economy of more than $100 million. Based on preliminary unpublished NMFS dealer data from Maine to Virginia, the 2005 total commercial value for tilefish was estimated at $3.3 million from Maine through Virginia. As estimated above, assuming 2005 ex-vessel prices the overall changes in gross revenue under the preferred alternative would be approximately less than $100,000 relative to 2005. More specifically, the proposed IFQ allocation program is projected to increase ex-vessel revenue by approximately $253,000 resulting from spreading landings throughout the year and not engaging in derby fishing. The implementation of a cost recovery program will decrease vessel gross

revenues by approximately $141,066 assuming a TAL of 1.995 million lb, 2005 tilefish ex-vessel cent cost recovery fee. It is important to mention that the initial default fee and cost recovery rate of 3-percent rate may change in subsequent years if the fee and cost recovery is lower than initially assessed. Therefore, potential changes in revenue associated with the cost recovery program may be lower than estimated here. The potential reduction in ex-vessel revenue associated with the implementation of GRAs could be approximately $210,000. However, as indicated in the analysis of the GRA alternatives, it is expected that localized reductions in revenues due to the proposed GRAs are likely to be partially or completely recouped due to an increase in effort outside of the closed area. Effort displacement could, however, increase operating costs for fishermen who are forced to fish in other areas. As such, the lost revenue estimates represent a worst case prediction of the anticipated loss in ex-vessel revenues that would result from closing this area to bottom otter trawling. The action benefits in a material way the economy, productivity, competition and jobs. The action will not adversely affect, in the long-term, competition, jobs, the environment, public health or safety, or state, local, or tribal government communities. Second, the action will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect the tilefish fisheries in the EEZ. Third, the actions will not materially alter the budgetary impact of entitlement, grants, user fees, or loan programs or the rights and obligations of their participants. And, fourth, the actions do not raise novel, legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in EO 12866.

10.10.3 Initial Regulatory Flexibility Analysis

The following sections contain analyses of the effect of the proposed action on small entities. Under Section 603(b) of the RFA, each initial regulatory flexibility analysis is required to address:

1. Reasons why the agency is considering the action,
2. The objectives and legal basis for the proposed rule,
3. The kind and number of small entities to which the proposed rule will apply,
4. The projected reporting, record-keeping and other compliance requirements of the proposed rule, and
5. All Federal rules that may duplicate, overlap, or conflict with the proposed rule.

10.10.3.1 Description of the Reasons Why Action by the Agency is being Considered

A complete description of the purpose and need and objectives of this proposed rule is found under section 4.0. The need for this amendment is to address issues and problems that have been identified since the FMP was first implemented. The purpose of this amendment is to achieve the management objectives of the FMP as outlined in section 4.3, as well as to evaluate and consider the implementation of an IFQ program, new reporting requirements, gear modifications, recreational fishing issues, and review the EFH components of the FMP. The need and purpose of this Amendment are summarized in table format in Box 4.2 at the end of section 4.2.

10.10.3.2 The Objectives and legal basis of the Proposed Rule

A complete description of the objectives of this proposed rule is found in section 4.0. The proposed actions are consistent with, and do not modify those goals and objectives. This action is taken under the authority of the MSA and regulations at 50 CFR part 648.

10.10.3.3 Estimate of the Number of Small Entities

As discussed under section 4.1, there are three fishing categories, an incidental, a part-time, and a full-time (with two different tiers or subcategories) for division of the quota under the tilefish limited access program. As indicated in section 4.5 (Description of the Human Environment) currently there is a total of 30 vessels (full-time and part-time vessels) permitted to participate in the limited access fishery. In addition, 2,304 vessels hold an incidental category permit. The proposed action would mostly affect the 30 vessels that participate in the fishery under the current limited access system. The proposed IFQ system only applies to the full-time and part-time tilefish vessels. Under an IFQ system for the full-time and part-time tilefish vessels, vessels with incidental tilefish permits would continue to operate under the incidental permit category (open access). In addition, according to NMFS VTR data, 32 vessels have landed tilefish from 1996 through 2005. The Small Business Administration (SBA) defines a small business in the commercial fishing and recreational fishing activity, as a firm with receipts (gross revenues) of up to $4.0 and $6.5 million, respectively. All permitted vessels readily fall within the definition of small business.

10.10.3.4 Record Keeping and Reporting Requirements

Amendment 1 contains several alternatives that would require new collection of information requirements subject to the PRA. The collection of information requirements associated with the measures proposed in this amendment was addressed through a separate analysis conducted by NMFS. The PRA package prepared in support of this action, including the required forms and supporting statements, will be submitted to NMFS headquarters by the NMFS Northeast Regional Office under separate cover. In general, several alternatives required modification of existing record keeping and reporting requirements or the implementation of new ones. For example, the proposed action will have related record keeping and reporting requirements associated with the implementation of an IFQ program, potential appeals related to the IFQ allocation, potential requirements associated with the sale of IFQ shares and lease of IFQ allocations; potential requirements associated with the collection of cost recover fees; potential changes to the IVR reporting system; and potential reporting and permit requirements for party/charter vessels.

The permitting and reporting requirements in the commercial fishery are expected to impact all vessels that would receive IFQ allocations under the proposed action (approximately less than 16 vessels; actual number not given for confidentiality issues; see section 7.1.4). In addition, it is expected that all party/charter vessels participating in the tilefish fishery will apply for a party/charter vessel permit in order to maintain flexibility in their operations. According to NMFS VTR data, 32 party/charter vessels have landed tilefish from 1996 through 2005.

10.10.3.5 Duplication, Overlap, or Conflict with Other Federal Rules

This action does not duplicate, overlap, or conflict with other federal rules.

10.10.3.6 Economic Impact on Small Entities

Section 7.0 of this document contains the economic analysis of the alternatives that are being considered in this amendment.

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11.0 SOCIAL IMPACT ASSESSMENT

The discussion below focuses on social and cultural impacts of the FMP on communities and individuals. Because economic impacts also have social and cultural ramification, they are also included, though in a different form than seen in the economic impact sections of the document. The discussion is divided into sections on each of the conservation measures adopted under the preferred alternative in the FMP.

To begin, we provide 2005 landings data as background for evaluating these alternatives, rather than the combined 2000-2005 landings data that were provided in the Affected Human Environment section (AHE; see section 6.5). We also summarize some 2005 permit data which were provided in the AHE (see section 6.5), to facilitate comparisons within this section.

Permits

In 2005, including Confirmations of Permit History (CPHs), there were 4 vessels with a category A permit (full-time tier 1 category), 5 vessels with a category B (full-time tier 2 category) permit, 22 vessels with a category C (part-time category) permit and 2,303 vessels with a category D permit (incidental category). Further, a vessel commonly crews 3-4 (a captain and several crewmembers), depending on vessel size, so any impacts should assume that multiplier effect.

At that time, there were a total of 315 primary ports and 593 towns/ports of residence provided by tilefish permit holders on their 2005 application forms. Ports with 30 or more permit holders resident include: New Bedford, MA; Gloucester, MA; Cape May, NJ; Montauk, NY; Wakefield, RI; Fairhaven, MA; and Long Beach/Barnegat Light, NJ (Table 60). For primary port, those with 30 or more permit holders claiming them are: New Bedford, MA; Montauk, NY; Cape May, NJ; Point Judith, RI; Portland, ME; Chatham, MA; Long Beach/Barnegat Light, NJ; Point Pleasant/Point Pleasant Beach, NJ; Newport News, VA; and Fairhaven, MA (Table 61).
These communities will be most impacted in terms of fishermen's income that may be spent in their home community or nearby.

Landings and Ex-Vessel Revenue

There are 16 ports (including one grouped port of "Other New London") where landings and/or value of tilefish constitute at least 0.1% of all landed tilefish. Of these, only 5 reach the level of at least 1.0%, with the vast majority of tilefish landings coming from Montauk, NY (Table 62). There are also 11 counties where landings and/or value of tilefish constitute at least 0.1% of all landed tilefish. Of these, only 3 reach the level of at least 1.0%, with the vast majority of landings coming from Suffolk county, NY (Table 63).

When we examine dependence on tilefish relative to all species landed, rather than the percentage of the tilefish fishery as described above, a somewhat different picture emerges. The small port of Pine Beach, NJ -- which lands very little tilefish (only 2% of tilefish landings) and very little fish in general -- nonetheless boasts tilefish as a very large percentage of those small landings. Montauk, NY -- which lands nearly 70% of all tilefish – nonetheless depends on

tilefish for only 16% of its ex-vessel value for all fisheries. Of course, 16% is still an important amount.

Table 60. Ports that 30 or more permit holders list as their "home address" or primary residence on their permit application, 2005.

State	County	Port
New York	*Suffolk*	Montauk
New Jersey	*Ocean*	Long Beach/Barnegat Light
	Cape May	Cape May
Massachusetts	*Essex*	Gloucester
	Bristol	New Bedford
		Fairhaven
Rhode Island	*Washington*	Wakefield

Table 61. Ports that 30 or more permit holders list as their "primary port" on their permit application, 2005.

State	County	Port
Maine	*Cumberland*	Portland
New York	*Suffolk*	Montauk
New Jersey	*Ocean*	Long Beach/Barnegat Light
		Point Pleasant/Point Pleasant Beach
	Cape May	Cape May
Massachusetts	*Bristol*	New Bedford
		Fairhaven
	Barnstable	Chatham
Rhode Island	*Washington*	Point Judith
Virginia	*City of Newport News*	Newport News

Table 62. Ports with tilefish at least 0.1% of total lbs landed or total value all tilefish, 2005.

State	County	Port	Tilefish as a % of all tilefish landings	Tilefish as a % of all tilefish value
NY	Suffolk	Montauk	64.5%	68.8%
NJ	Ocean	Long Beach	18.1%	15.0%
NY	Suffolk	Hampton Bays	11.5%	12.0%
NJ	Ocean	Pine Beach	2.3%	1.7%
RI	Washington	Point Judith	1.7%	1.1%
NJ	Cape May	Sea Isle City	0.4%	0.3%
RI	Newport	Newport	0.2%	0.1%
NC	Dare	Wanchese	0.2%	0.1%
NY	Suffolk	Greenport	0.2%	0.1%
MA	Bristol	New Bedford	0.1%	0.1%
CT	New London	New London	0.1%	0.1%
CT	New London	Other New London	0.1%	0.1%
VA	Northampton	Chincoteague	0.1%	0.1%
NY	Nassau	Point Lookout	0.1%	0.1%
NY	Suffolk	Mattituck	0.1%	0.1%
NJ	Ocean	Point Pleasant	0.1%	0.1%

Table 63. Counties with tilefish at least 0.1% of total lbs landed or total value all species, 2005.

State	County	Tilefish as a % of all tilefish landings	Tilefish as a % of all tilefish value
NY	Suffolk	76.2%	81.1%
NJ	Ocean	20.4%	16.7%
RI	Newport	1.7%	1.1%
NJ	Cape May	0.4%	0.3%
CT	New London	0.2%	0.2%
RI	Washington	0.2%	0.1%
MA	Bristol	0.2%	0.1%
NC	Dare	0.2%	0.1%
VA	Accomack	0.1%	0.1%
NY	Nassau	0.1%	0.1%
MA	Barnstable	0.1%	0.0%

Several other ports also rise or fall in their relative importance when this perspective is taken (Table 64). The results for counties are similarly changed. Suffolk county, NY – which lands approximately 80% of all tilefish – is dependent on it for less than 1% of its ex-vessel value for all fisheries. Ocean county, NJ – which lands around 20% of all tilefish – depends on it for only 2% of its ex-vessel value for all fisheries (Table 65).

Table 64. Ports with at least 0.1% of tilefish dependence relative to total landings and value of all species, 2005.

State	County	Port	Tilefish as a % of lbs of all landed species	Tilefish as a % of value of all landed species
NJ	Ocean	Pine Beach	94.8%	97.1%
NY	Suffolk	Montauk	8.0%	15.6%
NJ	Ocean	Long Beach	3.6%	1.9%
NY	Suffolk	Hampton Bays	3.4%	6.2%
NJ	Cape May	Sea Isle City	1.4%	0.8%
NY	Suffolk	Mattituck	0.4%	0.4%
NY	Suffolk	Greenport	0.3%	0.6%
MA	Dukes	West Tisbury	0.2%	0.2%
NY	Suffolk	Shinnecock	0.2%	0.2%
MA	Barnstable	Other Barnstable	0.1%	0.1%
NJ	Nassau	Point Lookout	0.1%	0.4%
RI	Washington	Point Judith	0.1%	0.1%
NY	New York	New York City	0.0%	0.1%

Table 65. Counties with at least 0.1% of tilefish dependence relative to total landings and value of all species, 2005.

State	County	Tilefish as a % of lbs of all landed species	Tilefish as a % of value of all landed species
NJ	Ocean	3.6%	1.9%
NJ	Cape May	1.4%	0.8%
MA	Dukes	0.2%	0.2%
NY	Suffolk	0.2%	0.2%
MA	Barnstable	0.1%	0.1%
NJ	Nassau	0.1%	0.4%
RI	Washington	0.1%	0.1%
NY	New York	0.0%	0.1%

Montauk and Hampton Bays in NY, followed by Long Beach in NJ are the communities most at risk due to the combination of both large levels of landings and relatively large levels of dependence, as compared with other ports. However, even though both Montauk and Hampton Bays are located in Suffolk county, the county as a whole has only less than a 1% dependence on tilefish.

Dealers

In the 2005 there were 93 dealers with Federal permits who reported tilefish. Approximately 15% (14) of these 93 dealers earned 10% or less of their total revenue from tilefish. An additional 22% (20) earned 25% or less of their total revenue from tile fish, 28% (26) earned 50% or less than, 35% (33) earned less than 75%, 40% (37) earned less than 95%, and 60% (56) earned between 96-100% of their total revenue from tile fish (Table 66). However, for example, among the 56 dealers reporting 96-100% dependence on tilefish, 88% of these earned $10,000 or less: 14 had absolute income from tilefish of $100 or less, 21 claimed income of $1,000 or less and 14 had income of $10,000 or less, though 3 claimed income of $50,000 to $500,000.

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Table 66. Federally Permitted Dealer Dependence on Tilefish in 2005.

Percentage Level of Dependence	Number of Dealers	Absolute Level of Dependence	*Number of Dealers*
0-5%	11	$0-100	22
6-10%	3	$101-1000	35
11-15%	2	$1001-10,000	22
16-20%	2	$10,001-50,000	6
21-25%	2	$50,001-$100,000	2
26-30%	2	$100,001-500,000	5
31-35%	0	$500,001-1,000,000	0
36-40%	3	$1,000,001-5,000,000	1
41-45%	1		
46-50%	0		
51-55%	2		
56-60%	2		
61-65%	2		
66-70%	0		
71-75%	1		
76-80%	1		
81-85%	1		
86-90%	0		
91-95%	1		
96-100%	56		
TOTAL	93		93

The ports with the largest number of tilefish dealers who bought there in 2005 were: Montauk, NY (13); Point Judith, RI (9); New Bedford, MA (11); Hampton Bays, NY (5); and Long Beach/Barnegat Light, NJ (6). In the vast majority of these cases, however, the dealers earn only 0-5% or so of their revenue from tilefish (Table 67). An exception is the dealers in Long Beach/Barnegat Light, NJ. There tilefish may account for as much as 55% of all revenues. This makes them more vulnerable to any regulation limiting their supply of tilefish, but also makes them the most advantaged by any regulation that raises the average year-round price of tilefish. These New Jersey dealers also support a workforce of approximately 350.

Processors

NMFS conducts an annual Processed Products survey. Because there are so few tilefish processing plants in the database, figures on employment and pounds/value cannot be reported even at the regional level. However, as of 2004 (the most recent year for which data are available) there was only one plant (located in Florida) listed as processing tilefish. For comparison, there were two plants (both in Texas) in 1998. So there have never been large numbers of tilefish processors, and they generally have not been located in the Mid-Atlantic. Thus, processors are unlikely to be impacted in any way as long as TALs remain the same or higher.

Table 67. Federally Permitted Dealer Dependence on Tilefish in 2005 – by Port.*

State	Port	Number of Federal Tilefish Dealers	Percentage Dependence on Tilefish of These Dealers	Number of Federal Tilefish Dealers	Absolute Dependence on Tilefish of These Dealers
Massachusetts	Chatham	1			
	Other Barnstable	1			
	New Bedford	11	0-5%	5/5 (one missing data)	$50,000-500,000/$1M-$5M
	Fall River	1			
	Westport	1			
	Fairhaven	2			
	West Tisbury	1			
	Gloucester	2			
	Boston	1			
Maryland	Ocean City	1			
	Not-specified	1			
Maine	Portland	1			
New Jersey	Cape May	2			
	Sea Isle City	2			
	Belford	1			
	Pt. Pleasant	1			
	Pine Beach	1			
	Long Beach/ Barnegat Light	3/3	0-10%/41-55%	4/1 (one missing data)	$10-50,000/*
New York	Pt. Lookout	1			
	New York City	1			
	Greenport	1			
	Montauk	11/2	0-5%/*	5/4/4	$51,000-$500,000/$500,001-$1M/$1M-$5M
	Hampton Bays	5	0-25%	1/4	*/$1M-$5M
	Mattituck	2			
	Shinnecock	1			
Rhode Island	Newport	1			
	Tiverton	1			
	Little Compton	2			
	Pt. Judith	9	0-5%	4/5	$500,00-$1M/$1M-$10M
Virginia	Chincoteague	2			
	Newport News	1			
	Hampton	1			

* Grayed out cells and asterisks (*) indicate data not published for reasons of confidentiality.

Overall Economic Dependence on Fishing

According to IMPLAN data for 2001 (most recent year available), for employment there are 11 counties with at least a 1.0% employment dependence on fishing in general (Pamlico, NC; Northampton, Accomack, and City of Newport News, VA; Cape May, NJ; Bristol, Barnstable and Essex, MA; Washington and Newport, RI; Worcester, MD), and no counties with at least a 10% dependence. Counties with between 5 and 10% dependence are: Pamlico county in North Carolina and Northampton county in Virginia.

Again using IMPLAN 2001 data, we can examine dependence relative to sales from commercial fishing and seafood processing, as well as personal income from these sources. There are 9 counties with at least a 1% dependency (Pamlico, NC; Cape May, NJ; Northampton, VA; Bristol and Essex, MA; Washington, RI; Accomack and City of Newport News, VA; and Worcester, MD). Only one county (Pamlico, NC) has at least a 5% dependence on either fishery-related sales or income.

Using County Business Patterns (CBP) data for 2001-2003 (latest years available), there are 28 counties with at least a 1% dependence based on employment, and 9 counties with at least 5% dependence. These are City of Newport News and City of Hampton, VA; Suffolk, Dukes and Plymouth, MA; Brunswick and Pamlico, NC; New London, CT and Ocean, NJ. Suffolk, MA has close to a 10% dependence, and City of Newport News, VA has almost a 20% dependence.

Again using CBP data from 2001-2003, there are 28 counties with at least a 1% dependence on fishing and related employment as measured by number of establishments, and 9 with at least a 5% dependence. These are Pamlico, Dare and Carteret, NC; Northampton and Accomack, VA; Newport and Washington, RI; Dukes, MA and Cape May, NJ. Pamlico, NC in fact has just over a 16% dependence, much higher than the not quite 8% of the next highest county – Dare, NC.

The majority of these counties with at least 1% dependence on fishing are not important ports of landing for tilefish. As such tilefish regulations are unlikely to have much, if any, impact. The possible exceptions are Newport and Washington counties in RI.

Recreational Fishing

A popular recreational fishery in the 1970s mostly died out (http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0514/ctext.pdf). But in the last several years, recreational fishing for tilefish has again become more popular (http://www.worldseafishing.com/news/194/ARTICLE/1656/2006-06-19.html), sometimes under the name of "deep dropping" (http://www.mrc.state.va.us/swr/saltwaterreview.shtm). Because of the distance from shore of tilefish habitat, this is exclusively from party and charter boats. Most of these vessels are from New Jersey and New York ports such as Cape May, and Montauk (http://www.nj.gov/dep/fgw/news/2005/recgoldtile05.htm) and Barnegat Light (http://www.fishingreportsnow.com/Archives/Offshore/New_Jersey_Offshore_Fishing_Report_9_15_06.cfm), though there is also recreational tilefishing out of Virginia Beach

(http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0514/ctext.pdf, http://www.frogpilesportfishing.com/index.html).

Ports Profiled

The ports profiled in more depth are any ports/communities that appeared as important due to their total landings or value of tilefish, their dependence on tilefish relative to other species, or the number of tilefish dealers present in the AHE section (see section 6.5). They are: Montauk, Hampton Bays/Shinnecock, Mattituck, Freeport and Greenport, NY; Long Beach/Barnegat Light, Pine Beach, Belford/Middletown, and Pt. Pleasant/Point Pleasant Beach, NJ; Gloucester and New Bedford, MA; and Point Judith and Newport, RI. In addition, Sea Isle City, NJ appears as important in this Social Impact section, where rather than combined data from 2000-2005, only 2005 data are used (Table 68). (While 2000-2005 combined data give a more holistic picture of the community historically, it is assumed that impacts will follow the most current available landings data.) Full profiles are provided in Appendix I, and 1-2 page summaries are provided in the AHE (see section 6.5).

Table 68. Communities Profiled.

State	County	Port
New York	*Suffolk*	Montauk
		Hampton Bays/Shinnecock
		Mattituck
		Freeport
		Greenport
New Jersey	*Ocean*	Long Beach/Barnegat Light
		Pine Beach
		Point Pleasant/Point Pleasant Beach
	Monmouth	Belford/Middletown
	Cape May	Sea Isle City
Massachusetts	*Essex*	Gloucester
	Bristol	New Bedford
Rhode Island	*Newport*	Newport
	Washington	Point Judith

The historical beginnings of the tilefish fishery are succinctly described in Kitts et al. (2006; p. 192; Appendix C).

> Since the early 1900s, tilefish have been harvested off the Mid-Atlantic and New England coasts using longline gear, and to a lesser extent, otter trawls. After World War II, a trawl fishery developed in New England and accounted for most of the landings through the mid-1960s. In the early 1970s, a directed commercial longline fishery rapidly developed and expanded in the Mid-Atlantic region. In the early 1980s, several New Jersey-based vessels switched to other fisheries such as swordfish. By the late 1980s and early 1990s, participants in the tilefish fishery were primarily from eastern Long Island, NY and had upgraded their vessels and adapted to newer technologies. These larger steel-hulled vessels were more

resilient to bad weather and able to steam further offshore. Trip length increased and the fleet became more dedicated to tilefish fishing.

Most (approximately 90%) of commercial tilefishing is now done with longlines, with the majority of the catch trucked to Fulton Fish Market in New York. The majority of landings come from Montauk and Hampton Bays (Suffolk county on Long Island), and even landings in other ports such as Point Judith are largely by New York vessels.

Selected 2000 Census variables are summarized in Table 69. Barnegat Light and Montauk have by far the highest percentage dependence on farming, forestry and fishing of any of the communities profiled. Greenport, New Bedford and Newport have the highest poverty rates. New Bedford has the lowest percentage of persons 25 or over with at least a high school degree. New Bedford has the lowest median household income, followed by Greenport, Narragansett and Montauk. (The median is the midpoint, where half of the households have a higher income and half have a lower income.) All of these factors create the potential for greater risk to fishermen living and/or landing in these communities.

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Table 69. Selected census variables for profiled communities.

Port	Median cost of a home	Occupations in farming, fishing and forestry*	Median household income	Families in poverty	Total pop.	Median Age	Pop. (25 or over) High School Graduate of Higher
Montauk	$290,400	6.1%	$42,329	8.3%	3,851	39.3	84.0%
Hampton Bays/[#] Shinnecock	$178,000	1.7%	$50,161	6.7%	12,236	38.8	86.6%
Mattituck	$203,900	0.7%	$55,353	4.5%	4,198	42.5	91.4%
Freeport	$179,900	0.1%	$55,948	8.0%	43,783	34.6	73.1%
Greenport	$151,400	0.5%	$31,675	21.1%	2,048	40.3	72.2%
Long Beach/ Barnegat Light[+]	$334,400/ $299,400	None*/ 6.5%	$48,697/ $52,361	3.8%/ 2.6%	3,329/ 764	57.3/ 54.9	92.0%/ 92.1%
Pine Beach	$149,100	None*	$57,366	2.5%	1,950	41.6	90.7%
Point Pleasant/ Point Pleasant Beach[+]	$160,100/ $223,600	0.2%/ 2.6%	$55,987/ $51,105	2.0%/ 5.0%	19,306/ 5,314	39.4/ 42.6	88.5%/ 87.1%
Belford/ Middletown[+]	$146,000/ $210,700	2.3%/ 0.2%	$66,964/ $75,566	1.3%/ 1.9%	1,340/ 66,327	35.8/ 38.8	89.7%/ 90.7%
Sea Isle City	$280,100	None*	$45,708	6.4%	2,835	51.3	85.2%
Gloucester	$204,600	2.0%	$47,722	7.1%	30,273	40.2	85.7%
New Bedford	$113,500	1.0%	$27,569	17.3%	93,768	35.9	57.6%
Newport	$161,700	0.6%	$40,669	12.9%	26,475	34.9	87.0%
Point Judith/Narragansett[#]	$195,500	1.6%	$39,918	8.8%	3,671	44.5	87.5%

***** The census is known to undercount those employed in fishing. Further, fishing data are unavailable as a unique category due to confidentiality issues.

[+] These communities have two sets of census data, though socially and in terms of fishing they are best treated as a single community. For example, in some cases fish are landed in one area but fishermen live in the other or sometimes one houses the majority of the recreational fishing and the other the majority of commercial fishing.

[#] These communities include a port of landing for which no census data are available plus census data for the smallest census unit which encompasses the port.

Individual Fishing Quotas

General Issues

Some of the basis for this option was already established when limited access was implemented in 2001. At that time, issues of status with regard to legitimacy of claims to participation were discussed and some decisions made. However, Individual Fishing Quotas (IFQs) are much more fixed in that they define not just access but level of access. Thus, they raise strong issues of equity and dependence. For fishermen, both equity and dependence are tied to concerns over maintaining their way of life, and as such can be highly emotional issues in addition to critical financial ones. As noted even with regard to limited access (Pooley et al.1998; Pp. 28-29)[38] these can be expressed as sometimes contradictory views:

- "Real" fishermen (variously defined) deserve special preference.
- Anyone should be able to acquire a right to fish, but especially if they have a family history of fishing.
- Not just vessel owners but crew members and non-owner captains deserve initial shares.
- Those who "raped the resource" by taking large catches should not be rewarded with large quota shares.
- Those who can show the greatest level of dependence based on largest historic landings deserve the lion's share of the quota.
- Limited access inevitably results in consolidation, which inevitably favors big business at the expense of owner-operators.

National Standard 4 (16 USC 1851, Sec. 301:98-623) prohibits discrimination between residents of different states, and National Standard 8 (16 USC 1851, Sec. 301:104-297) requires providing for the sustained participation of fishing communities[39] and, to the extent practicable, minimization of economic impacts on such communities. However, there are no statutes guaranteeing specific levels of allocation by community, gear group, target species, historical participation or any other variable.

[38] Pooley SG in collaboration with the NMFS Limited Access Working Group. 1998. Issues and options in designing and implementing limited access programs in marine fisheries. U.S. Dep. Commer. NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-252. 73 pp.

[39] The Magnuson-Stevens Fishery Conservation and Management Act defines a 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 community."

The recently reauthorized MSA does require consideration of ramifications of IFQs and ITQs for small scale and entry level components of a fishery, historical participation in a fishery, and community dependence.

On the positive side, in the tilefish fishery Category A vessels (who are essentially operating now as if they had an IFQ) find that they spend many fewer days at sea (109 in 2004 versus 330 previously), allowing them more time at home and in their community and lowering certain costs (e.g., fuel, bait, supplies, repairs, labor)[40]. They also have more security in terms of price per pound and annual income.

Tilefish Issues

Category A

One important factor in this consideration of IFQs is that the impetus comes from within the tilefishing community, specifically, the category A (full-time tier-1) vessel owners. These 3 vessel owners (originally 4, but one was bought out by two other members and that vessel's share of the TAL was divided between them) have formed the Montauk Tilefish Association (MTA). The MTA "is a registered non-profit organization whose objective is to provide an organizational structure for making collective decisions for its members. The MTA also provides members protections under the Fishermen's Collective Marketing Act" (Kitts et al. 2006; p. 195; Appendix C). Further, it "has worked to create and foster a fisheries management regime that is efficient and encourages resource stewardship at the local level. Other important outcomes from this collaboration include fresher fish for the market and a more stable operating environment (Kitts et al. 2006; p. 192; Appendix C).

Members of the MTA have mutually agreed on a division of the category A TAL, and now wish to formalize that division and assure that any additional entry into category A would occur only through buying the allocation of a current member. Thus, for category A fishermen the main potential negative impacts would be an allocation that does not substantially mirror the existing mutually agreed to division of the TAL. The current allocations are based on the same 11-year period (1988–1998) of tilefish landings used in the original FMP, with some mutually agreed to adjustments and the division of the bought out vessel's share. See section 7.0 for tables showing allocation options. These vessels are all based in Montauk, and currently land primarily in Montauk but also Point Judith.

If category B and/or C vessels receive an allocation, these vessels will no longer be in a derby situation and will be able to afford to wait to fish their allocations and alter the seasonal price structure. This would likely result in a positive outcome for all vessel categories (A, B, and C) as prices may experience less fluctuations and could also result in more cooperation between vessel categories.

[40] Many fishermen comments are derived from interviews conducted by Barbara Rountree, Drew Kitts, and Patricia Pinto da Silva.

Category B
The situation for the 5 vessels in category B (full-time tier-2) is different. Only 3 of these vessels are active. If category B vessels remain without IFQs their situation remains unchanged. If IFQs are implemented there are some potential impacts. Any allocation based on years other than the early 1980s (when this fishery very first began) through the present will disenfranchise 2-3 of these 5 vessels. The first question then becomes whether the inactive vessels would really be impacted if they have not fished tilefish for almost 30 years. They do lose the potential to tilefish in the future unless they buy an allocation. But it seems unlikely that they are planning to rejoin the fishery any time soon, so not receiving an allocation appears to have little or no actual impact. For the 3 vessels that have been active at some point since the late 1980s, the specific years chosen as the basis for the allocation will have large impacts on their individual share of the TAL. Category B vessels are based variously in Maine, Massachusetts, New York and New Jersey. Thus impacts are spread out in terms of residence. Their current landing ports are primarily Hampton Bays/Shinnecock and Long Beach/Barnegat Light, however. So some point of landing impacts are likely in these two communities.

Category C
In category C (part-time) there are 22 vessels permitted in 2005, though only 18 have been active during come part of the 1997-2005 period and 41 have been permitted at some point between 1988 and 2005. The 22 vessels are based in a variety of communities from Maine through New York. No individual community has more than 1-2 vessels, with the exception of Long Beach/Barnegat Light, NJ which is home to 9 vessels. Current landings by these vessels are primarily in Gloucester and Long Beach/Barnegat Light. Thus Long Beach/Barnegat Light may bear the brunt of impacts to this category. Given that it is also a major landing port for category B vessels, this community has the potential for strong impacts depending on the specific options chosen. See below under *Common Issues* for some discussion of this.

Similar to the category B vessels, a number of category C vessels have been inactive for 20-30 years. Others have average landings of well under 1,000 lbs per year. The specific years chosen as the basis for IFQ allocations would make a large difference for some vessels. But disenfranchisement of long inactive vessels is a questionable impact. Further, even the currently active vessels are primarily monkfishing and scalloping.

Common Issues for Categories B and C
One common issue for small vessels (Tables 70 and 71) in category B or C is that in a derby situation, and given that the tilefishing year starts in November when the weather is bad, the category allocation may be fished out by the time they are able to steam out as far as the canyons. Thus receiving an IFQ could be helpful in assuring a specific amount of tilefish for the year. Further, providing they receive an adequate allocation, all category B and C vessels could benefit from an allocation that allows them to choose the time of year they fish based on safety and price. Category B vessels do tend to wait to see what Category C vessels are doing before beginning to fish, though they are less concerned about market timing than category A. IFQs would eliminate the incentive for a derby.

Past attempts to cooperate in the B and C categories have been unsuccessful, e.g., an attempt to keep to a 15,000 lb trip limit devolved to a derby when one vessel went over this agreed limit. The fact that category C vessels are more geographically spread out makes cooperation more difficult. Similarly, an attempt by category A boats to coordinate with category B was also unsuccessful, despite the small numbers of individuals involved, perhaps in part because all category A vessels are based in Montauk and many category B vessels are based in New Jersey. Further there is an historical conflict between fishermen in these two locations over the appropriate years for assigning quota in the original tilefish FMP.

Category D

There are 2,303 category D vessels (Tables 70 and 71). Category D is not under consideration for IFQs. If all other permit categories were to receive IFQs they would presumably spread their catches out more evenly over the fishing year. This might benefit category D vessels as spreading tilefish landings throughout the year will likely minimize market gluts and maximize ex-vessel price. The largest numbers of category D vessels are found in New Bedford/Fairhaven, MA (234), Gloucester, MA (91), Cape May, NJ (76), Montauk, NY (67), and Wakefield, RI (51). There are also 20 in Barnegat Light/Long Beach, NJ.

Table 70. Vessels by category and gross registered tons (GRT).*

	0-4 GRT	5-50 GRT	51-150 GRT	151-500 GRT	501+ GRT
Category A	0	1	2	0	0
Category B	1	1	3	0	0
Category C	2	8	11	1	0
Category D	287	1216	562	237	1

* Two vessels in category D are missing GRT data.

Table 71. Vessels by category and length.*

	0-30 ft.	31-45 ft.	46-60 ft.	61-100 ft.	101+ ft.
Category A	0	0	1	2	0
Category B	1	0	2	2	0
Category C	2	3	6	11	0
Category D	40	863	311	695	35

* One vessel in category D is missing length data.

IFQ Transferability of Ownership

Without transferability, IFQs lose some of their economic value. A bank might be less willing to provide a loan based on an allocation that cannot be transferred. However, fears of non-fishermen and non-local residents buying up allocations and vessels as an investment has sometimes led to either non-transferability or tight restrictions on those to whom an IFQ can be sold. But such restrictions can sometimes backfire. In Alaska, rules requiring the presence of the allocation holder on board the vessel made it difficult for a

widow, bequeathed the allocation in her husband's will, to use the allocation. So care must be taken in thinking of potential consequences of such restrictions.

ITQ Leasing

Leasing involves many of the same concerns and considerations as share accumulation, below. Fishermen or others could essentially stack allocations through leasing. Right now a vessel in the MTA could buy a vessel from another permit holder and fish it, increasing the amount of TAL they take. This is unlikely to happen, however, without some agreement first among the MTA members as a whole. But it could. A vessel in other categories could acquire enough leased shares to rival the shares owned by the MTA members. This could alter the balance of market power. Leasing by non-fishermen raises some of the concerns of IFQs in general, about maintenance of community. However, since the share is only leased not sold, the title remains with the fishermen and so this issue is of debatable seriousness.

On the other hand, those who received relatively small allocations could use this to accumulate enough quota to actually break even and make a living.

IFQ Share Accumulation

As discussed under leasing, share accumulation hits at the equity concerns of fishermen. At what point is there a monopoly? At what point does it simply seem unfair by community standards? The majority of shares would presumably go to the MTA members, who already have 66% of the TAL. These boats (full-time tier 1) have historically landed the bulk of the tilefish landings for the last 20-30 years. But within the B and C categories many more vessels are permitted than actually fish.

The absence of any ownership cap under an IFQ system would provide fertile ground for consolidation of fishing operations. Consolidations leads to efficiency in the fishery as fishermen would attempt to maximize profits by reducing production costs and improving efficiency (better fishing and handling methods). Although consolidation is important in terms of economic efficiency, concentration of shares in the hands of a relatively small number of individuals or entities could also lead to excessive market power for just a few entities. The concentration of market power could affect working conditions, process, and wages paid to crew, and could potentially harm some participants in the fishery.

Furthermore, excessive consolidation might result in only a few participants enjoying the benefits of this public resource, as the price of shares goes up and smaller operators may not be able to afford to buy their way into the fishery. It is possible that in some cases, these smaller operators might lease shares and become economically dependent on absentee owners. This action would limit the amount of shares that an individual, corporation, or other entity could accumulate and concerns regarding IFQ share consolidation can be addressed through individual program design as discussed in the documents.

An excessive share limit can only be defined in the context of a well defined problem which is related to the amount of quota share owned or controlled by a single entity, or by the number of operating entities. The excessive share limit is defined as that limit which prevents the problem from occurring or keeps it at an acceptable level. The most obvious problem is market power in the sale of fish. This is likely not to be much of a problem, given the number of substitute products for tilefish in the market place.

Commercial Trip Limits

If all full time (both category A and Category B) vessels have IFQs, and given that category D is only incidental catch, that would leave Category C as the only part of the tilefish fishery still subject to derby fishing. Category C vessels are medium sized (see Tables 70 and 71 above). Those vessels that tend to catch over 15,000 lbs per trip (very few) would be better off with a derby to try to get a larger total landings level. The rest, however, might find a landings limit buffers to some degree the derby effect. For business planning, it would be better to know in advance that such a limit exists, rather than to have it imposed by notice without the ability for prior planning.

Fees and Cost Recovery

MTA members have found their gross revenues down, though some costs down as well. But the creation of a property right in an IFQ/ITQ also allows the share to be used as collateral and potentially leased or sold. Thus the money lost to fees would largely offset by increased returns and value. Creating a fee can also potentially lead to increased social and psychological investment in the IFQ/ITQ program, as the fees collected under the cost recover program would be used to cover the costs directly related to the management, enforcement, and data collection and analysis of the tilefish IFQ program.

Producer surplus would be reduced by the amount of the royalty plus any other costs associated with paying the royalty. Those costs would include time and materials required for completing the paperwork and paying the fee.

IFQ Review Process

A review has potentially positive and negative effects. On the positive side, it creates an automatic time for changing any aspects of the program that are found to be problematic. Certainly, an amendment could be proposed even without an automatic review, but it would potentially be more contested. In addition, such a review is required by the MSFCMA. Thus having a review process limits potential law suits against the program. On the negative side, anything that seems to create a time limit on the particulars of the program seems to make the property right weaker (though in fact an IFQ is revocable at any time) and limit the ability of the IFQ holder to plan for the future use of the IFQ.

IFQ Reporting Requirements

An IFQ reporting system would allow the tracking of sales and leases, providing better economic data for analyses of future regulations. The necessary forms for transfer or sale would not be a significant addition to any paperwork that would have been necessary for these transactions in any case. The reporting system would also facilitate assuring that all rules of IFQ ownership are being followed and allocations are not exceeded. This would occur through the addition of a trip identifier, and would not constitute additional burden on the IFQ holder.

General Reporting Requirements

IVR Reporting Requirements

If the additional 24 hours allow fishermen to more accurately report their landings due to having had a chance to pack out, then this measure would increase the accuracy of data and allow for better rebuilding – having a positive consequence for fishermen. Since this is a measure suggested by fishermen and there have been no negative comments, negative social consequences seem unlikely.

On another track, there have been some reports of vessels in Categories B and C holding off reporting their landings for a few days to allow extra fishing when they are close to the TAL. The 48 hour requirement may or may not make much difference in the possibility of this practice, since "a few days" was not quantified.

Commercial Vessels Logbook Reports

The no action or status quo alternative (alternative 10A) is no longer relevant as two alternatives (alternatives 10B and 10C) to the current system were considered but rejected for further analysis (see sections 5.10 and 7.10). The difficulty of conducting an adequate stock assessment, however, remains.

Commercial Hook Size Restrictions

Since the only alternative considered (implement minimum hook size restriction in the commercial fishery; see sections 5.11 and 7.11) was considered but rejected for further analysis, there will be no new impacts.

Recreational Issues

Recreational Permits

According to those present at a Tilefish Advisory Committee meeting on April 26, 2007 in Secaucus, NJ, there are about 6 vessels in NJ that would put in for a permit if a recreational permit were required. NMFS estimates a total of 32 party/charter vessels will apply. Since all have current party/charter permits in other fisheries, this should involve

minimal additional burden. Further, since the category remains open access, any vessels seeking to enter after the implementation of the amendment will have no impediment in doing so.

Recreational bag-limits

At a Tilefish Advisory Committee meeting on April 26, 2007 in Secaucus, NJ, Gary Caputi (the new advisor from NJ) spoke representing recreational fishermen. His concern was that people were not going to spend big money to go recreational fishing for tilefish, if the Council imposes bag limits. This might hinder future trips. He added that there are very few vessels, if any, that ***only*** target tilefish. Some tuna party/charter boats target tuna, and when done, or else unsuccessful, they turn to tile. They report on the VTR.

Two recreational tilefish fishermen were in the audience. One said people pay big money to go out on a directed tile trip and would not go unless they have the possibility to catch lots of fish. They don't want any bag limits. When audience members pressed about what a reasonable bag limit would be, for sake of discussion, he said 15 per day per angler. He said he makes 3 or 4 targeted trips per year, charging $230/person for an overnight trip.

Monitoring of Tilefish Landings

Landings of South Atlantic Tilefish into the Mid-Atlantic Region

Limiting landings of tilefish to the management unit where they were caught will only affect vessels which commonly fish both the Mid-Atlantic and the South Atlantic in the same trip. This action is being considered in order to improve the monitoring of tilefish landings in the mid-Atlantic region. According to stakeholders, fisherman holding a tilefish Federal permit and a snapper/grouper Federal permit could potentially fish for golden tilefish in the mid-Atlantic and for southern tilefish (south of the Virginia/North Carolina border) on the same trip. If tilefish landings are not properly reported indicating where they came from, the recovery of the stock could potentially be adversely affected. If the amount of golden tilefish is mistakenly underreported on trips where tilefish from both regions are landed, this could adversely affect the recovery strategy for this species as not all golden tilefish landings may be properly reported. On the other hand, if the amount of golden tilefish is mistakenly over reported on trips where tilefish from both regions are landed, this could result in the golden tilefish fishery being closed too early.

Framework Adjustment

Framework Adjustment Process

Allowing framework adjustments to the recreational fishery regulations and to any IFQ program that might be implemented would streamline changes which the Council felt necessary. Since the recreational fishery is in the process of becoming more popular and an IFQ program would by law require a review, these are two areas where potential changes are likely to be desired.

Essential Fish Habitat (EFH) Measures

EFH Designation

Option A, the no action alternative, is expected to have no new impacts. Given that Option B is actually a narrowing of the currently designated EFH this is expected to have no negative impacts and likely some positive impacts.

HAPC Designation

The potential EEZ HAPC covers a broad area (approximately 11.7 million km^2; 4.5 million mi^2; 3.4 million nm^2) from 3 to 200 miles and the outer boundary is as indicated in Figure 1. This area is being considering because of the extensive bottom otter trawling (fish) activity that occurs throughout the EEZ and potential impacts from this gear to tilefish EFH. There were also HAPCs proposed for a number of canyons. Those for which there were trips based on 76-366 m are Wilmington, Washington, Veatch, Oceanographers, Hudson, Block, Baltimore, Atlantis, and the no action and revised HAPC. The closures are for otter trawl gear only.

No category A or category B vessels with 2005 permits are recorded as having fished any of these canyons in 2005. This is because these vessels are all longline. Only 2 category C vessels with 2005 permits fished in these canyons, though these accounted for 5 entries: 1 in Block, 1 in the no action HAPC, 1 in the revised HAPC, 1 in Hudson and 1 in Oceanographers; recall that there may be double counting as a single vessel may enter more than one canyon, and any given canyon more than one time. There are 18 category C vessels active.

There were 198 category D vessels which fished in these canyons (out of 2,303 permits). However, these accounted for 471 entries (Table 72). Thus category D vessels will be most impacted by these HAPC designations, especially the Revised HAPC and the alternative which includes 13 canyons. Since the preferred alternative (Norfolk, Veatch, Lydonia, and Oceanographer Canyons) consists of canyons which were used little or not at all by tilefish vessels in 2005, this alternative is expected to have little impact.

Table 72. 2005 Permitted category D vessel entries in canyons proposed for GRAs.

Area	Number of Entries by a Vessel
Atlantis	12
Baltimore	11
Block	19
No action HAPC	186
Revised HAPC	161
Hudson	47
Oceanographers	4
Veatch	7
Washington	9
Wilmington	15

Measures to Reduce Gear Impact on EFH

The various Gear Reduction Areas (GRAs) mirror HAPC designations from the previous section. As noted there, it is primarily category D vessels will be impacted and these primarily by GRAs located in the No Action and Revised HAPCs and Hudson Canyon (Table 72).

Other Issues

Royalty Collection System

The current MSFMCA requires Councils to consider an auction system to simultaneously allocate limited access fishing privileges and to collect royalties. The collection of royalties is different from cost recovery. The principle of cost recovery is that participants in an IFQ fishery should pay some or all of the costs directly related to management, data collection and analysis, and enforcement of the IFQ program. The principle associated with royalty collection is to transfer some of the financial gains earned from the use of the public resource to the general government coffers (NMFS 2007).

The royalties collected under an auction system would go into the Limited Access System Administration Fund (LASAF; the same fund used to deposit process from cost recovery programs). While funds collected under cost recovery programs are to be available without appropriation or fiscal limitations, funds collected through royalty programs are subject to annual appropriations. In other words, while the Council has the opportunity to collect royalties in a manner that is not subject to the limitation placed under cost recovery programs (i.e., up to 3-percent of the ex-vessel value), there is no guarantee that the funds collected through a royalty system will be appropriated for use in the fishery.

Care must be taken when developing a royalty collection system. For example, under the per-unit fee royalty collection system, it is possible that imposing a fee too high could force IFQ permit holder to cease fishing. Under the percentage fee assessed on the landed value of harvest collection system, additional burden would be place on fishermen as this system would collect royalties in a similar fashion as the system developed to collect cost recovery fees.

Producer surplus would be reduced by the amount of the royalty plus any other costs associated with paying the royalty. Those costs would include time and materials required for completing the paperwork and paying the fee.

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14.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this amendment, the Council consulted with the NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. In addition, states that are members within the management unit were consulted through the Coastal Zone Management Program consistency process. Letters were sent to each of the following states within the management unit reviewing the consistency of the proposed action relative to each state's Coastal Zone Management Program: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. To request a copy of the letter or a list of the CZM contacts for each state, contact Daniel T. Furlong at the Mid-Atlantic Fishery Management Council, Room 2115 Federal Building, 300 South New Street, Dover, Delaware 19904-6790, Telephone: (302) 674-2331, Fax: (302) 674-5399.

In order to ensure compliance with NMFS formatting requirements, the advice of NMFS Northeast Region personnel was sought, Brian Hooker, Jennifer Anderson, David Stevenson, and Lou Chiarella.

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15.0 GLOSSARY

Advisory Panel. Provides additional review and stakeholder perspective to a regional fishery management council (FMC) for proposed actions and draft amendments to fishery management plans (FMPs). The advisory panel usually represents a variety of interests from commercial, recreational, environmental, and consumer areas. However, panel members do not have seats on the council and do not vote.

Allocation. 1. Distribution of the opportunity to fish among user groups or individuals. The share a user group gets is sometimes based on historic harvest amounts; 2. A quantity of catch, effort, or biomass attributed to a person, a vessel, and a fishing company. The allocation can be absolute (e.g. a number of tons) or relative (e.g. a percentage of the annual allowable catch).

Amendment. A formal change to a fishery management plan (FMP). The Council prepares amendments and submits them to the Secretary of Commerce for review and approval. The Council may also change FMPs through a "framework adjustment framework adjustment" (see below).

Area Closure. The closure to fishing by particular gear(s) of an entire fishing ground, or a part of it, for the protection of a section of the population (e.g. spawners, juveniles), the whole population, or several populations. The closure is usually seasonal but it could be permanent.

Assessment. A judgment made by a scientist or scientific body on the state of a resource, such as a fish stock (e.g. size of the stock, potential yield, on whether it is over- or underexploited), usually for the purpose of passing advice to a management authority.

B. Biomass, measured in terms of total weight, spawning capacity, or other appropriate units of production.

Bag limit. - The number and or size of a species that a person can legally take in a day or trip. This may or may not be the same as a possession limit.

Best Available Science. The term “best available science” comes from National Standard 2 listed in the Magnuson-Stevens Act, and is the informational standard mandated for decision making.

B_{MSY}. Long-term average exploitable biomass that would be achieved if fishing at a constant rate equal to F_{MSY}. For most stocks, B_{MSY} is about ½ of the carrying capacity. Overfishing definition control rules usually call for action when biomass is below ¼ or ½ B_{MSY}, depending on the species.

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

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

Bycatch. Fish that are harvested in a fishery, but which are not sold or kept for personal use. This includes economic discards and regulatory discards. The fish that are being targeted may be bycatch if they are not retained.

Commission. Atlantic States Marine Fisheries Commission.

Committee. The Monitoring Committee, made up of staff representatives of the Mid-Atlantic, New England, and South Atlantic Fishery Management Councils, the Commission, the Northeast Regional Office of NMFS, the Northeast Fisheries Center, and the Southeast Fisheries Center. The MAFMC Executive Director or his designee chairs the Committee.

Control rule. A pre-determined method for determining rates based on the relationship of current stock biomass to a biomass target. The biomass threshold ($B_{threshold}$ or B_{min}) defines a minimum biomass below which a stock is considered.

Council. The Mid-Atlantic Fishery Management Council.

Economic rent. The total amount of profit that could be earned from a fishery owned by an individual after subtracting input costs (usually capital and labor). Individual ownership maximizes economic rent, but an open-entry policy usually results in so many fishermen that profit is higher than the opportunity cost are driven to zero.[41]

Environmental Impact Statement. An analysis of the expected impacts of a fishery management plan (or some other proposed Federal action) on the environment and on people, initially prepared as a "Draft" (DEIS) for public comment. After an initial EIS is prepared for a plan, subsequent analyses are called "Supplemental." The Final EIS is referred to as the Final Environmental Impact Statement (FEIS).

EFH. Essential Fish Habitat; defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Waters include aquatic areas and their associated physical, chemical and biological properties. Substrate includes sediment underlying the waters. Necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem. Spawning,

[41] Understanding Fisheries Management: A Manual for understanding the Federal Fisheries Management Process, Including Analysis of the 1996 Sustainable Fisheries Act (2nd Edition). 2000. R. K. Wallace and K. M. Fletcher. Publication MASGP 00-005 of the Mississippi-Alabama Sea Grant Consortium. Available at: http://nsgl.gso.uri.edu/masgc/masgch00001.pdf

breeding, feeding, or growth to maturity covers all habitat types utilized by a species throughout its life cycle.

Exclusive Economic Zone. For the purposes of the Magnuson-Stevens Fishery Conservation and Management Act, the area from the seaward boundary of each of the coastal states to 200 nautical miles from the baseline.

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

Fishing mortality rate. The part of the total mortality rate (which also includes natural mortality) applying to a fish population that is caused by man's harvesting. Fishing mortality is usually expressed as an instantaneous rate (F), and can range from 0 for no fishing to very high values such as 1.5 or 2.0. The corresponding annual fishing mortality rate (A) is easily computed but not frequently used. Values of A that would correspond to the F values of 1.5 and 2.0 would be 78% and 86%, meaning that there would be only 22% and 14% of the fish alive (without any natural mortality) at the end of the year that were alive at the beginning of the year. Fishing mortality rates are estimated using a variety of techniques, depending on the available data for a species or stock.

F_{max}. A calculated instantaneous fishing mortality rate that is defined as "the rate of fishing mortality for a given method of fishing that maximizes the harvest in weight taken from a single year class of fish over its entire life span".

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

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

F_{target}. The target fishing mortality rate, equal to the annual F determined from the selected rebuilding schedule for overfished resources and Council selected fishing mortality level for non-overfished resources. Overfishing occurs when the overfishing target is exceeded.

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

HAPC. Habitat Area of Particular Concern; subsets of essential fish habitat (see EFH) containing particularly sensitive or vulnerable habitats that serve an important ecological

function, are particularly sensitive to human-induced environmental degradation, are particularly stressed by human development activities, or comprise a rare habitat type.

Individual Fishing Quota. A type of limited entry, an allocation to an individual (a person or a legal entity, e.g. a vessel owner or company) community or other entity of a right [privilege] to harvest a certain amount of fish in a certain period of time. It is also often expressed as an individual share of an aggregate quota, or total allowable catch (TAC).

Individual Transferable Quota. A type of individual fishing quota (IFQ) allocated to individual fishermen or vessel owners that can be transferred (sold or leased) to others.

Juvenile. A young fish or animal that has not reached sexual maturity.

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

Limited Access Privilege. Fishery management program whereby an individual fisherman, community, or other entity is granted the privilege to catch a specified portion of the Total Allowable Catch (TAC). Individual Fishing Quota (IFQ) and Individual Transferable Quota (IFQ) are forms of Limited Access Privilege (LAP) programs.

Metric ton. A unit of weight equal to 1,000 kilograms (1 kg = 2.2 lb.). A metric ton is equivalent to 2,205 lb. A thousand metric tons is equivalent to 2.2 million lb.

MSY. Maximum sustainable yield; the largest long-term average yield (catch) that can be taken from a stock under prevailing ecological and environmental conditions. Overfished. An overfished stock is one whose size is sufficiently small that a change in management practices is required in order to achieve an appropriate level and rate of rebuilding.

Natural Mortality Rate. The part of the total mortality rate applying to a fish population that is caused by factors other than fishing. This may include disease, senility, predation, pollution, etc., with all sources of natural mortality being considered together. Natural mortality is usually expressed as an instantaneous rate, and is abbreviated as "M". An instantaneous mortality rate reflects the percentage of fish dying at any one time, as compared to an annual rate which reflects the percentage of fish dying in one year. Natural mortality is differentiated from the instantaneous fishing mortality rate, "F". Together, these comprise the instantaneous total mortality rate, "Z" (i.e., $Z = F + M$). Natural mortality rates can be estimated using a variety of techniques depending on data availability. As compared to fishing mortality, natural mortality is often difficult to investigate because direct evidence about the timing or magnitude of natural deaths is rarely available.

Optimum Yield. 1. The harvest level for a species that achieves the greatest overall benefits, including economic, social, and biological considerations. Optimum yield (OY) is different from maximum sustainable yield (MSY) in that MSY considers only the biology of the species. The term includes both commercial and sport yields; 2. The

amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems. MSY constitutes a "ceiling" for OY. OY may be lower than MSY, depending on relevant economic, social, or ecological factors. In the case of an overfished fishery, OY should provide for the rebuilding of the stock to BMSY.

Overcapitalization. Where the amount of harvesting capacity in a fishery exceeds the amount needed to harvest the desired amount of fish at least cost.

Overfished. An overfished stock is one "whose size is sufficiently small that a change in management practices is required to achieve an appropriate level and rate of rebuilding." A stock or stock complex is considered overfished when its population size falls below the minimum stock size threshold (MSST). A rebuilding plan is required for stocks that are deemed overfished. A stock is considered "overfished" when exploited beyond an explicit limit beyond which its abundance is considered "too low" to ensure safe reproduction.

Overfishing. According to the National Standard Guidelines, "overfishing occurs whenever a stock or stock complex is subjected to a rate or level of fishing mortality that jeopardizes the capacity of a stock or stock complex to produce maximum sustainable yield (MSY) on a continuing basis." Overfishing is occurring if the maximum fishing mortality threshold (MFMT) is exceeded for 1 year or more. In general, it is the action of exerting fishing pressure (fishing intensity) beyond the agreed optimum level. A reduction of fishing pressure would, in the medium term, lead to an increase in the total catch.

Party/Charter boat. Any vessel which carries passengers for hire to engage in fishing.

Possession Limit. The number and/or size of a species that a person can legally have at any one time. Applies to commercial and recreational fishermen. A possession limit generally does not apply to the wholesale market level and beyond.

Post Larvae. Fish that have changed from the larval form to the very first stages of juvenile or adult form.

Pueblo Habitat. The complex of burrows in clay outcrops along the slopes and walls of submarine canyons, and elsewhere on the outer continental shelf, have been called "pueblo" habitat, because of their similarity to human structures in the southwestern United States.

Recruitment. The addition of fish to the fishable population due to migration or to growth. Recruits are usually fish from one year class that have just grown large enough to be retained by the fishing gear.

Semi-lithified. A geological term referring to the hardness of unconsolidated sediment. To lithify means to change to stone, or to convert unconsolidated sediment (such as clay)

into solid rock. Semi-lithified therefore refers to unconsolidated sediment that has been partially hardened.

Size limit. A minimum or maximum limit on the size of fish that may be legally be caught.

Spawning Stock Biomass. The total weight of all sexually mature fish in the population. This quantity depends on year class abundance, the exploitation pattern, the rate of growth, fishing and natural mortality rates, the onset of sexual maturity and environmental conditions.

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

Stock. A grouping of a species usually based on genetic relationship, geographic distribution and movement patterns. A region may have more than one stock of a species (for example, Gulf of Maine cod and Georges Bank cod).

TAC. Total allowable catch; the annual recommended catch for a species or species group given time period, usually one year.

TAL. Total allowable landings; the total regulated landings from a stock in a given time period, usually one year.

Total length. The straight-line distance from the tip of the snout to the end of the tail while the fish is lying on its side. For black sea bass, the total length excludes any caudal filament.

Trip limits. A quota that each fisher or vessel is allowed to catch per trip out to sea. Trip limits are the commercial equivalent of a recreational bag limit.

Year-class. The fish spawned or hatched in a given year.

Yield per recruit. The theoretical yield that would be obtained from a group of fish of one age if they were harvested according to a certain exploitation pattern over the life span of the fish. From this type of analysis, certain critical fishing mortality rates are estimated that are used as biological reference points for management, such as F_{max} and $F_{0.1.}$