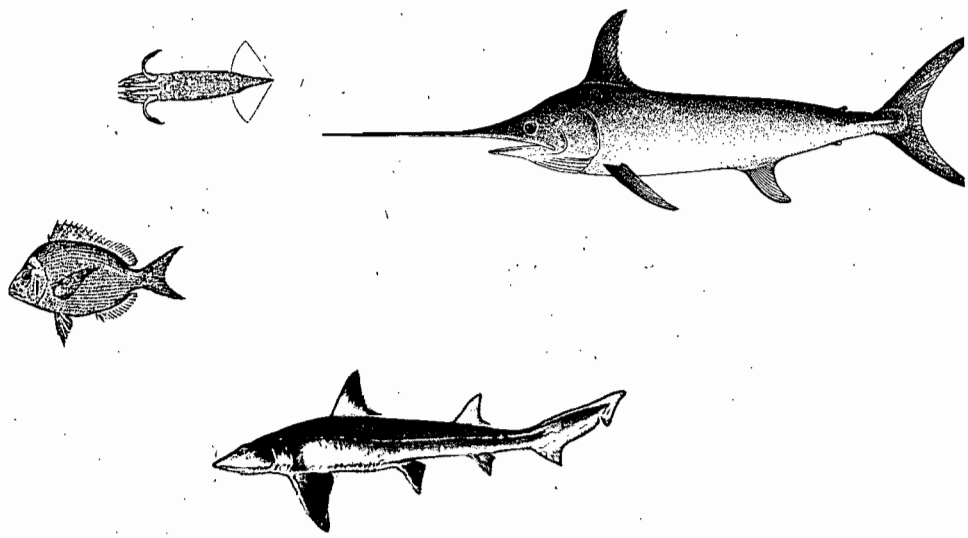
Final Environmental Assessment,
Final Regulatory Impact Review,

and

Final Regulatory Flexibility Analysis

for a

Final Rule to Modify the Retention of Incidentally-Caught Highly Migratory Species in Atlantic Trawl Fisheries



United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Office of Sustainable Fisheries
Highly Migratory Species Management Division

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ABSTRACT

Action:	Modify the retention of incidentally-caught Highly Migratory Species (HMS) in Atlantic trawl fisheries
Type of statement:	Environmental Assessment (EA), Regulatory Impact Review (RIR), and Final Regulatory Flexibility Analysis (FRFA)
Lead Agency:	National Marine Fisheries Service (NMFS): Office of Sustainable Fisheries
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Abstract: This document modifies regulations governing Atlantic HMS to address the retention of incidentally-caught North Atlantic swordfish in squid trawl fisheries, and the retention of incidentally-caught species in the smoothhound shark complex (which includes smooth dogfish and Florida smoothhound (genus *Mustelus*)) in all Atlantic trawl fisheries. Trawl gear is not authorized in Atlantic HMS fisheries, however existing regulations allow for the retention of incidentally-caught swordfish in trawl gears to reduce regulatory discards. Also, Amendment 3 to the Consolidated HMS Fishery Management Plan (FMP) established that vessels with trawl gear would be allowed to harvest smoothhound shark species at incidental levels, similar to swordfish. This document reviews alternatives that would implement new permitting requirements and allowances for incidentally-caught HMS in trawl gears, thereby reducing regulatory dead discards, to the extent practicable, by converting discards into landings; improving fishery data collection; providing additional opportunities for the U.S. swordfish quota to be caught; and, accommodating the use of traditional fishing gears (*i.e.*, trawls) that incidentally capture North Atlantic swordfish and smoothhound shark species.

FINDING OF NO SIGNIFICANT IMPACT

Finding of No Significant Impact for a Final Rule to Modify the Retention of Incidentally-Caught Highly Migratory Species (HMS) in Atlantic Trawl Fisheries

The HMS Management Division of the Office of Sustainable Fisheries submits the attached Environmental Assessment (EA) for Atlantic HMS fisheries for Secretarial review under the procedures of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). This EA considers modifications to the regulations governing the retention of incidental catch of HMS in Atlantic trawl fisheries, and was developed as an integrated document that includes a Regulatory Impact Review (RIR) and Final Regulatory Flexibility Analysis (FRFA). The responses in the Finding of No Significant Impact statement are supported by the analyses in the EA as well as in the other National Environmental Policy Act (NEPA) documents referenced. Copies of the EA/RIR/FRFA are available at the following address:

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This action considers: (1) the incidental catch, retention, and discarding of North Atlantic swordfish (*Xiphias gladius*) in squid trawl fisheries; and, (2) the incidental catch, retention and discarding of species in the smoothhound shark complex (which includes smooth dogfish and Florida smoothhound (genus *Mustelus*)) in all Atlantic trawl fisheries.

The National Oceanic and Atmospheric Administration Administrative Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of an 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 CEQs context and intensity criteria. These include:

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

No. The action is not expected to jeopardize the sustainability of *Illex* or *Loligo* squid, or any other species targeted in Atlantic trawl fisheries. It will allow for the retention of a limited amount of Atlantic HMS (North Atlantic swordfish and smoothhound sharks) captured

incidentally while conducting normal trawl fishing activities for other species. Fishing patterns and behavior in these fisheries are not expected to change as a result of this action.

There are currently 76 *Illex* squid moratorium permit holders, and 365 *Loligo* squid moratorium permits holders. Of these, only 18 *Illex* squid moratorium permit holders and 160 *Loligo* squid moratorium permit holders are considered "active" (meaning they reported squid landings in 2009). The latest *Illex* squid stock assessment from 2006 could not definitively determine if the species was overfished or if overfishing is occurring; however, based on a number of qualitative analyses, the assessment determined that it is unlikely that the stock is experiencing overfishing. The latest *Loligo* squid stock assessment from 2002 concluded that the stock is not likely to be overfished or to be experiencing overfishing. The preferred alternative regarding North Atlantic swordfish will only affect *Illex* squid moratorium permit holders. The *Illex* fishery is very specialized and heavily concentrated in the states of Rhode Island and New Jersey, which account for 99 percent of *Illex* squid landings. Providing an allowance for all *Illex* squid moratorium permit holders to retain up to 15 incidentally-caught swordfish per trip is not expected to increase fishing effort in the very specialized *Illex* squid trawl fishery.

Similarly, the sustainability of summer flounder, scup, croaker, whiting, and other Mid-Atlantic trawl caught species is not expected to be affected by the action allowing for the retention of smoothhound sharks caught incidentally in trawl gear. Until 2010, the smoothhound shark fishery was largely unregulated, meaning that any amount of smoothhound sharks could historically be retained in trawl gears. When smoothhound sharks are fully incorporated into the HMS management unit, the preferred alternative will allow up to 89 percent of historical trawl trips capturing smoothhound sharks to occur. Thus, the preferred smoothhound alternative is not expected to change trawl fishing effort for summer flounder, scup, croaker, whiting, or any other Mid-Atlantic trawl caught species.

2. Can the action be reasonably expected to jeopardize the sustainability of any non-target species?

No. The non-target species in this action are North Atlantic swordfish (*Xiphias gladius*) and smoothhound sharks. When squid trawl vessels fish for *Illex* squid they occasionally capture swordfish that are foraging on squid or present in the same physical environment (*i.e.*, the Mid-Atlantic canyons from July – September). These swordfish are most often brought onboard dead, or die soon afterwards. Because very few *Illex* squid moratorium permit holders have been issued HMS permits to retain swordfish, they are often thrown overboard (*i.e.*, discarded) dead or dying. The preferred alternative will allow these swordfish to be retained, primarily to reduce economic waste during normal *Illex* squid trawl fishing activity. Therefore, NMFS anticipates that the same amount of swordfish mortality will occur regardless of whether the swordfish are allowed to be kept or required to be discarded. Because current HMS regulations stipulate that at least 75 percent of the total catch onboard must be squid in order to retain swordfish with trawl gear, a directed swordfish trawl fishery should not occur.

According to the most recent stock assessment (SCRS 2009), the North Atlantic swordfish stock is fully rebuilt and overfishing is not occurring. Moreover, the United States has been harvesting less than 50 percent of its adjusted North Atlantic swordfish quota in recent years. The preferred

alternative is projected to result in the retention of approximately 169–182 additional swordfish annually, combined, by the entire *Illex* squid trawl fleet. At a maximum, it could result in the retention of 780–2,340 additional swordfish (70,200 lb dw – 210,600 lb dw), or just over two percent of the adjusted U.S. swordfish quota, by *Illex* squid trawl vessels. Most trawl-caught swordfish are brought onboard dead or die soon afterwards. This action is not anticipated to increase mortality on the stock, but rather it will allow swordfish that are currently discarded dead to be converted into landings to reduce economic waste.

The stock status of smoothhound sharks is unknown. These species were brought under federal management in 2010 with the management actions expected in the future. The preferred alternative will establish a limit on the percentage of smoothhound sharks that may be retained by trawl vessels, based upon the weight of target species onboard. This should ensure that smoothhound sharks are not targeted with trawl gear. The preferred alternative will allow approximately 89 percent of historic smoothhound shark trawl trips to occur. If some of the remaining 11 percent of smoothhound sharks that are discarded survive the trawl experience, some minor positive ecological impacts could occur. Overall, any ecological impacts associated with the preferred alternative regarding smoothhound sharks are expected to be minor.

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

No. Overall trawl fishing effort is not expected to change as a result of the preferred alternatives. The management measures will allow some trawl vessels to retain swordfish and smoothhound sharks that are incidentally caught while prosecuting trawl fisheries for *Illex* squid and other mid-Atlantic species. The Mid-Atlantic Fishery Management Council (MAFMC) determined that bottom otter trawl is the primary gear used in trawl fisheries targeting Atlantic mackerel, squid, and butterfish (MSB) and summer flounder, scup, and black sea bass (SSB) fisheries where the majority of swordfish and smoothhound sharks, respectively, are incidentally caught. The MAFMC analyzed MSB and SSB gear impacts on EFH in Amendment 9 to the MSB FMP (July 31, 2008, 73 FR 37382) and in Amendment 13 to the SSB FMP (March 31, 2003, 68 FR 10181). It was determined that fishing with bottom otter trawl gear can impact bottom habitat or EFH. This type of fishing was demonstrated to have some effects on composition and biomass of benthic species in the affected areas, but the directionality and duration of these effects varied by study and substrate types.

The preferred alternatives in this EA are not expected to increase overall fishing effort or increase gear impacts on any EFH beyond those impacts that have already been analyzed in NEPA documents developed by the MAFMC for the FMPs of the corresponding target fisheries (MSB and SSB) and the Consolidated HMS FMP. The preferred alternatives will reduce regulatory discards by allowing fishermen to retain incidentally caught smoothhound sharks and swordfish that would otherwise be discarded dead. It is not anticipated that squid trawl vessels, or other trawl vessels, would start fishing (or take more or longer trips) because they will be allowed to retain swordfish or smoothhound sharks, respectively, that previously had to be discarded. Because overall fishing effort is not expected to change, there will be no ecological impacts to EFH as a result of implementing the preferred alternatives in this EA.

4. Can the action be reasonably expected to have a substantial adverse impact on public health and safety?

No. The modification of swordfish and smoothhound shark incidental retention regulations are not likely to have substantial adverse impacts on public health and safety. Because the actions are not expected to change current fishery practices, no effects to public health and safety are anticipated from their implementation.

5. Can the action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?

No. Overall trawl fishing effort is not expected to change under the preferred alternatives solely because more *Illex* squid trawl vessels would be allowed to retain, rather than discard, a few additional swordfish (estimated at between 1–3 fish per trip for *Illex* vessels), or because trawl vessels would be allowed to continue to retain smoothhound sharks. Therefore, the action is not expected to have any adverse impacts on protected resources. In addition, management measures to reduce regulatory discards are not expected to alter the behavior of protected species. Biological Opinions (BiOps) have been prepared for the directed fisheries that incidentally capture swordfish and smoothhound sharks. For example, when swordfish are caught incidentally in trawl gear, they are most often caught in the directed fishery for *Illex* squid. The *Illex* squid fishery was analyzed in the 2010 Mackerel, Squid, and Butterfish BiOp. Similarly, smoothhound sharks are most often caught in the directed trawl fisheries for *Loligo* squid, summer flounder, scup, silver hake, and skate. BiOps have been prepared for all of these fisheries. Since the directed trawl fisheries that incidentally capture swordfish and smoothhound sharks have already been analyzed under the BiOps conducted for the directed fisheries, new BiOps have not been prepared for the incidental fisheries. The alternatives in this document are not expected to have any ecological impacts on the environment and protected resources beyond those that have been previously analyzed. The preferred alternatives are expected to have neutral short-term and long-term ecological impacts.

6. Can the 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.)?

No. The modification of swordfish and smoothhound shark incidental retention limits for mid-Atlantic fisheries are not expected to have a substantial impact on biodiversity and ecosystem function within the affected area, because the preferred alternatives are not expected to change fishing practices, and/or interactions with non-target and endangered or threatened species.

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

No. There are no anticipated significant natural or physical environmental effects associated with these actions and no significant social or economic impacts interrelated with natural or physical environmental effects that would result from the action. The preferred alternatives are

expected to have largely neutral environmental effects. This is because no change in fishing effort is expected, as approximately the same amount of trawl tows and fishing trips will likely occur. However, some of those trips may realize a small increase in ex-vessel revenues because swordfish and smoothhounds that would otherwise have been discarded would be allowed to be retained, and therefore the preferred alternatives are expected to have minor positive economic effects. Further, the action is consistent with the 2006 Consolidated HMS FMP including objectives to monitor and control all components of fishing mortality, both directed and incidental, so as to ensure the long-term sustainability of HMS stocks, and to provide the data necessary for assessing HMS fish stocks and managing HMS, including addressing inadequacies in current data collection and the ongoing collection of social, economic, and bycatch data in Atlantic HMS fisheries. Please see Section 6 of the environmental assessment document for an analysis of the predicted economic impacts to mid-Atlantic trawl fisheries and small business entities.

8. To what degree are the effects on the quality of the human environment expected to be highly controversial?

The effects of this action on the human environment are not expected to be highly controversial. NMFS sought comments on the swordfish-related issues through publication of an Advance Notice of Proposed Rulemaking (ANPR) on June 1, 2009 (74 FR 26174) and received a limited number of comments on the subject. NMFS also sought comments on the smoothhound-related issues in the proposed rule for Amendment 3 to the HMS FMP (July 24, 2009, 74 FR 36892) and received few comments on the subject (June 1, 2010, 75 FR 30484). Also, both proposed actions were presented to the HMS Advisory Panel on September 22, 2010. The HMS Advisory Panel was generally supportive of the actions. The preferred alternatives will convert regulatory dead discards into landings with minimal environmental impacts. Five public hearings were conducted during the proposed rule comment period. Both the Mid-Atlantic Fishery Management Council and the HMS Advisory Panel were generally supportive of the proposed actions, with some exceptions. All major comments are addressed in the Response to Comments section of the final rule and in Appendix A of this document. The preferred alternatives will improve data collection and bolster outreach efforts to a constituency (trawl sector) that has historically had little interaction with HMS management activities. Furthermore, they would affect a limited number of trawl vessels. Thus, the preferred alternatives are not expected to be highly controversial.

9. Can the action 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?

No. This action will not result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas because fishing effort would occur in open areas of the ocean. In addition, there is no park land, prime farmlands, wetlands, or wild and scenic rivers within the action area so there would be no impacts on these areas.

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

No. Effects on the human environment would be similar to those effects analyzed in similar actions since 1999, some of which have been considered in the Final Environmental Impact Statement (FEIS) prepared for the 2006 Consolidated HMS FMP. None of the previous actions resulted in highly uncertain effects or unique or unknown risks. This action would help to convert trawl-caught dead discards of swordfish and smoothhound sharks into landings and provide some minor economic benefits to a limited number of trawl vessels. It could improve data collection to reduce future uncertainties regarding the impacts of trawl gear on HMS.

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

No. NMFS does not anticipate there to be any significant cumulative ecological, economic, and social impacts. The preferred alternatives will modify existing management measures to provide a reasonable opportunity for U.S. fishermen to fully harvest the domestic swordfish quota and manage smoothhound sharks using uniform conservation and management measures developed and implemented through an FMP in accordance with the procedures set forth in the Magnuson-Stevens Act. These actions will allow swordfish and smoothhound sharks captured incidentally while fishing for other species to be retained rather than discarded. The management measures are not expected to create changes in fishing practices or trawl effort, or cause significant ecological, economic, or social impacts. The alternatives analyzed in this EA will continue to prevent overfishing without jeopardizing the sustainability of either the swordfish or smoothhound shark fisheries, or target species of the mid-Atlantic trawl fisheries.

12. Is the 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.

No. These action will occur in the inshore and offshore waters of the mid-Atlantic region and will not occur in any areas listed or eligible for listing in the National Register of Historic Places, and will not cause loss or destruction of significant scientific, cultural, or historical resources because there are no significant scientific, cultural, or historic resources within the action area.

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

No. The preferred alternatives are not expected to result in any change to fishing patterns previously analyzed in the FEIS for the Consolidated HMS FMP. Most vessels in the mid-Atlantic region do not travel between ecologically different bodies of water or exchange ballast water. Thus, they do not contribute to the introduction or spread of non-indigenous species.

14. Is the action likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

No. North Atlantic swordfish have been allowed to be retained by HMS-permitted squid trawl vessels since 1999. However, many squid trawl vessels either did not apply or qualify for HMS permits when the HMS limited access program was implemented. As the swordfish stock has rebuilt, the lack of HMS permits by some squid trawl vessels has become a larger issue especially during the months of July-September. Although limited by its incidental nature, swordfish catches are the primary HMS caught by squid trawl vessels, outside of smoothhound sharks. Therefore, NMFS is continuing the historical practice of allowing a limited number of swordfish (up to 15) to be retained incidentally by squid trawl vessels. The only difference between the preferred alternative and the status quo is that more squid trawl vessels will be allowed the opportunity to retain swordfish that would otherwise have been discarded dead or dying. Because current HMS regulations stipulate that at least 75 percent of the total catch onboard must be squid in order to retain swordfish with trawl gear, a directed swordfish trawl fishery should not occur. Similarly, in the mid-Atlantic mixed trawl fishery, the incidental catch of smoothhound sharks is oftentimes unavoidable. Allowing these species to be retained rather than discarded will reduce economic waste. Because the preferred alternative will limit smoothhound retention to no more that 25 percent of the total catch by weight, a directed smoothhound trawl fishery should not occur.

15. Can the action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

No. The action would be consistent with the Magnuson-Stevens Act, the Atlantic Tunas Convention Act, and the HMS regulations at 50 CFR § 635. NMFS has determined that this action will be implemented in a manner consistent with the enforceable policies of those coastal states on the Atlantic (including the GOM and Caribbean) that have approved coastal zone management programs. Letters were sent to the relevant states asking for their concurrence when the proposed rule filed with the Federal Register and letters of concurrence were received from the relevant states. The preferred alternative is not expected to violate any Federal, state, or local law or requirement imposed for the protection of the environment.

16. Can the action reasonably be expected to result in cumulative adverse effects that could have substantial effect on the target species or non-target species?

No. The action is not expected to result in cumulative adverse effects that could have a substantial effect on target species or non-target species. The preferred alternatives will allow swordfish and smoothhound sharks caught incidentally by some trawl vessels to be retained to reduce regulatory dead discards and economic waste. These actions are consistent with the Consolidated HMS FMP. No increase in trawl fishing effort or change in current fishing behavior is expected relative to recent fishing years.

DETERMINATION

In view of the information presented in this document and the analysis contained in the attached EA that was prepared to address the incidental catch of Atlantic HMS, particularly North Atlantic swordfish in the squid trawl fishery and smoothhound shark species in all Atlantic trawl fisheries, it is hereby determined that this action would not significantly impact the quality of the

human environment as described above and in the EA. In addition, all impacts to potentially affected areas, including national, regional, and local, have been addressed to reach the conclusion of no significant impact. Accordingly, preparation of an EIS for this action is not necessary.

Emily Menashes

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7/20/2011
Date

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APPENDIX A 1

Environmental Assessment/Regulatory Impact Review/
Final Regulatory Flexibility Analysis
Final Rule to Modify the Retention of Incidentally-Caught HMS in Atlantic Trawl Fisheries

Section 1.0 Purpose and Need for the Action

The Highly Migratory Species (HMS) Management Division of the National Marine Fisheries Service (NMFS) is preparing a final rule to address the permitting requirements for, and retention of, incidentally-caught HMS in Atlantic trawl fisheries. Specifically, this action addresses: (1) the permitting requirements for retention of incidentally-caught North Atlantic swordfish (*Xiphias gladius*) in squid trawl fisheries; and, (2) the retention of incidentally-caught species in the smoothhound shark complex (which includes smooth dogfish and Florida smoothhound (genus *Mustelus*)) in all Atlantic trawl fisheries. The preferred alternative establishes a new Incidental HMS Squid Trawl permit to reduce regulatory dead discards of North Atlantic swordfish in squid trawl fisheries and improve fishery data collection. The preferred alternative also establishes a retention limit for smoothhound shark species in all Atlantic trawl fisheries to account for the incidental catch of these species.

These actions are necessary to achieve domestic management objectives under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and to implement the 2006 Consolidated HMS Fishery Management Plan (Consolidated HMS FMP), including objectives in the FMP to monitor and control all components of fishing mortality, both directed and incidental, so as to ensure the long-term sustainability of HMS stocks, and to provide the data necessary for assessing HMS fish stocks and managing HMS, including addressing inadequacies in current data collection and the ongoing collection of economic and bycatch data in Atlantic HMS fisheries. This Environmental Assessment (EA) addresses two separate, but related, issues regarding the incidental catch of HMS in trawl fisheries to achieve these objectives.

Limited access permits (LAPs) in the North Atlantic commercial swordfish fishery were first implemented during 1999–2000. These LAPs were issued based, in part, upon a vessel's swordfish landings history. At the time, some squid trawl vessels qualified for a swordfish LAP, but many did not for a variety of reasons (including a lack of documented swordfish landings or income from swordfish). Under current regulations, vessels intending to legally land North Atlantic swordfish with gear other than handgear, including squid trawl vessels, must be issued a swordfish LAP, a shark LAP, and an Atlantic Tunas Longline LAP (the "HMS permit triple-pack"). The requirement to possess three LAPs was primarily intended for pelagic longline (PLL) vessels, because of the high likelihood of catching swordfish, sharks, and tunas when fishing with PLL gear. Because some squid trawl vessels did not apply for, or qualify for, the three HMS permits, these vessels have continued to catch swordfish captured incidentally by their squid trawls and must discard them. Due to physical trauma, most of the swordfish caught in trawl nets are brought onboard dead or die soon afterwards.

While the use of trawl gear is not authorized for any HMS fisheries, the current regulations do provide for the incidental retention of up to 15 swordfish in the squid trawl fishery provided that the vessel had been issued the three HMS LAPs required to retain swordfish. Under the HMS regulations, a vessel is considered to be in the squid trawl fishery when it has no commercial fishing gear other than trawls on board and when squid constitutes not less than 75 percent by weight of the total retained catch. An analysis of the Northeast Vessel Trip Report (VTR) data indicates that swordfish are frequently discarded by squid trawl vessels. Because swordfish are incidentally caught during normal squid trawl fishing operations and the regulations allow for retention only if the vessel has been issued the "HMS permit triple-pack," the permit requirements may be inadvertently contributing to regulatory dead discards of swordfish. Trawl gear is different from PLL gear. Incidentally-caught swordfish in squid trawl gear constitute a very small component of the overall catch. In contrast, when PLL gear is deployed, swordfish, sharks, and tunas are all likely to be caught. Therefore, the rationale which prompted NMFS to require the issuance of swordfish, shark, and Atlantic Tunas Longline LAPs in order to land swordfish is not as applicable for squid trawl vessels as it is for PLL vessels. This Environmental Assessment examines different alternatives to modify the permitting requirements for squid trawl vessels to retain incidentally-caught swordfish.

Squid trawl vessel owners that were not initially issued the three LAPs required to retain swordfish could currently obtain the permits by purchasing them and transferring the permits to their vessels. However, this is not a practical solution because swordfish are a very small component of the overall catch and the "HMS permit triple-pack" is often expensive, making it a costly investment that may take several years to recoup. The HMS permit structure is also problematic for squid trawl vessels because swordfish dead discards could be a source of economic gain for U.S. fishermen. Swordfish caught incidentally by trawl gear are usually brought on board dead, or die soon afterwards. The purpose of this action is to reduce wasteful discards in squid trawl fisheries by converting these regulatory dead discards into landings, and fully account for swordfish removed from the stock to provide better data for stock assessment purposes and quota monitoring. Relieving squid trawl vessels of the need to be issued three different HMS permits (that were primarily intended for PLL vessels) would be more efficient, and would help to ensure that NMFS obtains accurate reports of HMS landings and discards from squid trawl vessels.

A different, but related, issue involves the incidental catch of species in the smoothhound shark complex in Atlantic trawl fisheries (Issue B in this document). Amendment 3 to the 2006 Consolidated HMS FMP (75 FR 30484, June 1, 2010; corrected on August 17, 2010, 75 FR 50715) brought the smoothhound shark complex under federal management and authorized a number of gears that could be used in the directed smoothhound shark complex fishery, including gillnets and bottom longline. The use of trawl gear was not authorized since it is rarely used in the directed smoothhound shark fishery, and trawl fishermen only occasionally retain incidentally-caught smoothhound shark species. NMFS felt that more analysis was needed to determine how to best incorporate this gear into the smoothhound shark fishery. NMFS explicitly stated in the final rule for Amendment 3 that it intended to minimize changes to the smoothhound fishery by allowing for the retention of smoothhound shark species caught incidentally in trawl gear. This document examines alternatives to establish a retention limit in Atlantic trawl fisheries to address the incidental catch of smoothhound shark species. The

smoothhound shark retention limit for trawl fisheries would be implemented in conjunction with a smoothhound shark permit and other smoothhound regulations at a future date.

In summary, the purpose of this document is to examine alternatives to modify the permitting requirements for *Illex* squid trawl vessels to retain incidentally-caught swordfish that would otherwise be discarded dead, and to examine alternatives to establish smoothhound shark incidental retention limits for all trawl vessels. These actions are to needed to reduce regulatory dead discards of HMS in trawl fisheries, to the extent practicable. The final action would convert discards into landings; improve fishery data collection; provide additional opportunities to catch the U.S. swordfish quota; and, help to accommodate traditional fishing gears (*i.e.*, trawls) that incidentally capture swordfish and smoothhound sharks.

Section 1.1 Management history relevant to the preferred alternatives

A brief history on the management of incidental catches of HMS in trawl fisheries is provided below. A more complete summary of overall HMS management can be found in the 2006 Consolidated HMS FMP, and in the annual HMS Stock Assessment and Fishery Evaluation (SAFE) Reports. North Atlantic swordfish and smoothhound shark species are managed under the authority of the Magnuson-Stevens Act. Swordfish are also managed under the authority of the Atlantic Tunas Convention Act (ATCA), which authorizes the Secretary of Commerce (Secretary) to promulgate regulations as may be necessary and appropriate to implement recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT). The authority to issue regulations under the Magnuson-Stevens Act and ATCA has been delegated from the Secretary to the Assistant Administrator for Fisheries, NOAA (AA). On May 28, 1999, NMFS published in the Federal Register (64 FR 29090) final regulations, effective July 1, 1999, implementing the FMP for Atlantic Tunas, Swordfish, and Sharks (1999 FMP). On October 2, 2006, NMFS published in the Federal Register (71 FR 58058) final regulations, effective November 1, 2006, implementing the 2006 Consolidated HMS FMP. Amendment 3 to the Consolidated HMS FMP (75 FR 30484, June 1, 2010; corrected on August 17, 2010, 75 FR 50715) (Amendment 3) brought the smoothhound shark complex under federal management and authorized a number of gears that could be used in the directed smoothhound shark complex fishery, including gillnets and bottom longline. NMFS stated in the final rule for Amendment 3 that it intended to allow for the retention of smoothhound shark species caught incidentally in trawl gear (75 FR at 30511) but did not include management measures for trawl fisheries in the amendment.

Incidental Catch of Swordfish in Squid Trawl Fisheries (Issue A)

Since 1999, NMFS has implemented a series of management measures to regulate the incidental catch of swordfish in squid trawl fisheries. In the 1999 FMP, NMFS implemented a limited access program for the North Atlantic commercial swordfish fishery and required that vessels intending to legally land swordfish with gear other than handgear, including squid trawl vessels, must be issued either a directed or incidental swordfish and shark LAP, and an Atlantic tunas longline LAP (collectively known as the "HMS permit triple-pack"). Thus, a swordfish LAP (other than a Handgear LAP) may only be used to land swordfish when the vessel has been issued both a limited access shark permit and an Atlantic tuna longline LAP. NMFS established

these permit requirements primarily to reduce discards of swordfish, tunas, and sharks in vessels using pelagic longline gear, while allowing for the retention of incidentally-caught swordfish with trawl gear.

In the 1999 FMP, in order to qualify for a directed or incidental swordfish and shark LAP, vessel owners needed to meet several criteria established by NMFS. To qualify for either permit, vessel owners must have held a valid permit in the swordfish fishery or the shark fishery at any time between July 1, 1994, through December 31, 1997 and June 1, 1998, to November 30, 1998, (for swordfish) or January 1, 1998, to December 31, 1998 (for shark) and reported landings in either the swordfish fishery or the shark fishery at any time between January 1, 1987, to December 31, 1997, (for swordfish) or January 1, 1991, to December 31, 1997 (for shark). NMFS also required reported landings of at least 25 swordfish or 102 sharks, or documentation indicating landings of at least $5,000 gross revenue worth of swordfish or sharks, per year in any two calendar years during the landing eligibility period for a directed swordfish or a directed shark permit. NMFS believed that incidental permits should be issued only to those who had shown a minimal history of participation and income in fishing activities and, as such, required landings for an incidental swordfish permit to be an average of one swordfish or shark per year during the permit eligibility time period and a minimum earned income of 50 percent coming from commercial fishing or $20,000 per year from the gross sale of fish harvested. For an incidental shark limited access permit, NMFS required landings of at least seven sharks during the landing eligibility period. Also, if a fisherman qualified for an initial directed or incidental swordfish LAP, NMFS would automatically issue an Atlantic tunas longline LAP and an incidental shark LAP. Similarly, if a fisherman held a valid Atlantic tunas longline permit (known at the time as an "Atlantic tunas incidental" permit) as of December 31, 1998, NMFS would automatically issue an incidental swordfish and shark LAP.

At the time the final rule came into effect in mid-1999, few squid trawl vessels qualified for, or applied for, the "HMS permit triple-pack." An analysis of the Northeast VTR data between 2000 to 2009 shows that 26 vessels fishing in the *Illex* and/or *Loligo* squid trawl fisheries caught swordfish incidentally. Out of the 26 vessels directing effort in the squid trawl fishery during that period, ten of these vessels had either a directed or incidental swordfish permit, with only five holding the three required HMS permits to retain incidentally caught swordfish. Therefore, because few squid trawl vessels have been issued the requisite "HMS permit triple-pack," and because swordfish are incidentally caught in the *Illex* and *Loligo* squid trawl fisheries, the existing HMS permit structure may be inadvertently contributing to regulatory dead discards of swordfish. This problem has been exacerbated in recent years due to an increase in the abundance of swordfish.

While trawl gear is not an authorized HMS gear, the 1999 FMP established incidental retention limits to reduce bycatch, and therefore dead discards, of swordfish by squid trawl fishermen, or by pelagic longline fishermen during directed fishery closures. The 1999 FMP regulations allowed directed swordfish LAP holders to land 15 swordfish per vessel per pelagic longline trip during directed fishery closures until the incidental swordfish quota was filled. For swordfish incidental LAPs, NMFS allowed five swordfish to be landed per trip for squid trawl vessels, or two swordfish to be landed per trip for all other gears including PLL gear. These actions were effective at reducing bycatch, but they also had the unintended consequence of

contributing to persistent underharvests of the U.S. swordfish quota. In 2007 (72 FR 56929, October 5, 2007), NMFS modified existing management measures to increase domestic swordfish landings and revenues while maintaining the most critical bycatch reduction provisions. As part of these regulations, NMFS increased the retention limit for pelagic longline vessels issued valid incidental swordfish LAPs from two fish to 30 fish per vessel per trip, and increased the retention limit for squid trawl vessels issued valid incidental swordfish LAPs (i.e., the "HMS permit triple-pack") from five to 15 swordfish per vessel per trip. Even with the increased incidental retention limits implemented in 2007, regulatory dead discards of swordfish are still occurring by squid trawl vessels that were not issued the three required LAPs in 1999 and have not obtained them through transfer since then. These regulatory discards could be a source of economic gain for U.S. fishermen and should be fully accounted for in order to provide better data for stock assessments.

Incidental Catch of Smoothhound Sharks in Trawl Fisheries (Issue B)

Smoothhound shark species have only recently become actively managed at the federal level. Smooth dogfish, the primary species in the smoothhound shark complex, were previously included in a fishery management unit (FMU) that included deepwater and other sharks to prevent finning. However, the species was removed from the FMU in 2003, in Amendment 1 to the 1999 FMP since they were protected from finning under the Shark Finning Prohibition Act (67 FR 6124, February 11, 2002).

The Magnuson-Stevens Act is the primary statute providing fishery management authority for Atlantic HMS to the Secretary, who has delegated that authority to NMFS. In Amendment 3 (75 FR 30484, June 1, 2010), NMFS determined that smooth dogfish is an oceanic shark that should be managed under the Secretary's authority because of the wide distribution of smooth dogfish and because their range extends into the jurisdictions of more than one of the five Atlantic fishery management councils. NMFS' decision to manage the fishery was reinforced by a number of stakeholders indicating that management of smooth dogfish was necessary. These included environmental organizations that had specifically requested management action, the Atlantic States Marine Fisheries Commission (ASMFC) that included smooth dogfish in its management unit when finalizing its Interstate FMP for Coastal Sharks, and the Mid-Atlantic Fishery Management Council (MAFMC) that specifically requested management authority over the smooth dogfish fishery. NMFS also realized, based on existing data, that the smooth dogfish fishery was substantial, with average annual landings of 431mt dw, ranking among the highest for any species of shark managed by NMFS. Accordingly, NMFS determined that sound science-based conservation and management was necessary to provide for the long-term sustainable yield of the stock.

Most smooth dogfish catch occurs with gillnets, bottom longlines, and trawls. In Amendment 3, NMFS stated that managing the species using uniform conservation and management measures developed and implemented through an FMP in accordance with the procedures set forth in the Magnuson-Stevens Act would better engage fishermen in developing conservation measures affecting their fishery. NMFS was also concerned about an overlap between smooth dogfish and spiny dogfish markets. Spiny dogfish is a species that is federally managed with a significant directed fishery. NMFS was concerned that smooth dogfish products

could potentially be used as a substitute for spiny dogfish products, given a long-term decline in spiny dogfish stocks and implementation of restrictive domestic spiny dogfish management measures. It would become increasingly difficult for NMFS to determine if prescriptive conservation and management measures, through future FMP amendments and/or regulatory changes, were needed without initial smooth dogfish management measures in place to collect critical data through Amendment 3 to the Consolidated HMS FMP.

During the development of Amendment 3, emerging molecular and morphological research indicated that Florida smoothhounds (*Mustelus norrisi*) had been historically misclassified as a separate species from smooth dogfish (Jones, pers. comm.). Additionally, the Southeast Fisheries Science Center (SEFSC) advised that there were insufficient data at the time to separate smooth dogfish and Florida smoothound stocks, and that they should be treated as a single stock until scientific evidence indicated otherwise. Accordingly, because of this taxonomic correction and based upon SEFSC advice, both Florida smoothhound sharks and smooth dogfish began to be managed as the smoothhound shark complex in Amendment 3.

In summary, Amendment 3 brought smoothhound shark species under formal federal management by the Secretary in 2010, due to their wide distributional range. NMFS implemented a new requirement for a federal smoothhound permit that is to be effective at a future date. The purpose of these actions was, *inter alia*, to collect better fishery data and improve information regarding the life history of the species. Consistent with the stated intent to minimize changes to the fishery, trawl gear was not authorized for the fishery, however NMFS indicated that vessels with trawl gear would likely be allowed to harvest smoothhound shark species at incidental levels, similar to swordfish. In the alternatives analyzed in this EA, NMFS considered an appropriate retention limit that would allow fishermen to harvest incidentally-caught smoothhound shark species with trawl gear provided that sufficient quantities of target catch are retained.

Section 2.0 Summary of Alternatives

As discussed in Section 1, this document addresses two separate, but related, issues: (A) the retention of incidentally-caught North Atlantic swordfish in squid trawl fisheries; and (B) the retention and incidental catch of species in the smoothhound shark complex in all Atlantic trawl fisheries. Accordingly, the alternatives are grouped separately by these issues.

For Issue A, NMFS considered the following alternatives: Alternative A1 - No Action; Alternative A2 - Establish a new permit for *Illex* squid moratorium permit holders to retain swordfish; Alternative A3 - Exempt *Illex* squid moratorium permit holders from current HMS permitting requirements to retain swordfish; and, Alternative A4 - Establish a new permit *or* an exemption, as applicable, for *Loligo* squid moratorium permit holders to retain swordfish.

For Issue B, NMFS considered the following alternatives: Alternative B1 - No Action; Alternative B2 - Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 25 percent of the total catch, by weight; and, Alternative B3 - Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 50 percent of the total catch, by weight.

These alternatives are explained in greater detail below. The ecological, economic, and social impacts of the alternatives are discussed in Section 4.0.

Issue A – Incidental Catch of North Atlantic Swordfish in Squid Trawl Fisheries

Alternative A1 No Action

This alternative would maintain existing regulations specifying that, in order to retain up to 15 incidentally-caught swordfish per trip, a squid trawl vessel must be issued a swordfish LAP (other than handgear), a shark LAP, and an Atlantic Tunas Longline LAP (*i.e.*, the "HMS permit triple-pack"). A vessel is considered to be in the squid trawl fishery when it has no commercial fishing gear other than trawl gear on board and when squid constitutes not less than 75 percent by weight of the total retained catch. Vessel owners holding the three permits are required to sell their swordfish only to federally permitted swordfish dealers, and must report all swordfish catches in federal logbooks.

Alternative A2 Establish a new permit for *Illex* squid moratorium permit holders to retain swordfish (*Preferred alternative*)

This alternative would establish a new Incidental HMS Squid Trawl permit available to all vessel owners currently issued an *Illex* squid moratorium permit. To be issued the new HMS permit, vessel owners would be required to complete an initial permit application form, meet all other permit requirements, and be issued a current, valid *Illex* squid moratorium permit. Upon issuance of the new HMS permit, the vessel would be allowed to retain up to 15 swordfish per trip, which is the current squid trawl retention limit, provided that it has no commercial fishing gear other than trawl gear on board and squid constitutes not less than 75 percent by weight of the total retained catch. The holder of the new permit would be required to sell their swordfish only to federally permitted swordfish dealers (as currently required), and report all swordfish catch and discards through their existing permit reporting requirements, including Northeast Region Vessel Trip Reports (VTR). By establishing this new permit, NMFS would have the option of selecting squid trawl vessels to carry observers and to report their catches in the HMS logbook. The Incidental HMS Squid Trawl permit would be non-transferrable, meaning that each new *Illex* squid moratorium permit holder would have to apply for the new HMS permit. Vessels currently issued the "HMS permit triple-pack" would be allowed to transfer those permits to another vessel, provided that all requirements, including vessel upgrading requirements, have been met.

Alternative A3 Exempt *Illex* squid moratorium permit holders from current HMS permitting requirements to retain swordfish

Under this alternative, NMFS would establish an exemption from the need for *Illex* squid trawl vessels to be issued a swordfish LAP (other than handgear), a shark LAP, and an Atlantic Tunas Longline LAP, and there would be no HMS permit requirement for *Illex* squid moratorium permit holders to retain swordfish. Instead, all vessels issued an *Illex* squid moratorium permit that have no commercial fishing gear other than trawl gear on board, and upon which squid constitutes not less than 75 percent by weight of the total retained catch, would be allowed to retain up to 15 swordfish per trip. *Illex* squid trawl vessels currently issued the

"HMS permit triple-pack" would be allowed to transfer those permits to another vessel, provided that all requirements, including vessel upgrading requirements, have been met. Under this alternative, vessels landing swordfish would continue to be required to sell their swordfish only to federally permitted swordfish dealers, and to report their swordfish catch and discards through their existing permit reporting requirements, including Northeast Region Vessel Trip Reports (VTR).

Alternative A4 **Establish either a new permit *or* an exemption, as applicable, for *Loligo* squid moratorium permit holders to retain swordfish**

This alternative would establish either a new Incidental HMS Squid Trawl (or similarly named) permit available to all vessel owners currently issued an *Loligo* squid moratorium permit, or establish an exemption from the need for *Loligo* squid trawl vessels to be issued a swordfish LAP (other than handgear), a shark LAP, and an Atlantic Tunas Longline LAP to retain swordfish. If selected, this alternative would implement the same requirement (permit or exemption) for *Loligo* squid moratorium permit holders as selected for *Illex* squid moratorium permit holders.

To be issued an HMS permit, if that option were selected, vessel owners would be required to complete an initial permit application form, meet all other permit requirements, and be issued a current, valid *Loligo* squid moratorium permit. Upon issuance of the permit, the vessel would be allowed to retain up to 15 swordfish per trip, the current squid trawl limit, provided that it has no commercial fishing gear other than trawl gear on board and when squid constitutes not less than 75 percent by weight of the total retained catch. The vessel owner issued the new permit would be required to sell the swordfish only to federally permitted swordfish dealers (as currently required), and report all swordfish landed in federal logbooks. By establishing this new permit, NMFS would have the option of selecting squid trawl vessels to carry observers and to report their catches in the HMS logbook. The Incidental HMS Squid Trawl permit would be non-transferrable, meaning that each new *Loligo* squid moratorium permit holder would have to apply for the new HMS permit. Vessels currently issued the "HMS permit triple-pack" would be allowed to transfer those permits to another vessel, provided that all vessel upgrading requirements, and other requirements, are met.

If an exemption were selected, all vessels issued a *Loligo* squid moratorium permit that have no commercial fishing gear other than trawl gear on board, and squid constitutes not less than 75 percent by weight of the total retained catch, would be allowed to retain up to 15 swordfish per trip. *Loligo* squid trawl vessels currently issued the "HMS permit triple-pack" would be allowed to transfer those permits to another vessel, provided that all vessel upgrading requirements, and other requirements, are met. Under this alternative, vessels landing swordfish would continue to be required to sell their swordfish only to federally permitted swordfish dealers, and to report their swordfish swordfish catch and discards through their existing permit reporting requirements, including Northeast Region Vessel Trip Reports (VTR).

Issue B - Incidental Catch of Smoothhound Sharks in Trawl Fisheries

Alternative B1 **No Action**

This alternative would not implement management measures to allow for the retention of smoothhound sharks caught incidentally in trawl gear when smoothhound sharks are fully incorporated into the HMS management unit. Trawl gear is not an authorized gear in the smoothhound shark fishery. In the absence of additional regulations establishing a smoothhound shark trawl retention limit, it would be illegal to retain smoothhounds caught with trawl gear by federal smoothhound shark permit holders when smoothhound sharks are fully incorporated into the HMS management unit. It is important to note that this alternative is not the status quo alternative. Prior to the full incorporation of smoothhound sharks into the HMS management unit, trawl vessels will continue to be allowed to retain smoothhound sharks under the status quo. After smoothhound sharks are fully incorporated into the HMS management unit, trawl vessels would not be allowed to retain smoothhound sharks under the no action alternative.

Alternative B2 **Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 25 percent of the total catch, by weight (*Preferred alternative*)**

This alternative would allow fishermen to retain species in the smoothhound shark complex caught incidentally in trawl gear after smoothhound sharks are fully incorporated into the HMS management unit. To ensure that fishermen do not direct trawl effort on smoothhound sharks, not more than 25 percent of the total retained catch, by weight, could be smoothhound sharks. The 25 percent threshold was reached through an analysis of self-reported VTR data from 2000-2009 (see Figure 7 in Chap. 3). This alternative would not be effective until NMFS implements a new smoothhound shark permit, which is expected to occur when smoothhound sharks are fully incorporated into the HMS management unit.

Alternative B3 **Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 50 percent of the total catch, by weight**

This alternative would allow fishermen to retain species in the smoothhound shark complex caught incidentally in trawl gear after smoothhound sharks are fully incorporated into the HMS management unit. Under this alternative, not more than 50 percent of the total retained catch, by weight, could be smoothhound sharks. The 50 percent threshold was reached through an analysis of self-reported vessel trip report (VTR) data from 2000-2009 (see Figure 7 in Chap. 3). This alternative would not be effective until NMFS implements a new smoothhound shark permit, which is expected to occur when smoothhound sharks are fully incorporated into the HMS management unit.

Section 3.0 Affected Environment

Section 3.1 Stock status of North Atlantic swordfish and smoothhound shark species

This section briefly discusses the stock status of the HMS that the preferred alternative would affect (North Atlantic swordfish and smoothhound sharks). Information regarding the stock status of target squid species and other target species managed by the MAFMC is provided in Section 3.2.2. For more information regarding the status of target species managed by the MAFMC, please refer to: (1) the Atlantic Mackerel, Squid, and Butterfish (MSB) FMP; and, (2) the Summer Flounder, Scup, and Black Sea Bass (SSB) FMP.

North Atlantic Swordfish

Stock assessments for Atlantic swordfish are conducted by ICCAT's Standing Committee on Research and Statistics (SCRS). North Atlantic swordfish are fully rebuilt and overfishing is not occurring. The latest SCRS stock assessment (2009) indicates that the North Atlantic swordfish stock is at or above B_{MSY}. The estimated relative biomass trend shows a consistent increase since 2000. The relative trend in fishing mortality shows that the level of fishing peaked in 1995, followed by a decrease until 2002, followed by small increase in the 2003-2005 period and a downward trend since then. Fishing mortality has been below F_{MSY} since 2005. The results suggest that there is greater than 50% probability that the stock is at or above B_{MSY}, and thus ICCAT's stock rebuilding objective has been achieved. It is important to note that, since 2003, North Atlantic swordfish catches have been below the TACs, thereby greatly increasing the chances for a quick recovery. Overall, the stock was estimated to be somewhat less productive than the previous assessment, with the intrinsic rate of increase, r, estimated at 0.44 compared to 0.49 in 2006.

Smoothhound Shark Species

Smoothhound sharks were recently brought under federal management in 2010 through Amendment 3, with implementation of management measures expected to occur when smoothhound sharks are fully incorporated into the HMS management unit. The smoothhound shark complex (which includes smooth dogfish and Florida smoothhound (genus *Mustelus*)) has not been assessed. Its stock status is unknown. Based upon existing data, it is apparent that the smooth dogfish fishery is substantial and requires sound science-based conservation and management to provide for the long-term sustainable yield of the stock. The smoothhound shark fishery has significant annual landings with a large directed component. The landings data does not show any obvious trends and are likely to be underestimated due to underreporting. Although landings are likely underreported, the average annual landings of 431 mt dw are among the highest for any species of shark managed by NMFS. As with many other elasmobranchs, smoothhound sharks are slow to reproduce and, therefore, could be vulnerable to stock collapse in the face of unrestricted fishing. In order to address the information deficiencies for this fishery, NMFS needs to collect reliable data concerning stock status to guide the development of conservation and management measures, if necessary and appropriate, to meet the requirements of the Magnuson-Stevens Act. Until initial management measures including the full incorporation of smoothhound sharks into the HMS management unit, a smoothhound permit,

incidental retention limits, and reporting requirements are in place to collect data concerning fishing location, effort, and the status of the stock, NMFS will not be able to determine whether further prescriptive conservation and management measures are necessary.

Section 3.2 Incidental HMS trawl fishery participants and gear

Section 3.2.1 Swordfish incidentally caught in squid trawls

The U.S. Atlantic squid fisheries predominantly operate in the southern New England and Mid-Atlantic regions with landings concentrated between Rhode Island and New Jersey. The fisheries are comprised of two species, the *Illex* and *Loligo* squids, and the catch is separated both temporally and geographically. As such, the two squid fisheries are separately managed by the MAFMC through the Atlantic Mackerel, Squid, and Butterfish FMP (MSB FMP). Each species requires its own federal permits.

The *Loligo* squid fishery has a greater number of participants than the *Illex* fishery. The *Loligo* fishery is comprised of 365 limited access moratorium permits, however only 180 of those permitted vessels are active and reported landings. Active *Loligo* permit holders are concentrated in New Jersey, Rhode Island, New York, and Massachusetts (descending abundance) (Table 1).

The *Illex* fishery is comprised of 76 limited access moratorium permits, of which only 18 are active and reported landings. Active *Illex* permit holders are concentrated in New Jersey, Rhode Island, and Massachusetts (descending abundance) (

Table 2).

Table 1 **Homeport state distribution of *Loligo*-butterfish moratorium vessel permit holders and number of vessels actively landing *Loligo* squid by homeport state**; Source: MAFMC 2010a

Home Port State	Permitted Vessels	Active Vessels
Massachusetts	103	25
New Jersey	83	45
New York	56	42
Rhode Island	52	44
North Carolina	22	13
Maine	20	0
Virginia	13	1
Connecticut	8	6
Pennsylvania	3	1
Maryland	2	2
New Hampshire	2	0
West Virginia	1	1
Total	**365**	**180**

Table 2 **Homeport state distribution of *Illex* moratorium vessel permit holders and number of vessels actively landing *Illex* squid by homeport state**; Source: MAFMC 2010a

Home Port State	Permitted Vessels	Active Vessels
New Jersey	26	8
Massachusetts	12	3
Rhode Island	12	5
North Carolina	7	1
New York	6	1
Other	13	0
Total	76	18

Average annual *Loligo* squid landings are usually slightly higher than average annual *Illex* landings. However, in 2009, *Loligo* squid landings were approximately half those of *Illex* landings. Rhode Island, New York, and New Jersey accounted for over 90 percent of *Loligo* landings in 2009 (Table 3). New Jersey and Rhode Island accounted for 99 percent of *Illex* landings (Table 4) in 2009 (MAFMC 2010a).

Table 3 ***Loligo* landings by state, 2009**; Source: MAFMC 2010a

State	*Loligo* landings (mt)	Percent of total landings
Rhode Island	5,054	54%
New York	1,859	20%
New Jersey	1,565	17%
Massachusetts	585	6%
Connecticut	166	2%
Virginia	63	1%
Other	14	0%
Total	**9,306**	**100%**

Table 4 ***Illex* landings by state, 2009**; Source: MAFMC 2010a.

State	*Illex* landings (mt)	Percent of total landings
New Jersey	11,185	61%
Rhode Island	6,945	38%
Virginia	282	1%
Total	**18,418**	**100%**

Description of the squid trawl fisheries and status of the *Loligo* and *Illex* squid stocks

Both *Illex* and *Loligo* squid fisheries predominately utilize bottom otter trawl gear, although other gears such as poundnets and jigs are occasionally used inshore. While, incidental catch of *Illex* occasionally occurs in the *Loligo* squid fishery and vice versa, the two squid fisheries are largely spatially and temporally distinct.

The *Loligo* squid trawl fishery occurs year-round in the mid-Atlantic region with fishing effort directed inshore during the warmer months of May through September, and offshore during the colder months of October through April (NEFSC 2006a). The latest stock assessment from 2002 concluded that the *Loligo* squid stock is unlikely to be overfished or to be experiencing overfishing. The quota has held steady since 2001 at 17,000 mt, with a slight

increase in 2009 to 19,000 mt. During that time, landings have fluctuated from approximately 9,000 mt to 17,000 mt, averaging about 14,000 mt annually. Numerous seasonal closures often impact total annual landings (MAFMC 2010a).

The *Illex* squid trawl fishery occurs almost exclusively during the summer and fall months between May through October. Fishing occurs offshore along the U.S. shelf, primarily in the Mid-Atlantic Bight (NEFSC 2006b). The latest stock assessment from 2006 could not definitively determine if the species was overfished or if overfishing is occurring; however, based on a number of qualitative analyses, the assessment determined that it is unlikely that the stock is experiencing overfishing. The quota has held steady since 2000 at 24,000 mt, during which landings have fluctuated from approximately 2,700 mt to 26,000 mt, averaging about 11,800 mt annually (MAFMC 2010a).

HMS permits held by squid trawl fishermen

As described in the Purpose and Need section (Section 1.0), the squid trawl fishery occasionally interacts with, and incidentally captures, swordfish during normal trawl fishing operations. Self-reported VTR data from 2000-2009 indicates that, of the vessels active in at least one of the two squid fisheries, 26 vessels incidentally caught swordfish while pursuing squid. Although a number of these vessels held one of the federal limited access swordfish permits, only five had been issued the necessary "HMS permit triple-pack" required for the retention and sale of swordfish. It is not possible at this time to use VTR data to determine which species of squid those vessels were pursuing when swordfish were caught, but an analysis of permit data and observer data shows that *Illex* squid trawl vessels encounter swordfish more often than do *Loligo* squid trawl vessels. Almost all of the 26 squid vessels that caught swordfish between 2000 and 2009 held an *Illex* permit in addition to a *Loligo* permit. Furthermore, based upon Northeast Fisheries Science Center (NEFSC) Observer Program data, the *Loligo* squid fishery only caught approximately 20 percent of the swordfish by weight as compared to the *Illex* fishery, despite the fact that *Loligo* landings are typically higher than *Illex* landings. In other words, even though the *Loligo* fishery is larger in terms of numbers of vessels and total catch, swordfish are caught much more often when fishing for *Illex* squid. HMS bycatch in squid fisheries is examined in greater detail in Section 3.3.

Table 5 **HMS permits held by squid fishermen (*Loligo* and *Illex*) interacting with swordfish (2000-2009)**; Source: VTR database, 2000-2009; Northeast Permit Office data; Southeast Permit Office data

Description	Number of Vessels
Active squid vessels	180 (approximate)
Squid trawl vessels that caught swordfish	26
Squid trawl vessels that caught swordfish and have a federal commercial swordfish permit	10
Squid vessels that caught swordfish and have the "HMS triple-pack" of limited access permits (SWO, Atl Tunas Longline, SHK)	5

Section 3.2.2 Smoothhound sharks caught incidentally in Atlantic trawl fisheries

As discussed in Section 1.1, smoothhound sharks were recently brought under federal management in 2010 through Amendment 3 to the 2006 Consolidated HMS FMP (Amendment

3), although management measures will not be implemented until smoothhound sharks are fully incorporated into the HMS management unit. The primary reason for bringing the species under federal management was to facilitate data collection to learn more about fishery participants and inform future stock assessments. Due to the historical absence of management measures, little is known about the smoothhound shark fishery or its stock status. During the initial period of federal management, while the Agency gathers data and information about the fishery, NMFS intends to minimize changes to the fishery. To achieve this goal, NMFS stated in the final rule implementing Amendment 3 that it would allow for the retention of smoothhound sharks caught incidentally in trawl gear, as historically allowed, but would not provide for directed trawl fishing on the species.

The absence of management measures and associated reporting and observer requirements has resulted in a dearth of information on the smoothhound shark fishery; though, many fishermen in the mid-Atlantic region have been reporting their landings. Some of these fishermen have federal permits for other species and are required to report all landings, including smoothhound sharks, due to the regulations in those other fisheries. Self-reported VTR data for New England and mid-Atlantic fisheries offers the best source of smoothhound shark landing data, particularly in the trawl fishery where smoothhound sharks are rarely, if ever, targeted. Analyzing VTR data allows for the identification of the primary trawl gear type, primary target species, and the incidental smoothhound catch relative to target catch.

Description of trawl fisheries that incidentally catch smoothhound sharks and status of major target stocks

Table 6 lists the five major trawl gear types as well as each gear's total smoothhound shark catch from 2000 through 2009. The VTR data indicates that otter bottom fish trawl is the primary trawl gear type that incidentally catches smoothhound sharks, with over 98 percent of the total smoothhound trawl catch. Because otter bottom fish trawl is by far the most prevalent gear in the smoothhound trawl fishery, all subsequent smoothhound/trawl analyses in this document focus solely on this gear type. Approximately 266 vessels retained smoothhound sharks with otter bottom fish trawl gear between 2000 and 2009, with a total of 12,975 trips (average of 1,298 trips per year).

Table 6 Types of trawl gear that incidentally catch smoothhounds, VTR data 2000-2009

Trawl Type	Smoothhound kept (lbs)	Smoothhound discarded (lbs)	Smoothhound catch (kept+discarded)
Otter Trawl, Bottom, Fish	26,829,977	2,531,749	29,361,726
Otter Trawl, Midwater	345,745	0	345,745
Otter Trawl, Shrimp	78,273	0	78,273
Otter Trawl, Bottom, Scallop	56,307	15	56,322
Otter Trawl, Beam	46,373	226	46,599
Total	**27,356,675**	**2,531,990**	**29,888,665**

Bottom trawl fisheries that are the most likely to incidentally catch smoothhound sharks include the squid trawl and Mid-Atlantic bottom trawl fisheries. Figure 1 and Figure 2 highlight the six targeted species most often caught along with smoothhound sharks in otter bottom fish

trawl gear. This graph utilizes VTR data queried to include all otter bottom fish trawl trips that caught smoothhounds. All of the species caught on these trips were then amassed and the total for each species across all the trips was calculated. *Loligo* squid is the dominant target species with over 26 percent of the trawl catch, followed by several other species routinely caught in the Mid-Atlantic bottom trawl fishery, including summer flounder (fluke), silver hake (whiting), croaker, skate, and scup. The "Other" category includes 129 species caught along with smoothhound sharks, each of which separately constitutes less than five percent of the total catch.

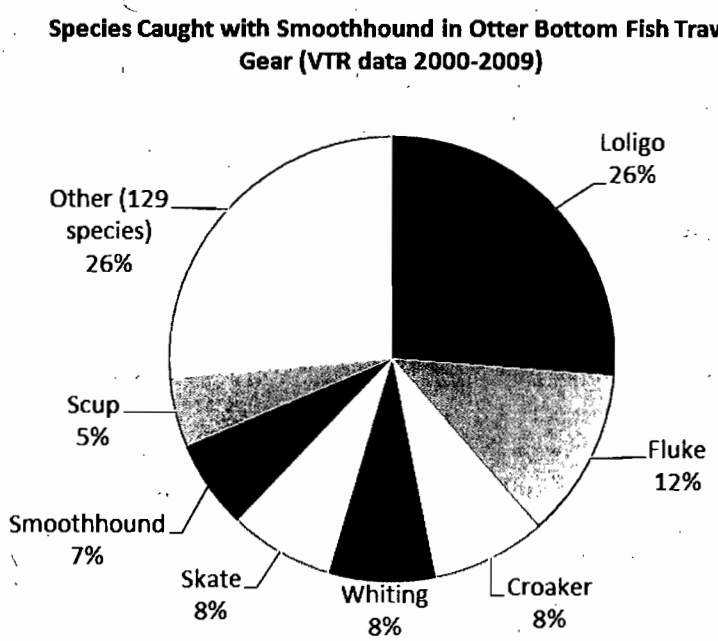

Figure 1 **Species caught with smoothhound sharks in otter bottom fish trawl gear, relative levels;** Source - VTR data (2000 – 2009).

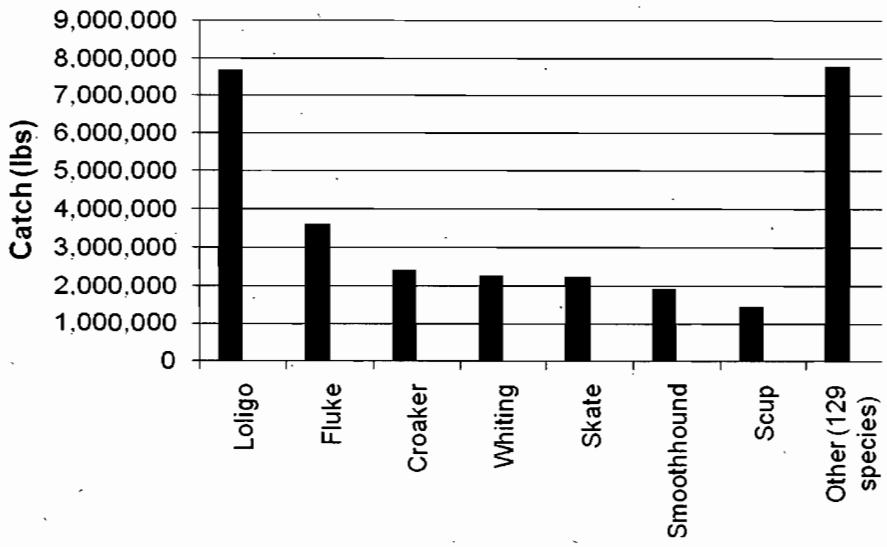

Figure 2 **Species caught with smoothhound sharks in otter bottom fish trawl gear, absolute levels;** Source - VTR data (2000-2009).

As indicated in Figure 2, smoothhound sharks are most frequently caught with trawl gear in the directed fisheries for *Loligo* squid, summer flounder, scup, croaker, silver hake (whiting), and skate. The *Loligo* squid trawl fishery was described above in Section 3.2.1. The remaining five target species most often caught along with smoothhound sharks in the bottom trawl fishery (summer flounder, silver hake, croaker, skate, and scup) are generally considered to be included in the "mid-Atlantic bottom trawl fishery;" sometimes referred to as the mid-Atlantic mixed species trawl fishery. Although these species are managed through several different state and federal FMPs, the "mid-Atlantic bottom trawl fishery" is an Agency-accepted name for the mixed species fishery that utilizes bottom otter fish trawl to catch a variety of species including bluefish, croaker, monkfish, summer flounder (fluke), winter flounder, silver hake (whiting), spiny dogfish, smooth dogfish, scup, black sea bass, Atlantic cod, haddock, pollock, yellowtail flounder, witch flounder, windowpane flounder, American plaice, Atlantic halibut, redfish, red hake, white hake, ocean pout, skate spp, Atlantic mackerel, *Loligo* squid, *Illex* squid, and Atlantic butterfish. The fishery primarily occurs between Cape Cod, Massachusetts and Cape Hatteras, North Carolina. It is a Marine Mammal Protection Act (MMPA) Category II fishery, with occasional incidental mortality or serious injury of marine mammals. The Atlantic Trawl Gear Take Reduction Team (ATGTRT) works to minimize the fishery's impact on marine mammals (NOAA 2010).

Summer flounder (fluke), scup, and black sea bass are federally managed by the MAFMC through the Summer Flounder, Scup, and Black Sea Bass FMP (SSB FMP), and at the state level by the Atlantic States Marine Fisheries Commission (ASMFC) through the Interstate FMP for Summer Flounder, Scup, and Black Sea Bass. According to a 2006 NEFSC stock assessment, summer flounder is not overfished, although overfishing is occurring (NEFSC 2006c). A 2008 NEFSC stock assessment determined that scup were not overfished and overfishing is not occurring, however, the assessment noted that the stock is very data poor (MAFMC 2010b). The ASMFC and the MAFMC regularly hold Joint Summer Flounder, Scup, and Black Sea Bass Advisory Panel Meetings to coordinate state and federal management of the

species. Trawl landings for black sea bass are minimal as the fishery is primarily conducted using pots and traps, so no further discussion of this species or fishery is included in this document.

Croaker is an abundant inshore, coastal species that supports both commercial and recreational fisheries. Since it is primarily an inshore species, croaker is not federally managed. Management comes exclusively from the ASMFC Interstate FMP for Atlantic Croaker. Commercial landings fluctuate from year to year due to natural variations in recruitment, however the stock appears healthy and is not overfished with no overfishing occurring. ASMFC implementation of the Interstate FMP for Atlantic Croaker typically includes trawl time/area or seasonal closures and sometimes includes minimum sizes and retention limits (ASMFC 2010).

Silver hake (whiting) are federally managed along with two other species (red hake and offshore hake) by the NEFMC through the Small Mesh Multispecies Program via Amendment 12 to the Northeast Multispecies FMP. These three species are primarily managed through the use of trawl net mesh size restrictions and retention limits. To encourage vessels to use larger mesh-size trawl nets, the Northeast Multispecies FMP allows for higher retention limits when using larger mesh sizes. The market for these species is limited, and landings have slowly decreased. According to the 2006 NEFSC stock assessment, none of the small mesh multispecies, including whiting, are experiencing overfishing (NEFSC 2010a). The ASMFC does not actively recommend state management measures for the species.

Skates are federally managed by the NEFMC through the Northeast Skate Complex FMP. The FMP collectively manages seven species of skates that are distributed along the northeast U.S. coast, south to the Chesapeake Bight. Commercial landings of skate typically end up in one of two distinct markets: lobster bait or skate wing for human consumption. Skates only recently came under federal management in 2003, therefore, historical landings data is incomplete. However, the 2009 stock assessment shows signs of increasing abundance levels (NEFSC 2010b). The ASMFC does not actively recommend state management measures for the species.

Section 3.3 Incidental trawl catches of HMS and discard patterns

Section 3.3.1 Swordfish caught incidentally in squid trawls

Squid trawl vessels have the potential to catch a wide variety of non-target species including HMS, which may be foraging on squid or squid predators. Self-reported VTR data from 2000-2009 queried to include all squid trawl trips that also caught HMS (where squid is ≥80 percent of the total catch by weight) highlights the variety of HMS caught on squid trawl trips. Figure 3 and Figure 4 demonstrate that smoothhound sharks dominate the HMS incidental catch, both in terms of retained and discarded catch. Incidental smoothhound shark catch in trawl gear is specifically discussed in Issue B of this document, and therefore will not be addressed further within the context of HMS bycatch in squid trawls.

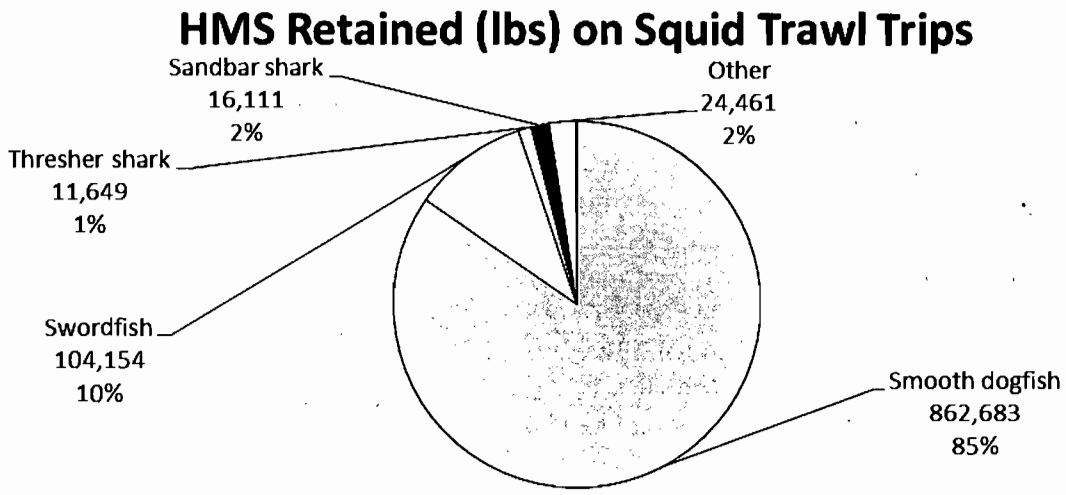

Figure 3 **HMS retained on squid trawl trips (lbs)**; Source - VTR data (2000-2009)

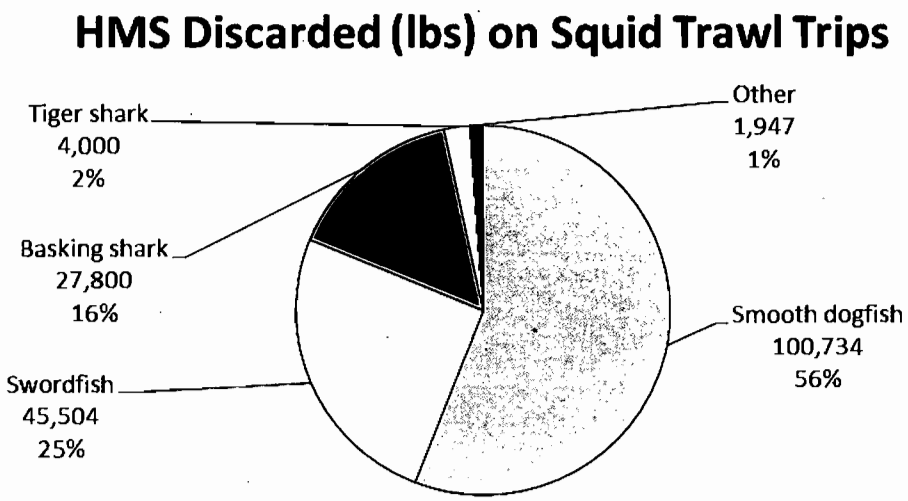

Figure 4 **HMS discarded on squid trawl trips (lbs)**; Source VTR database 2000-2009

While the VTR data indicates the major HMS that are typically caught in squid trawls, NEFSC Observer Program data provides specific squid trawl data directly comparable across all trips and vessels and does not rely on self-reported information. Observer levels in the squid fishery are typically < 10 percent (MAFMC 2009), making absolute levels of HMS bycatch difficult to calculate. The data does, however, allow for relative comparisons across HMS. NEFSC Observer Program data (2000-2009) reveals that 26 HMS species were captured including swordfish, sharks, and tunas. Figure 5 displays the top 21 HMS (with smoothhound sharks removed) by number of fish caught, broken out into final disposition. Displaying the same data, but in weight of fish, shows a similar trend, however species such as basking sharks would be disproportionally represented due to their larger size. The most often encountered

HMS is swordfish. When the fish counts for each of the final dispositions (discarded, kept and sold, kept for bait, kept for consumption) are tallied, swordfish far outnumber the next most prevalent species, sandbar sharks, by almost 3:1.

Besides swordfish and smoothhound sharks, several other HMS have historically been caught, and occasionally retained, by squid trawl vessels including sharks and tunas. Smoothhound sharks have not been managed prior to 2010, therefore those landings have been legal. Swordfish are the only other HMS that may be legally retained by squid trawl vessels, provided that the vessel has been issued the proper HMS permits. Under current regulations, the situation regarding sharks and tunas may be confusing to permit holders. To retain swordfish, a vessel must be issued a swordfish LAP (other than swordfish Handgear LAP), a shark LAP, and an Atlantic Tunas Longline LAP. However, issuance of a shark LAP and an Atlantic Tunas Longline LAP does not allow for the retention of sharks and tunas by squid trawl vessels because trawl gear is not authorized for these species, and a squid trawl exemption has not been established for these species (as exists for swordfish). The alternatives to establish a new Incidental HMS Squid trawl permit or a swordfish exemption may alleviate some of the current confusion. NMFS intends to further clarify that the retention of sharks and tunas by squid trawl vessels is illegal through this rulemaking and its outreach process.

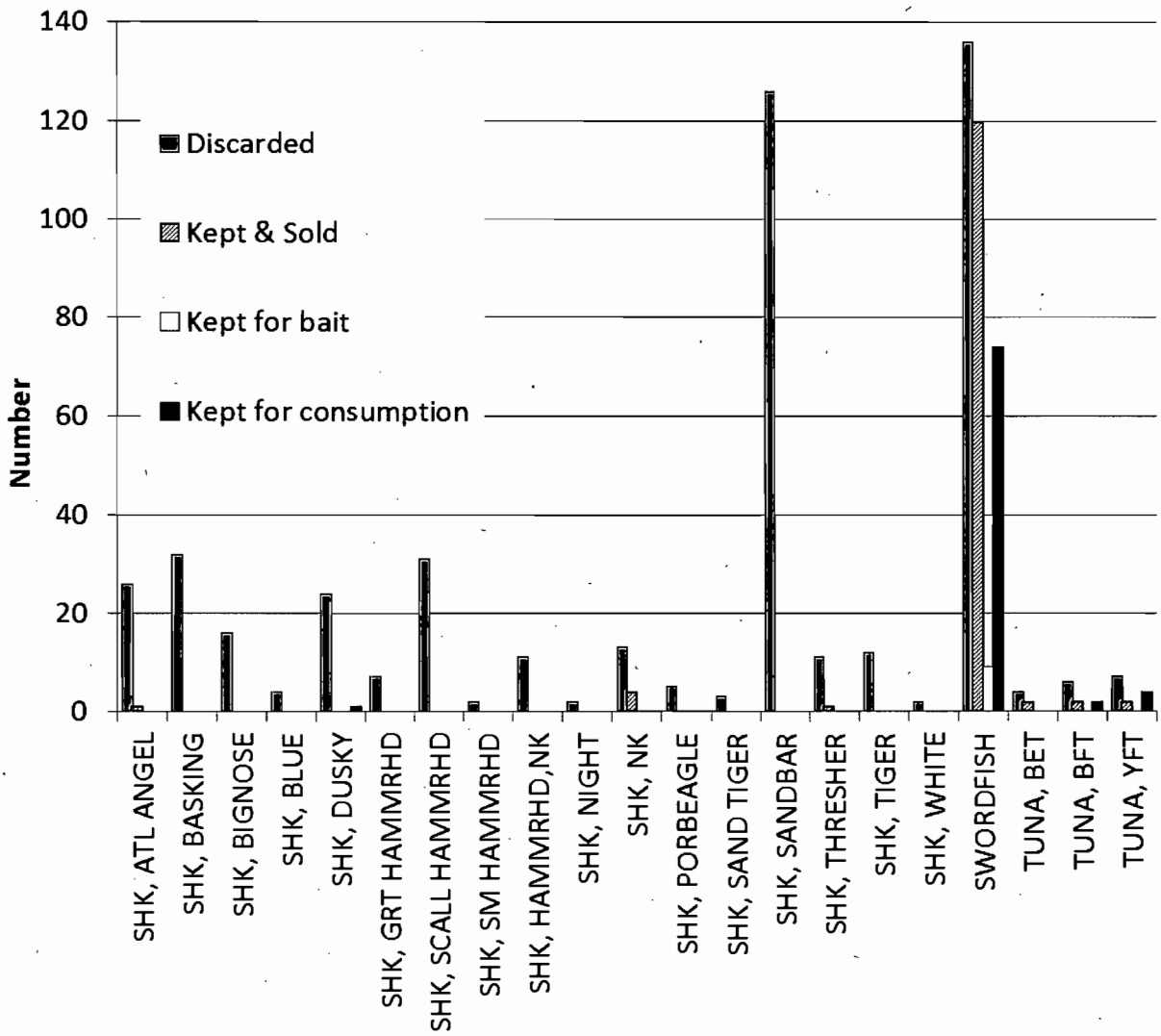

Figure 5 **Top 21 HMS (smoothhound removed) caught in squid trawls by number;** Source: NEFSC Observer Program data (2000-2009).

Among the two squid fisheries, *Loligo* and *Illex*, the *Illex* fishery is much more likely to catch swordfish. NEFSC observer data from 1997-2006 shows that the *Illex* fishery caught 12,057 lbs of swordfish (7,683 lbs kept + 4,374 lbs discarded) while the *Loligo* fishery caught 2,468 lbs of swordfish (1,186 lbs kept + 1,282 lbs discarded) (MAFMC 2009). During that time period, average annual *Illex* landings were below that of *Loligo* landings and there were fewer active *Illex* squid trawl fishery participants than in the *Loligo* fishery (MAFMC 2010a). Given that the *Illex* fishery is smaller than the *Loligo* fishery, both in terms of squid landings and number of participants, yet it caught more swordfish supports the conclusion that the *Illex* fishery is more likely to interact with swordfish. This conclusion is further supported by the known seasonal distribution of the two squid fisheries and by swordfish biology and migratory patterns. During warmer summer months in the mid-Atlantic region, *Loligo* vessels are typically fishing inshore whereas *Illex* vessels are operating further offshore in more suitable swordfish habitat (see Section 3.2.1, Description of the squid fisheries).

Section 3.3.2 Smoothhound sharks caught incidentally in Atlantic trawl fisheries

Section 3.2.2 discusses in detail the two fisheries that most often catch smoothhound sharks in trawl gear: the *Loligo* squid fishery and the Mid-Atlantic bottom trawl fishery. Both of these fisheries operate in the regions and seasons where smoothhound sharks are migrating through Mid-Atlantic inshore waters. Figure 6 shows the total smoothhound shark catch in otter bottom fish trawl gear by month. The smoothhound shark catch increases as the water warms and the species move inshore from their overwintering area in the offshore waters off the North Carolina coast (NMFS 2010). Smoothhound shark catches peak in June, and then slowly drop off into the winter months.

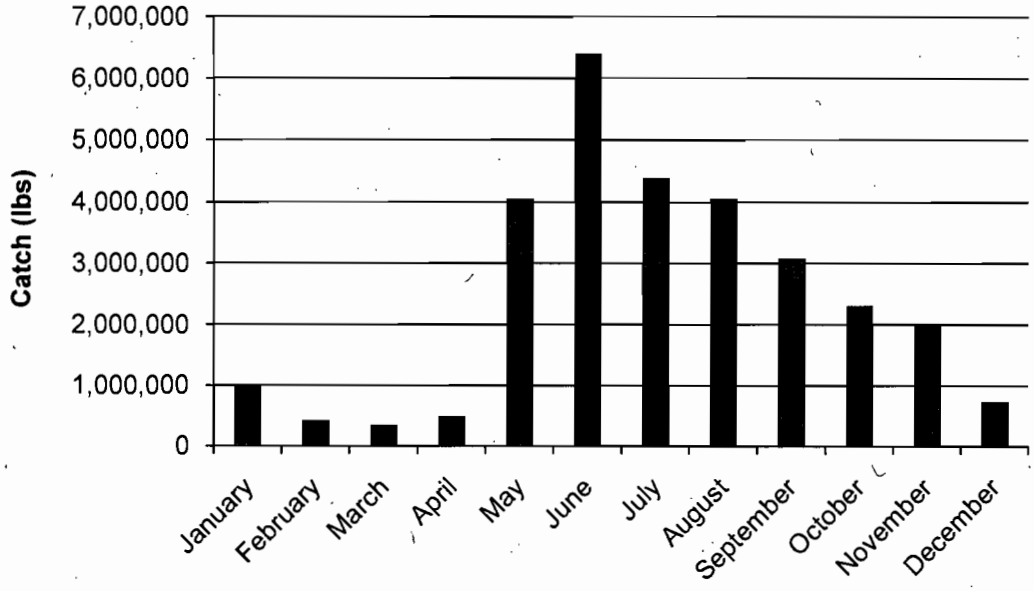

Figure 6 **Smoothhound shark catch in otter bottom fish trawl gear, by month**; Source: VTR database 2000-2009

When retained, smoothhound sharks typically make up a fraction of the total retained catch by weight. Figure 7 presents a trip-level analysis of otter bottom fish trawl trips that retained smoothhound sharks. Each bar on the graph represents a range of values of percent smoothhound shark catch relative to total catch. The line is an additive total of all trawl trips that retained smoothhound sharks. The vast majority (46 percent) of trips had total retained catches consisting of five percent or less smoothhound sharks by weight. As the percent smoothhound shark catch increases, the frequency of trips quickly drops. Only 11 percent of smoothhound shark trawl trips caught more than 25 percent smoothhound shark, and only three percent of trips retained more than 50 percent (Table 10).

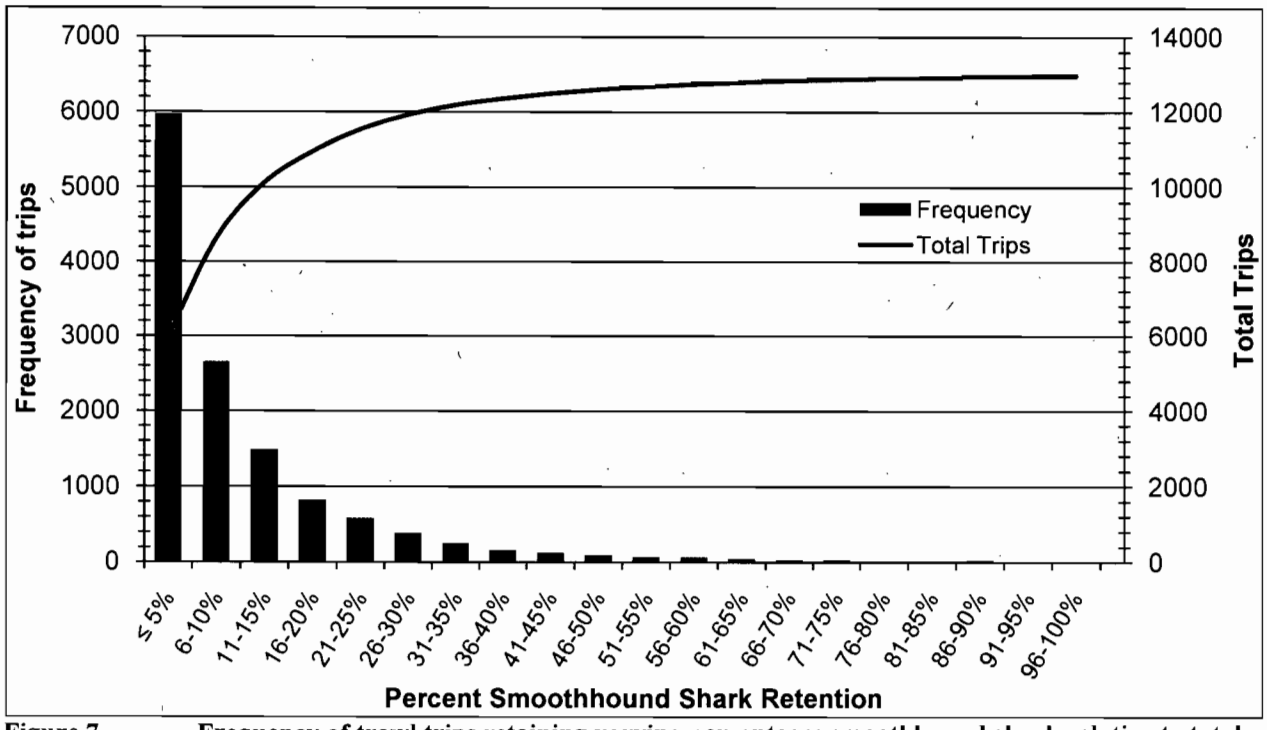

Figure 7 **Frequency of trawl trips retaining varying percentages smoothhound shark relative to total catch**; Source: VTR Database 2000-2009

Section 3.4 Habitat

The Magnuson-Stevens Act requires NMFS to identify and describe essential fish habitat (EFH) for each life stage of managed species (16 U.S.C. §1855((b)(1), as implemented by 50 C.F.R. §800.815), and to evaluate the potential adverse effects of fishing activities on EFH, including the cumulative effects of multiple fisheries activities (50 C.F.R §800.815(a) (2)). Habitats that satisfy the criteria in the Magnuson-Stevens Act have been identified and described as EFH in the 1999 FMP and in Amendment 1 to the 1999 FMP. In 2009, NMFS completed the five year review and update of EFH for Atlantic HMS with the publication of Amendment 1 to the Consolidated HMS FMP (June 12, 2009, 74 FR 28018). As a result of the 2009 Amendment 1 to the Consolidated HMS FMP, EFH was updated for all federally-managed Atlantic HMS. This amendment updated and revised EFH boundaries for HMS, designated a new habitat area of particular concern (HAPC) for bluefin tuna in the Gulf of Mexico, and analyzed fishing and non-fishing impacts on EFH. In 2010, NMFS brought the smoothhound shark complex under federal management with publication of Amendment 3 (June 1, 2010, 75 FR 30484). This amendment added EFH for smooth dogfish and authorized a number of gears that could be used in the directed smoothhound shark fishery.

As described in Amendment 1 to the Consolidated HMS FMP, there is no evidence that physical effects caused by any authorized HMS gears are adversely affecting EFH for targeted or non-targeted species, to the extent that physical effects can be identified on the habitat or the fisheries. The MAFMC determined that bottom otter fish trawl is the primary gear used in trawl fisheries, including MSB and SSB fisheries where the majority of smoothhound sharks and swordfish are incidentally caught. The MAFMC analyzed MSB and SSB gear impacts on EFH in Section 6.3.3 of Amendment 9 to the MSB FMP (July 31, 2008, 73 FR 37382) and Section

3.2.7.2.2 to Amendment 13 to the SSB FMP (March 31, 2003, 68 FR 10181) and determined that bottom otter trawl is expected to impact bottom habitat or EFH. This type of fishing was demonstrated to have some effects on composition and biomass of benthic species in the affected areas, but the directionality and duration of these effects varied by study and substrate types.

The actions analyzed in this EA are not expected to increase overall trawl fishing effort or increase gear impacts on any EFH beyond those impacts that have already been analyzed in the NEPA documents developed for the corresponding target fisheries (HMS, MSB and SSB). These preferred alternatives will reduce regulatory discards by allowing fishermen to retain incidentally-caught smoothhound sharks and swordfish that would otherwise be discarded dead. It is not anticipated that squid trawl vessels, or other trawl vessels, will start fishing (or take more or longer trips) solely because they would be allowed to retain limited amounts of swordfish or smoothhound sharks, respectively, that previously had to be discarded. Because overall trawl fishing effort is not expected to change, there would be no ecological impacts to EFH as a result of implementing the actions in this EA

Section 3.5 Management of trawl fisheries which incidentally capture HMS

This section is divided into three subsections. The first subsection describes the management history of trawl gear in the Consolidated HMS FMP. In the second subsection, NMFS has identified the *Illex* trawl fishery, and to a much lesser extent, the *Loligo* squid trawl fishery as being more likely to interact with North Atlantic swordfish. Therefore, to describe the management history and economic characteristics of these trawl fisheries, NMFS utilized information obtained primarily from the MSB FMP. In the third subsection, NMFS identified the *Loligo* squid trawl fishery and the Mid-Atlantic bottom trawl fishery as being more likely to interact with smoothhound sharks, although other fisheries including the small-mesh multispecies trawl fishery for silver hake (whiting), red hake and white hake, the near-shore croaker fishery, and other fisheries may also interact with smoothhound sharks. Therefore, to describe the management history and economic characteristics of these trawl fisheries, NMFS utilized information obtained primarily from the SSB FMP. Because the black sea bass fishery is prosecuted almost entirely with pots, traps, and hook and line gear, only the economic characteristics of the summer flounder and scup fisheries are described.

Management History of Trawl Gear in the HMS FMP

HMS fisheries, including swordfish and smoothhound shark fisheries, are managed domestically by NMFS under the Consolidated Atlantic HMS FMP. Implementing regulations at 50 CFR part 635 include fishery regulations governing quotas, seasons, time/area closures, gear restrictions, retention limits, and minimum size limits.

Fishermen with a commercial swordfish permit must report fishing activities in an approved logbook within 48 hours of each day's fishing activities, or before offloading for one-day trips, whichever is sooner, and submit the logbook within 7 days of offloading. Logbook reports must include weighout slips showing the dealer to whom the fish were transferred, the date they were transferred, and the carcass weight of each fish for which individual weights are normally recorded. For fish that are not individually weighed, a weighout slip must record total

weights by species and market category. NMFS requires the submission of a "No Fishing" reporting form if no trips occurred during the preceding month.

Swordfish must be kept in whole or dressed form through landing. "Dressed" indicates a headed/gutted fish with some or all fins removed. Swordfish harvested from the management unit cannot be filleted or cut into pieces at sea.

Trawl gear is not an authorized gear for any HMS. However, because HMS are occasionally captured in trawl fisheries, NMFS has historically managed Atlantic trawl fisheries as incidental HMS fisheries, allowing for the retention of swordfish and, in the future, smoothhound sharks (but only when captured while trawling for other species).

As described in Section 1.1, squid trawl vessels have been allowed to retain incidentally-caught swordfish since 2000 only if the vessel has been issued an "HMS permit triple-pack" (*i.e.*, a swordfish LAP (other than handgear), a shark LAP, and an Atlantic Tunas Longline LAP). A vessel is considered to be in the squid trawl fishery when it has no commercial fishing gear other than trawls on board and when squid constitutes not less than 75 percent by weight of the total retained catch. The current swordfish retention limit for squid trawl vessels that have been issued the "HMS permit triple-pack" is 15 swordfish per vessel per trip. All other swordfish-specific management measures apply to squid trawl vessels, including the minimum size requirements, annual quotas, and seasons. Swordfish caught by squid trawl vessels are counted against the annual incidental swordfish quota.

Smoothhound sharks were brought under federal management in 2010 through implementation of Amendment 3 to the Consolidated HMS FMP. NMFS included a new requirement for a federal smoothhound permit that is to be effective when smoothhound sharks are fully incorporated into the HMS management unit. Among other objectives, Amendment 3 sought to collect better data on the smoothhound shark fishery and improve information regarding the life history of the species. Consistent with the stated intent of Amendment 3 to minimize changes in the fishery, trawl gear was not authorized in the fishery but NMFS anticipated allowing vessels with trawl gear to land smoothhound shark species at incidental levels, similar to swordfish. NMFS is currently considering an appropriate retention limit that would allow fishermen to harvest incidentally-caught smoothhound shark species with trawl gear provided that sufficient quantities of target catch are retained.

The MAFMC, and to a lesser extent ASMFC, have primary management authority for the two trawl fisheries that incidentally capture the vast majority of swordfish (*i.e.*, squid trawl) and smoothhound sharks (*i.e.*, the SSB mixed trawl fishery). Some other fisheries may occasionally capture swordfish and smoothhound sharks, but these are the two predominant fisheries. A brief history of the management of the two mid-Atlantic trawl fisheries that incidentally catch the majority of HMS is presented below, as described by the MAFMC in Amendment 9 to the MSB FMP Section 4.2 (July 31, 2008, 73 FR 37382) and Amendment 14 to the SSB FMP Section 4.2 (August 22, 2007, 72 FR 40077).

Management History of the Atlantic Mackerel, Squid, and Butterfish FMP

Management of all northwest Atlantic mackerel (*Scomber scombus*), *Loligo* squid, *Illex* squid, and butterfish (*Peprilus triacanthus*) under U.S. jurisdiction has been managed since 1977 by the Mid-Atlantic Fishery Management Council (MAFMC), based on an annual total allowable catch (TAC), under the provisions of the MSB FMP. Management of the Atlantic mackerel, *Loligo* and *Illex* squid, and butterfish fisheries began through the implementation of three separate FMPs (one each for mackerel, squid, and butterfish) in 1978. A brief summary of the subsequent amendments and frameworks that affected management of these fisheries is presented below.

Table 7 Management History of the Atlantic Mackerel, Squid, and Butterfish FMP

Year	Document	Management Action
1978, 1979	Original FMPs (3)	• Established management of Atlantic mackerel, squid, and butterfish fisheries
1883	Merged FMP	• Consolidated management of Atlantic mackerel, squid, and butterfish fisheries under a single FMP
1984	Amendment 1	• Implemented squid OY adjustment mechanism • Revise Atlantic mackerel mortality rate
1986	Amendment 2	• Equated fishing year with calendar year • Revised squid bycatch TALFF allowances • Implemented framework adjustment process • Converted expiration of fishing permits from indefinite to annual
1991	Amendment 3	• Established overfishing definitions for all four species
1991	Amendment 4	• Limited the activity of directed foreign fishing and joint venture transfers to foreign vessels • Allowed for specification of OY for Atlantic mackerel for up to three years
1996	Amendment 5	• Adjusted *Loligo* MSY • Eliminated directed foreign fisheries for *Loligo*, *Illex*, and butterfish • Instituted a dealer and vessel reporting system • Instituted an operator permitting system • Implemented a limited access system for *Loligo*, *Illex* and butterfish • Expanded the management unit to include all Atlantic mackerel, *Loligo*, *Illex*, and butterfish under U.S. jurisdiction.
1997	Amendment 6	• Revised the overfishing definitions for *Loligo*, *Illex*, and butterfish • Established directed fishery closure at 95% of DAH for *Loligo*, *Illex* and butterfish with post-closure trip limits for each species • Established a mechanism for seasonal management of the *Illex* fishery to improve the yield-per recruit
1997	Amendment 7	• Established consistency among FMPs in the NE region of the U.S. relative to vessel permitting, replacement and upgrade criteria
1998	Amendment 8	• Brought the FMP into compliance with new and revised National Standards and other required provisions of the Sustainable Fisheries Ac • Added a framework adjustment procedure
2001	Framework 1	• Created a quota set-aside for the purpose of conducting scientific research

Year	Document	Management Action
2002	Framework 2	• Extended the moratorium on entry to the *Illex* fishery for an additional year • Established that previous year specifications apply when specifications for the management unit are not published prior to the start of the fishing year (excluding TALFF specifications) • Allowed for the specification of management measures for *Loligo* for a period of up to three years
2003	Framework 3	• Extended the moratorium on entry to the *Illex* fishery for an additional year
2004	Framework 4	• Extended the moratorium on entry to the *Illex* fishery for an additional five years
2008	Amendment 9 (Volume 1) (Volume 2)	• Allowed for multi-year specifications for all four managed species (mackerel, butterfish, *Illex*, and *Loligo*) for up to 3 years • Extended the moratorium on entry into the *Illex* fishery, without a sunset provision • Adopted biological reference points for *Loligo* recommended by the stock assessment review committee (SARC) • Designated EFH for *Loligo* eggs based on available information • Prohibited bottom trawling by MSB-permitted vessels in Lydonia and Oceanographer Canyons
2010	Amendment 10	• Implemented a butterfish rebuilding program. • Increased the *Loligo* minimum mesh in Trimesters 1 and 3 • Implemented a 72-hour trip notification requirement for the *Loligo* fishery

Management History of the Summer Flounder, Scup, and Black Sea Bass FMP

The summer flounder, scup, and black sea bass fisheries are managed cooperatively by the MAFMC and the ASMFC. The management units specified in the FMP include summer flounder (*Paralichthys dentatus*) in U.S. waters of the Atlantic Ocean from the southern border of North Carolina northward to the U.S./Canada border, and scup (*Stenotomus chrysops*) and black sea bass (*Centropristis striata*) in U.S. waters of the Atlantic Ocean from 35°E 13.3° N. lat. (the latitude of Cape Hatteras Lighthouse, Buxton, North Carolina) northward to the U.S./Canada border. A brief summary of the subsequent amendments and frameworks that affected management of these fisheries is presented below (Table 8), where "Plan Species" indicates which plan species were affected by the given action.

Table 8 Summary of the history of the Summer Flounder, Scup, and Black Sea Bass FMP

Year	Document	Plan Species	Management Action
1988	Original FMP	summer flounder	• Established management plan for summer flounder
1991	Amendment 1	summer flounder	• Established an overfishing definition for summer flounder
1993	Amendment 2	summer flounder	• Established rebuilding schedule, commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements for summer flounder • Created the Summer Flounder Monitoring Committee
1993	Amendment 3	summer flounder	• Revised the exempted fishery line • Increased the large mesh net threshold

Year	Document	Plan Species	Management Action
			• Established otter trawl retention requirements for large mesh use
1993	Amendment 4	summer flounder	• Revised state-specific shares for summer flounder quota allocation
1993	Amendment 5	summer flounder	• Allowed states to combine or transfer summer flounder quota
1994	Amendment 6	summer flounder	• Set criteria for allowance of multiple nets on board commercial vessels for summer flounder • Established deadline for publishing catch limits, Commercial management measures for summer flounder
1995	Amendment 7	summer flounder	• Revised the F reduction schedule for summer flounder
1996	Amendment 8	summer flounder and scup	• Incorporated Scup FMP into Summer Flounder FMP and established scup measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements
1996	Amendment 9	summer flounder and black sea bass	• Incorporated Black Sea Bass FMP into Summer Flounder FMP and established black sea bass measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements
1997	Amendment 10	summer flounder, scup, and black sea bass	• Modified commercial minimum mesh requirements, continued commercial vessel moratorium, prohibited transfer of fish at sea, and established special permit for party/charter sector for summer flounder
1998	Amendment 11	summer flounder, scup, and black sea bass	• Modified certain provisions related to vessel replacement and upgrading, permit history transfer, splitting, and permit renewal regulations
1999	Amendment 12	summer flounder, scup, and black sea bass	• Revised FMP to comply with the SFA and established framework adjustment process
2001	Framework 1	summer flounder, scup, and black sea bass	• Established quota set-aside for research for all three species
2001	Framework 2	summer flounder	• Established state-specific conservation equivalency measures for summer flounder
2003	Framework 3	scup	• Allowed the rollover of winter scup quota • Revised start date for summer quota period for scup fishery
2003	Framework 4	scup	• Established system to transfer scup at sea
2003	Amendment 13	summer flounder, scup, and black sea bass	• Addressed the disapproved sections of Amendment 12 • Revised black sea bass commercial quota system • Addressed other black sea bass mgmt. measures
2004	Framework 5	summer flounder, scup, and black sea	• Established multi-year specification setting of quota for all three species

Year	Document	Plan Species	Management Action
		bass	
2006	Framework 6	summer flounder	• Established region-specific conservation equivalency measures for summer flounder

Section 3.6 Economic and social aspects of incidental HMS trawl fisheries

The following information describing squid trawl fisheries was obtained from the Final Supplemental Environmental Impact Statement (FSEIS) prepared for Amendment 9 to the SMB FMP (MAFMC 2008), and from the FSEIS prepared for Amendment 10 to the SMB FMP (MAFMC 2009), both developed by the MAFMC. This introductory section primarily describes the general social and economic characteristics of larger vessels operating in the squid trawl fishery. Subsequent sections specifically discuss *Illex* and *Loligo* squid trawl fisheries, respectively.

Approximately 90-95 percent of *Loligo, Illex*, Atlantic mackerel, and butterfish vessels prosecute the fishery with otter trawls. The remaining 5 percent of vessels deploy pound nets or traps.

The extensive bottom otter trawl fishery for *Loligo* squid, *Illex* squid, Atlantic mackerel, and butterfish ranges from Massachusetts to Maryland. Due to the diversity in fishing vessels and strategies for prosecuting the fisheries it is difficult to describe a "typical" squid, mackerel, or butterfish fishing experience. However, vessels generally fall into one of two class sizes: 30-45 feet or 50-160 feet. The smaller vessels account for approximately 10-15 percent of the otter trawl landings of squid, mackerel, and butterfish. These vessels are known as "day boats" and fish inshore waters from early May through July. Typically, a day boat carries a crew of one to three fishermen and the boat returns to the dock each night.

Larger vessels ranging from 50-160 feet carry three to four fishermen on average, however, vessels that freeze and process fish at sea may carry up to 10-12 crewmen. These larger vessels run from 1-18 day trips depending upon the vessel's capability to store catch. Vessels that do not freeze and process at sea are known as "wet boats." These vessels either ice their catch or store it in refrigerated sea water for up to seven days. Vessels that freeze at sea have the ability to make longer trips averaging 12-14 days at sea, and extending up to 18 days at sea. Two of the larger, freezer trawlers are described below.

Sea Freeze, Ltd. of North Kingstown, RI is the largest producer of sea-frozen fish on the east coast of the United States. Its two vessels are the F/V PERSISTENCE and the F/V RELENTLESS. These two vessels supply sea-frozen and land-frozen fish to domestic and international markets including bait products to long-line fleets. Sea Freeze's dedicated trawlers are some of the largest freezer trawlers on the east coast. Their catch is marketed nationally and world-wide. Fishing operations target *Illex* and *Loligo* squid, mackerel, herring and to a lesser degree, butterfish. The vessels are approximately 140 ft in length with a hold capacity of approximately 280 mt and a daily freezing capacity of 50 mt per day.

Domestic sales account for approximately 30 percent of total Sea Freeze sales, and 70 percent are exported. Internationally, Eastern Europe and Asia are two important regions that

purchase from Sea Freeze. In both locations imports are largely used for human consumption. Atlantic mackerel is sold to companies in Canada as baitfish, and *Illex* squid is sold domestically as bait for the groundfish, crab, lobster, swordfish, and tuna fisheries. Zoos and aquariums also purchase Sea Freeze products as feed for other species. *Illex* squid and mackerel are the mainstay of the business and account for approximately 80 percent of revenue.

Sea Freeze operations are limited to catching, cold storage, and marketing whole fish. The shore-based cold storage is used primarily for catch from the dedicated freezer trawlers, though occasionally other vessels unload and store there. The plant employs approximately 60 people including 10 administrative and managerial staff, 20 crew working rotating shifts, and 15 individuals that work in the storage facility (packing, loading, etc.). These employees work full time and employment is generally stable year round. Seasonal operation of the plant is as follows: *Illex* squid – May to October; Mackerel January – May; and, *Loligo* squid – September to May.

Another large squid vessel is the F/V FLICKA, homeported in Cape May, NJ. The F/V FLICKA is a 140 ft. freezer trawler. It can deposit fish in frozen blocks or in refrigerated sea water (RSW) tanks. It can carry about 200 tons of frozen product, and roughly the same amount of RSW product.

During the summer season *Illex* squid are generally frozen. Given the draft of the vessel, the FLICKA can only dock in Cape May, NJ during high tide. The F/V FLICKA steams about 7 hours to reach its closest fishing areas (between the Baltimore and Wilmington Canyons) and can steam as long as 24 hours to reach farther areas (*i.e.*, the canyons off North Carolina).

The otter trawl net is set at dawn and hauled back one to three hours later. This process is repeated throughout the day until evening. The goal of the F/V FLICKA is to catch 30 to 40 tons per day. Because *Illex* squid disperse at night, fishing occurs only during the day. When the squid are hauled back, they are put immediately into the six vertical plate freezers. If there are more squid than the freezers can hold, the rest are placed into the RSW tanks until the next freezing cycle.

It takes about one and half hours to empty and reload the freezers. The frozen, forty pound blocks, are boxed and transported down into the storage hold, which is kept at -10 degrees F or colder. The squid take about three and half hours to freeze and then the whole cycle begins again. This process occurs approximately six times per day. Life on the F/V FLICKA revolves around this cycle. The crew eats, sleeps, and sets or hauls nets while the squid are being frozen.

Water temperature, fathometers, and sonar are all utilized to locate schools of squid. When schools are found, large amounts can be caught very quickly. If the squid are plentiful, the vessel can be completely filled in one day. At the end of 5 days, the storage hold is usually full and the F/V FLICKA steams back to Cape May, NJ, to unload. While fish are unloaded, the crew re-provisions the vessel, repairs worn or broken items, and otherwise readies the vessel to return to sea. Generally, the vessel returns to sea about 24 hours after it arrives.

The winter fishery primarily targets *Loligo* squid or Boston mackerel. Like the *Illex* squid, fish is either frozen or stored in RSW tanks. During some winter seasons the vessel has opted to "wet fish." The shore side facilities have increased their freezing and handling capacity to handle the "carrying capacity" per trip in one day. When the catch is stored in RSW (as opposed to being frozen) the harvesting capacity is greater. During the winter fishery, the F/V FLICKA uses a smaller crew (5 men in total). The fishing grounds for *Loligo* are anywhere from Nantucket, MA to Oregon Inlet, NC, and anywhere from 10-70 miles off the coast.

The ten key communities with the greatest squid, mackerel, and butterfish (SMB) values from 2004-2006 are: Point Judith, RI; North Kingstown, RI; Cape May, NJ; New Bedford, MA; Montauk, NY; Gloucester, MA; Hampton Bays, NY; Newport, RI; Fall River, MA; and, New London, CT. These communities are described in detail in the FSEIS prepared for Amendment 10 to the SMB FMP by the MAFMC (MAFMC 2009).

Social and Economic Characteristics of the *Illex* Squid Trawl Fishery

Please refer to
Table 2 in Section 3.2 for a description of the number of *Illex* squid moratorium permit holders by state. The following information is derived from Amendment 10 to the Atlantic Mackerel, Squid, and Butterfish FMP (MAFMC 2009).

The *Illex* squid moratorium permit went into effect in 1997, but is not reflected in the permit data until 1998. In any given year since then, the vast majority of *Illex* landings come from vessels in possession of the *Illex* moratorium permit (99 percent on average from the 2002-2006 dealer weighout data). At any one time since implementation, there have been no more than 77 vessels in possession of the *Illex* squid moratorium permit.

Although landings by value per individual moratorium-permitted vessel have fluctuated from 2002 to 2006, the vast majority of *Illex* landings (96 percent) during this timeframe have come from only 22 distinct vessels. Within this group, more than 73 percent of the combined 2002-2006 landings by value came from four vessels. For the 22 major vessels, one had less than 5 percent of its revenue from *Illex*, four had between 5 -10 percent, eleven had between 10-25 percent, and six had between 25-50 percent. The vessel with the most *Illex* squid revenue from 2002-2006 was at $11,347,863 and the vessel with the least was at $180,512.

Principal *Illex* landing ports (as indicated in the NMFS NE permits database) with more than one major vessel include Cape May, NJ; Point Judith, RI; Davisville, RI; and, Wanchese, NC. New Jersey, Rhode Island, North Carolina and Virginia are the primary states where *Illex* squid are landed commercially. With regard to specific ports, from 2004-2006, the majority of *Illex* squid revenues came from landings in North Kingston, RI and Cape May, NJ. *Illex* is consistently more important as a source of annual revenue in North Kingston, RI where revenues from *Illex* squid landings averaged 43 percent of the port's gross revenues.

From 2002-2006, the disposition of the U.S. commercial harvest of *Illex* squid was divided between 80 percent to the food/unknown category and the remaining 20 percent to the bait category. U.S. export data for *Illex* squid is lacking. The *Illex* squid fishery has historically

been dominated by landings in May through October. From 2004-2006, the price of *Illex* during the height of the fishery has ranged from about $530/mt to $780/mt.

Annual gross revenues from U.S. commercial *Illex* landings were relatively low (between $0.5 and$3 million) in the 1980s, increased to around $10 million in the 1990s and then dropped to about $1 to $3 million in 2000-2003. In 2004, revenues increased to a record high of over $16 million before falling to around $8 million in 2005 and 2006. Revenues have tracked landings fairly consistently over the entire time period.

According to the 2004-2006 dealer weighout data, bottom otter trawls are the primary gear used in the commercial harvest of *Illex* squid. In 2004, the record high year for *Illex* landings, 99.9 percent of the *Illex* revenue landings came from bottom otter trawls. Active *Illex* squid trawl vessels range in size from 114 to 246 gross tons, and are between 72 and 138 feet in length. Crew size for these vessels ranges from three to 14 crew members.

Social and Economic Characteristics of the *Loligo* Squid Trawl Fishery

Please refer to Table 1 in Section 3.2 for a description of the number of *Loligo* squid moratorium permit holders by state. The following information is derived from Amendment 10 to the Atlantic Mackerel, Squid, and Butterfish FMP (MAFMC 2009).

The *Loligo* squid moratorium permit was implemented in 1997, but is not reflected in the permit data until 1998. Since implementation there have been approximately 400 vessels in possession of the moratorium permit. According to dealer reports, from 1998 to 2006, vessels in possession of the *Loligo* squid moratorium permit accounted for between 96-89 percent of annual commercial *Loligo* landings.

The majority (87 percent) of *Loligo* landings by value from 2002-2006 were harvested by 138 vessels that each accounted for at least 0.1 percent of the total *Loligo* catch by value. Of these vessels, the vessel with the most *Loligo* revenue from 2002-2006 was at $4,227,568 and the vessel with the least was at $119,784. For the 138 major vessels, in terms of their dependence on *Loligo*, ten had less than five percent of revenue from *Loligo*, eleven had between 5-10 percent, forty were between 10–25 percent, sixty were between 25-50 percent, fourteen were between 50–75 percent, one was between 75–90 percent, and two had over 90 percent of revenue from *Loligo* squid.

Principal landing ports (as indicated in the NMFS permit data) with more than one major vessel include Point Judith, RI; New Bedford, MA; Cape May, NJ; Shinnecock, NY; Montauk, NY; Boston, MA; Newport, RI; Hampton Bays, NY; Point Pleasant, NJ; Narragansett, RI; Point Pleasant, NJ; Gloucester, MA; Davisville, RI; and Point Lookout, NY. Rhode Island, New York, New Jersey, and Massachusetts are the primary states where *Loligo* are landed commercially. With regard to specific ports, the majority of *Loligo* revenues from 2004-2006 came from landings in Point Judith, RI; Montauk, NY; North Kingstown, RI; Hampton Bays, NY; Cape May, NJ; Newport, RI; and New Bedford, MA.

The disposition of the vast majority of the U.S. commercial harvest of *Loligo* is in the food/unknown category (average = 99.9 percent from 2002-2006), while a small amount is reported to be sold as bait according to NMFS dealer reports. In 2003 and 2004, exports of *Loligo* were sold as prepared/preserved product (48 percent), live/fresh product (30 percent), and frozen/dried/salted/brine product (22 percent) according to the NMFS Office of Science and Technology.

In 2003, U.S. exports of *Loligo* totaled 8,993 mt valued at $13.6 million. The leading markets for U.S. exports of *Loligo* in 2003 were reported as China (3,077 mt), Japan (2,685 mt), Greece (766 mt), Italy (589 mt), and Spain (566 mt). In 2004, U.S. exports of *Loligo* totaled 14,292 mt valued at $20.1 million. The leading markets for U.S. exports of *Loligo* in 2004 were reported as China (4,621 mt), Japan (2,028 mt), Spain (1,714 mt), Venezuela (1,013 mt), Italy (1,001 mt), and Greece (777 mt).

Landings and revenue from the *Loligo* fishery are greater in the fall and winter to early spring than in the summer months. From 2004-2006, the price of *Loligo* has ranged from approximately $1,500/mt to $2,600/mt. The average monthly price of *Loligo* has tended to have a small increase in March, lower early summer prices, and high prices in late summer and early fall.

Annual gross revenues from U.S. commercial *Loligo* landings rose significantly in the 1980s from less than $2 million in 1982 to over $22 million in 1989. Since then, gross revenues have ranged from $14 million in 1990 to slightly less than $33 million in 1999. Annual revenues have tracked landings fairly consistently over the entire time period. The number of trips that landed over 100 lbs of *Loligo* declined fairly steadily from 1998 (~8,600) to 2005 (~3,600), though they rose in 2006 (to ~4,800).

According to the 2004-2006 dealer reports, bottom otter trawls are the primary gear used in the commercial harvest of *Loligo*. Vessels range in size from 15-246 gross tons, and are between 32-138 feet in length. Crew size for these vessels ranges from 1-14.

Social and Economic Characteristics of the Summer Flounder and Scup Fisheries

Information for this section was obtained from the Environmental Assessment prepared for the 2011 Summer Flounder, Scup, and Black Sea Bass specifications (MAFMC 2010a), and from the EIS prepared for Amendment 13 to the SSB FMP (MAFMC 2002). Please refer to these documents for a complete discussion of the social and economic characteristics of the summer flounder and scup fisheries.

Summer flounder supports an extensive commercial fishery along the Atlantic coast, principally from Massachusetts through North Carolina. Landings have fluctuated widely over the past six decades, increasing from less than 10 million lbs per year prior to World War II to an average of around 20 million lbs during the 1950's and early 1960's. Landings of summer flounder peaked in 1979 at nearly 40 million lbs. Reported landings were 32.3 million lbs in 1988, less than 18 million lbs in 1989, and further decreased in 1990 to about 9 million lbs, a decline of 71 percent from 1988 (MAFMC 2002). In 2010, the summer flounder Total

Allowable Landings (TAL) was set at 22.13 million lbs. The 2010 adjusted summer flounder commercial quota was set at 12.79 million lbs.

The commercial quota for summer flounder is annually distributed among the Atlantic states, as specified in the FMP. North Carolina has the highest commercial quota for summer flounder (27.4 percent), followed by Virginia (21.3 percent), New Jersey (16.7 percent), Rhode Island (15.7 percent), New York (7.6 percent), Massachusetts (6.8 percent), Connecticut (2.2 percent), and Maryland (2.0 percent). The remaining states of Delaware, New Hampshire, and Maine each receive less than one percent of the commercial quota.

The principal landing ports for summer flounder are Pt. Judith, RI; Wanchese, NC; Hampton, VA; Newport News, VA; Pt. Pleasant, NJ; Cape May, NJ; Beaufort, NC; Oriental, NC; Engelhard, NC; and Montauk, NC (MAFMC 2010c).

Most commercial summer flounder landings (93 percent) are made from bottom otter trawl vessels. In 1999, 74 percent of landings came from the Exclusive Economic Zone (EEZ), with the remainder coming from state waters. Approximately 37 percent of commercial landings during the 1990's were caught in January and February, while the lowest landings typically occurred from April through August. Monthly landings and price data for summer flounder indicates that a supply–price relationship is observable on a monthly basis. According to recent market reports published in National Fishermen magazine (Moore 2010), the sluggish economy held summer flounder prices down in 2010 and the normally higher winter price of around $2.00/lb was not much different from previous years. Early 2010 summer prices from New York's New Fulton Market held at around $2.00 to $2.25/lb.

The ex-vessel value of summer flounder landings in 2009 was approximately $21.83 million resulting from commercial landings of 11.06 million lb, with an average ex-vessel price estimated at $1.88/lb. The value of commercial landings of summer flounder from 2007-2009 averaged $21.92 million, with an average ex-vessel price of $2.18/lb. In general, summer flounder landings for smaller tonnage vessels tend to be greater in the summer months, while landings for larger tonnage vessels tend to be greater in the winter months. On average, higher prices tend to occur during the summer months. This price fluctuation is likely in response to supply.

Scup also supports an important commercial fishery, albeit smaller than the summer flounder fishery. Commercial scup landings declined from 21.73 million lb in 1981 to 8.18 million lb in 1989. Landings increased to 15.14 million lb in 1991 and then dropped to the lowest value in the historical time series, 3.32 million lb in 1999. Commercial scup landings were approximately 8.20 million lb in 2009. The mean for the commercial time series, 1981 to 2009, is 10.37 million lb. In 2010, the scup TAL was set at 14.11 million lbs. The 2010 adjusted scup commercial quota was set at 10.68 million lbs. The MAFMC recommended increasing the 2011 commercial scup quota to 15.13 million lbs, however that recommendation has not been finalized. The commercial scup quota is divided between three periods: Winter I (Jan.–Apr.) – 45.11 percent; Summer (May–Oct.) – 38.95 percent; and, Winter II (Nov.–Dec.) – 15.94 percent.

In general, three states, Rhode Island, New Jersey, and New York accounted for more than 80 percent of coastwide scup landings on average from 1990-1999. Coastwide, approximately 75 percent of total commercial scup landings are caught by otter trawl vessels. In 1999, 55 percent of commercial scup landings were caught in the EEZ, with the remainder coming from state waters. More than 80 percent of the commercial scup landings are caught November through May, with more than 50 percent caught from February through May. Landings by month show no clear regional pattern (MAFMC 2002).

Monthly landing and price data for scup indicates that a supply-price relationship is observable on a monthly basis. Months with highest average ex-vessel prices tend to coincide with months of lowest landings, normally between June and September. Commercial scup landings were approximately 8.20 million lb and valued at $6.30 million in 2009 ($0.76/lb). The value of commercial landings of scup from 2007-2009 averaged $7.54 million, with an average ex-vessel price of $0.87/lb. (MAFMC 2010a). Price differential information from 2000 indicated that the ex-vessel price per pound for large scup was 21 percent greater than for small scup and 67 percent greater than for pin scup (the smallest market size) (MAFMC 2002).

Almost all summer flounder and scup are sold in fresh form. The catch is generally iced at the dock and then shipped to market. The major central wholesale market for fresh fish in the mid-Atlantic region is the Fulton Fish Market in New York City, NY (MAFMC 2002). There were 244 federally-permitted dealers who bought summer flounder, scup, and/or black sea bass in 2009 from Maine through North Carolina.

In 2009, approximately 1,100 vessels were issued either a commercial summer flounder permit or a commercial scup permit or both (MAFMC 2010c). NMFS records indicate that 798 vessels landed summer flounder in 2000. In addition, the number of trips landing any summer flounder in 2000 was 25,956 (MAFMC 2002).

Costs and Revenues

The following information was obtained from Amendment 13 to the SSB FMP (MAFMC 2002). Although some of the information is dated, the amendment provides the most comprehensive information available on New England and mid-Atlantic trawl vessel costs and revenues. All dollar figures have been indexed to 2010 dollars using the Bureau of Labor Statistics (BLS) online inflation calculator (http://data.bls.gov/cgi-bin/cpicalc.pl).

Vessel costs are composed of ownership costs and operating costs. Ownership costs are incurred once the durable goods are purchased. These are added costs whether or not the assets (equipment/materials) are used in the production process - that is they remain constant regardless of the output level. Ownership costs are frequently referred to as "fixed costs." They include depreciation, debt, insurance, routine maintenance, and insurance, etc. Operating costs are incurred when the production process occurs. These costs are commonly known as "variable costs." They include fuel, oil, maintenance, wages, food, sale and unloading fees, etc. Vessel variable costs are proportionate to the hours traveling and fishing (operating maintenance, fuel, and ice) and the quantity of fish landed (wages, sales and unloading fees, ice). Costs vary in different locations and the cost components have changed over the years. Due to the variation in

vessel's landings (home port, tonnage class, directed fishery, etc.), exact cost information is difficult to obtain and generally applicable only to a hypothetical "average" vessel.

Wages are almost always in the form of a share or "lay" system. The captain, crew, and vessel owner split the net revenue based on a predetermined, set ratio. Ratios are in many instances set according to what is traditional in that port. The particular ratio of the lay system utilized varies between vessels. In some cases none of the trip expenses are paid by the crew, but incurred by the boat. When this system is employed, the gross revenue is divided equally between the crew and the boat. This system is termed "Clear 50." On the other hand, trip expenses such as fuel, ice, and in some cases food are subtracted from the gross revenue with the remainder divided 50-50 between the crew and the boat. This system is termed "Broken 50." When one or the other of the parties is responsible for additional costs, the share split normally reflects this.

Diesel fuel costs have significantly increased in recent years. However, fuel costs also can vary throughout the year and among ports. Total vessel fuel costs are directly proportional to the amount of time spent steaming and fishing as well as the size and drag of the fishing gear used. Given the uncertainties of world oil markets, it is likely that fuel prices will fluctuate unpredictably from year to year.

Variable maintenance costs are related to the hours the engines, fishing gear, etc. are used and the weather conditions. Much of the minor repair work is conducted by crew members and, on larger vessels, by an engineer. Since these crew members perform their labor as part of their normal responsibilities there is no added labor cost (Crutchfield 1986, MAFMC 2002). However, most major engine, electronics, and gear repairs are contracted to specialists.

The bulk of the summer flounder commercial landings are made by bottom otter trawl gear. Similarly, over 75 percent of the scup commercial landings are made by bottom otter trawl gear. Vessels which use otter trawls other than finfish otter trawls are expected to be similar in their characteristics to finfish otter trawl vessels.

The results of a survey of small Northeast fishing vessels (≤ 65 feet in length) whose primary gear was otter trawl and reported landings in New England in 1996 was presented by Lallemand, *et. al.* (1998) (MAFMC 2002). Even though the vessels in the survey had wide ranges in effort and in operating expenses, the vessel physical characteristics were very similar. The value most frequently reported for length (40 ft), gross ton (16 GRT), horsepower (300 hp), number of engines (1), crew size (2), and captain's age (38 years of age) are close to the respective reported means or averages. The age of the typical vessel in 1996 was 17-years-old. The typical vessel value reported was $209,092 (2010 dollars) (mean of $198,953 (2010 dollars)), however, a wide variation in vessel value was reported.

Trip expenses were divided into eight categories (fuel, oil, ice, food and water, lumpers fees, supplies, consignment fees, and other expenses). The average total operating cost per trip for small trawlers in 1996 was $267 (or $372 in 2010 dollars). Fuel was the most significant expense.

The small trawler survey reported a total mean of $9,954/year (2010 dollars) for repair and maintenance. This represents the cost of routine repair and maintenance. Repair and maintenance cost for fishing and other gears was the largest component with 28 percent of the total, followed by maintenance (21 percent), engine (14 percent), other repair (12 percent), electronics (11 percent), tow wires (11 percent), and generator (3 percent). Unusual expenses and unexpected repair costs ranging from $2,788-$27,879 (mean $13,716) (2010 dollars) were reported. These costs are not likely to be made annually and probably represent major investments which will be amortized. The remuneration system of smaller trawlers in the survey indicated that 56 percent of the respondents implemented a Clear Lay (Clear 50) system in 1996, 41 percent used a Broken System (Broken 50), and 3 percent used a daily rate system. As such, it is reasonable to conclude that on small trawlers, the gross revenues are shared equally between the crew and the vessel using a 50-50 ratio. In addition, the captain's bonus averaged between 6 percent and 9 percent, and it was deducted from either the gross or vessel revenues.

The small trawler survey indicated that large variations among vessels' overhead costs exist. Overhead costs were divided into the following categories: haul-out charges; fishing permit(s); other permit(s); mooring and dockage fees; insurance; association(s) fees; professional fees; office expenses; vehicle; taxes (property, fuel, etc.); and other charges. The largest mean values were associated with other charges ($12,964), insurance ($5,471), and haul-out charges ($4,048) (all 2010 dollars). These items accounted for the bulk of the total mean overhead cost of $20,421 (standard error of $2,030).

Gross revenue for small otter trawl vessels in the survey ranged from $83,637-$662,127, and the mean revenue was $243,751 (standard error $39,355) (2010 dollars). Most of the larger gross revenues (>$278,790) were reported by vessels that were greater than 50 feet and fished distances greater than 80 miles from the principal port of landings.

The results of a survey of large Northeast fishing vessels (≥ 65 feet in length) whose primary gear was otter trawl and reported landings in New England in 1997 was presented by Lallemand *et. al.* (1999). Even though the vessels in the survey had wide ranges in effort and in operating expenses, the vessel physical characteristics were very similar. The value most frequently reported for length (65 ft), gross ton (125 GRT), horsepower (675 hp), number of engines (1), crew size (4), and captain's age (55 years of age) are close to the respective reported means or averages. The age of the typical vessel in 1997 was 20 years old. The typical vessel value reported was $1,090,148 (2010 dollars), however, a wide variation in vessel value was reported. Large otter trawlers indicated that when using secondary harvesting gear (other than otter trawl gear) they most likely catch invertebrates (squids and shrimp) late in the winter and early spring, pelagics in the fall and early winter, and other fish (*i.e.*, summer flounder, monkfish, whiting) in the summer. In addition, flat fish and other than groundfish are still mainly caught using otter trawl bottom fishing gear.

Trip expenses were divided into eight categories (fuel, oil, ice, food and water, lumpers fees, supplies, consignment fees, and other expenses). The average total operating cost per trip for large trawlers in 1997 was $2,608 (or 3,544 in 2010 dollars). Fuel was the most significant expense.

The large trawler survey reported a total mean of $55,604/year for repair and maintenance (2010 dollars). This represents the cost of routine repair and maintenance. Repair and maintenance cost for fishing and other gears was the largest component with 27 percent of the total, followed by other repairs (22 percent), maintenance (20 percent), engine (13 percent), tow wires (8 percent), electronics (7 percent), and generator (4 percent). Unusual expenses and unexpected repair costs ranging from $2,453 to $68.134 (2010 dollars) were reported. These costs are not likely to be made annually and probably represent major investments which will be amortized.

The remuneration system of large trawlers in the survey indicated that 6 percent of the respondents implemented a Clear Lay (Clear 50) system in 1997, 94 percent used a Broken 50 System, and 0 percent used a daily rate system. As such, it is reasonable to conclude that on large trawlers, after trip expenses are subtracted from gross revenues, the remainder is shared equally between the crew and the vessel using a 50-50 ratio. In addition, the captain's bonus averaged between 4 percent and 9 percent, and it was deducted from either the gross or vessel revenues.

The large trawler survey indicated that the variations among vessels overhead costs are smaller than that from smaller trawlers. Overhead costs for large trawlers were divided into the following categories: haul-out charges; fishing permit(s); other permit(s); mooring and dockage fees; insurance; association(s) fees; professional fees; office expenses; vehicle; taxes (property, fuel, etc.); and other charges. The largest mean values were associated with insurance ($41,340), other charges ($11,174), and haul-out charges ($19,463). These items accounted for the bulk of the total mean overhead cost of $75,140 (standard error of $4,649). Gross revenue for large otter trawl vessels in the survey ranged from $89,212 to $2,101,461, and the mean revenue was $745,273 (standard error $101,509) (2010 dollars).

Section 4.0 Environmental Consequences of the Alternatives

The 2006 Consolidated HMS FMP included objectives to monitor and control all components of fishing mortality, both directed and incidental, so as to ensure the long-term sustainability of HMS stocks, and to provide the data necessary for assessing HMS fish stocks and managing HMS, including addressing inadequacies in current data collection and the ongoing collection of social, economic, and bycatch data in Atlantic HMS fisheries.

The 2006 Consolidated HMS FMP also discussed bycatch and incidental catch issues associated with various HMS commercial and recreational fisheries. The document noted that additional actions beyond those included in the Consolidated HMS FMP or its final rule might be necessary to further address these issues. In the 1999 FMP for Atlantic Tunas, Swordfish, and Sharks (NMFS 1999), NMFS first required that squid trawl vessels be issued three HMS LAPs in order to retain swordfish. However, for a variety of reasons, some squid trawl vessels did not apply for, or qualify for, the three HMS permits. Since then, the catch and discarding of dead swordfish captured incidentally in squid trawls has occurred by those vessels which did not obtain the necessary HMS permits. A similar situation could also arise when smoothhound sharks are fully incorporated into the HMS management unit. At that time new smoothhound shark management measures will be implemented. Without the establishment of a smoothhound shark incidental retention limit, trawl vessels would have to discard any smoothhound sharks captured incidentally while trawl fishing. The current management measures may be

contributing to economic waste, and important social, economic, and biological data might not be collected. The following sections evaluate alternatives which could help to address these issues.

Section 4.1 Incidental catch of North Atlantic swordfish in squid trawl fisheries

As described in Section 2, the following four alternatives address the retention of swordfish incidentally-caught in squid trawl gear.

Alternative A1	**No Action**
Alternative A2	**Establish a new permit for *Illex* squid moratorium permit holders to retain swordfish (*Preferred alternative*)**
Alternative A3	**Exempt *Illex* squid moratorium permit holders from current HMS permitting requirements to retain swordfish**
Alternative A4	**Establish either a new permit *or* an exemption, as applicable, for *Loligo* squid moratorium permit holders to retain swordfish**

Section 4.1.1 Ecological Impacts

The No Action alternative, A1, would maintain existing incidental retention limits and permit requirements for swordfish in squid trawl fisheries. Squid trawl fishermen are currently allowed to retain 15 incidentally-caught swordfish only if they have the "HMS permit triple-pack." The incidental retention limit was implemented in 2000 to reduce dead discards of swordfish by squid trawl vessels. An analysis of the VTR data from 2000-2009 including all squid trawl trips (where squid is ≥80 percent of the total catch by weight) shows that 26 vessels in the squid trawl fishery caught swordfish as bycatch. Out of the 26 vessels, ten had a directed or incidental swordfish permit, with only five holding the three required HMS permits to retain incidentally caught swordfish (Table 5). In addition, the VTR data indicates that the majority of the squid trawl trips (18,784) incidentally caught a variety of non-target species, with swordfish being the second most retained and discarded HMS preceded by smoothhound (Figure 3 and Figure 4). Out of 9,169 squid trawl trips that caught HMS, 375 trips retained and/or discarded swordfish (4 percent). Of these trips, 104,145 lbs (10 percent) of swordfish were retained out of 1,019,058 lbs of total HMS retained (Figure 3). Out of 179,985 lbs of total HMS discarded by squid trawl vessels, 45,404 lbs (25 percent) of swordfish were discarded (Figure 4). Overall, 30.4 percent of swordfish caught by squid trawl vessels were discarded (45,504 lbs discarded/149,658 lbs of swordfish caught (discards + kept) * 100). Many of the swordfish caught incidentally by squid trawl vessels are brought onboard dead or in poor condition. This would continue to occur under Alternative A1 and all of the other alternatives because squid trawl vessels will continue to incidentally capture swordfish. Thus, Alternative A1, is anticipated to have short-term and long-term neutral, direct ecological impacts as this alternative is not likely to change trawl effort or impact the continued catch of swordfish in squid trawl

fisheries. Thus, ecologically, the impacts associated with this alternative are expected to be neutral, as the same amount of swordfish would likely be killed.

NEFSC Observer Data from 1997-2006 indicates that the directed *Illex* fishery appears to have low levels of incidental catches of swordfish, with 12,057 lbs of swordfish caught, of which 7,683 lbs were kept and 4,374 lbs discarded over a ten year period with 976 tows sampled (Table 9). The number of swordfish caught and/or discarded may vary greatly according to the type of squid vessel, length of trip, and time of year. NMFS has learned that the average number of swordfish discards per trip will vary greatly depending upon the type of squid vessel being used, freezer vessel or refrigerated seawater (RSW) vessel (MAFMC 2008, Goodwin pers. com.). The freezer squid trawlers normally stay out for two weeks and fish for 12 of those days, conducting two or three tows per day, which would result in an average of 30 tows per trip ((24 + 36)/2 = 30), ranging between 24 to 36 tows per trip. On the other hand, RSW boats are limited by the perishability of the product and can only stay out for four to five days conducting two to three tows per day, averaging 11.5 tows per trip ((8 + 15)/2 =11.5) and ranging between 8 to 15 tows per trip. Based upon NEFSC observer data (Table 9), the average number of swordfish discards per *Illex* tow amounts to 0.11 (105 total discards/976 total tows = 0.11 discards/tow). Using the average number of discards per tow in the *Illex* fishery and the average tows per trip among freezer and RSW squid vessels results in an average of 3.3 and 1.2 swordfish discards per trip, respectively. In addition, most squid trawl vessels start encountering swordfish around July 4th with numbers peaking in mid-August (Goodwin pers. comm.). Thus, a large freezer vessel on a two week trip in mid-August might encounter more swordfish than the allowable retention limit (*i.e.*, 15 swordfish per trip), whereas a RSW vessel on a 4 day trip in mid-June might encounter less than the allowable retention limit. However, it is not known if, or to what extent, underreporting of swordfish discards may be occurring.

Table 9 **Swordfish Discarded and Kept in Squid, Mackerel, & Butterfish Fisheries Based on NEFSC Observer Program Database from 1997 – 2006; Source Amendment 10 to the Squid, Mackerel, Butterfish FMP (MAFMC 2009).**

Fishery		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total # Disc.	Total # kept	Total weight Disc. (lbs)	Total weight kept (lbs)
Illex	# of tows sampled	127	36	37	124	56	0	159	175	61	201				
	swordfish	6	3	28	20	5		10	16	7	10	105	90	4,374	7,683
Loligo	# of tows sampled	255	253	401	259	335	216	231	1,090	933	724				
	swordfish			19	1	1	2		6	7		36	30	1,282	1,186

Alternative A2, the preferred alternative, will implement a new permit for *Illex* squid moratorium permit holders to retain up to 15 swordfish per trip, the current squid trawl limit. This alternative will likely have short-term and long-term neutral, direct ecological impacts as NMFS does not expect that squid trawl vessels will increase fishing effort, or deliberately target swordfish, because of the new Incidental HMS Squid Trawl permit. These vessels are primarily designed to fish for, and land, small pelagic species such as squid, mackerel and butterfish, and swordfish catches are incidental to catches of these target species. Many of the swordfish incidentally caught by squid trawl vessels are brought onboard dead (or later die). This mortality will continue to occur under Alternative A2 and all of the other alternatives because squid trawl vessels will continue to incidentally capture swordfish at the same approximate rate under all the

alternatives examined in this document. Thus, ecologically, the impacts associated with this alternative are expected to be neutral as the same amount of swordfish will likely be killed. Additionally, to the extent that improved reporting and data collection could occur under Alternative A2, due to the implementation of a new permit, this alternative could provide some long-term ecological benefits associated with better quota monitoring and stock assessments.

Alternative A3 would exempt *Illex* squid moratorium permit holders from current HMS permitting requirements to retain swordfish. This alternative would have the same ecological impacts as Alternative A2, except that there would be no permit requirement. Similar to Alternative A2, there would be short-term and long-term neutral, direct ecological impacts as current squid trawl effort is not expected to change. Many of the swordfish incidentally caught by squid trawl vessels are brought onboard dead (or later die). This would continue to occur under A3, and all of the other alternatives, because squid trawl vessels will continue to incidentally capture swordfish at the same approximate rate. Thus, ecologically, the impacts associated with this alternative are expected to be neutral, because the same amount of swordfish would likely be killed.

Alternative A4 would establish either a new Incidental HMS Squid Trawl (or similarly named) permit available to all vessel owners currently issued an *Loligo* squid moratorium permit, or establish an exemption from the need for *Loligo* squid trawl vessels to be issued the "HMS permit triple-pack" to retain swordfish. Basically, this alternative would implement the same requirements on *Loligo* squid trawl fishermen that NMFS prefers for *Illex* squid trawl fishermen. Similar to Alternatives A2 and A3, this alternative would have short-term and long-term neutral, direct ecological impacts as trawl effort is not expected to change. Based on the NEFSC Observer Data from 1997 – 2006 (Table 9), the average number of swordfish discards per tow in the *Loligo* fishery amounts to 0.01 (36 total discards / 4,697 total tows = 0.01). Using the same analytical approach as used for Alternative A2, the average number of tows per trip among freezer and RSW squid vessels would result in an average of 0.30 (0.01*30 = 0.30) and 0.13 (0.01*12.5 = 0.13) swordfish discards per trip, respectively, which is significantly less than the rate of swordfish discards that occur in the *Illex* fishery. This lower rate is because the *Loligo* fishery operates inshore during summer months whereas the *Illex* fishery operates in the offshore Mid-Atlantic canyons during the summer where swordfish are more prevalent. The incidental catch of swordfish in squid trawls is much higher in the *Illex* squid trawl fishery than in the *Loligo* squid trawl fishery, due to the fact that the two fisheries are temporally and spatially distinct. Many of the swordfish incidentally caught by squid trawl vessels are brought onboard dead (or later die). This would continue to occur under Alternative A4 and all of the other alternatives because *Loligo* squid trawl vessels are expected to continue to incidentally capture swordfish at the same approximate rate. Thus, ecologically, the impacts associated with this alternative are projected to be neutral because the same amount of swordfish would likely be killed. However because individual *Loligo* squid trawl vessels have very low swordfish catch and discard rates, this alternative is not preferred at this time.

To the extent that improved reporting and data collection could occur under Alternatives A2 – A4, selection of any of these alternatives may provide some long-term ecological benefits associated with providing information needed for better quota monitoring and improved stock assessments.

In conclusion, overall squid trawl fishing effort is not expected to change under any of the alternatives solely because vessels would be allowed to retain, rather than discard, swordfish (estimated at between 1 – 3 fish per trip for *Illex* vessels). Therefore, Alternatives A1 through A4 are not expected to have any direct or indirect short-term or long-term adverse ecological impacts relative to the status quo. In addition, management measures to reduce regulatory discards are not expected to alter fish behavior. Thus, these alternatives are not expected to have any ecological impacts on the environment and protected resources beyond those that have been previously analyzed. Similarly, Alternatives A1 through A4 are expected to have neutral, cumulative short-term and long-term environmental impacts. For 2011, the U.S. allowable biological catch for *Illex* squid was set at 24,000 mt, with a domestic annual harvest limit of 23,328 mt. Although *Illex* landings fluctuate on an annual basis, they are restricted by these quota specifications. Because these alternatives are not expected to change squid trawl effort, there are no anticipated adverse impacts to the environment.

Section 4.1.2 Social and Economic Impacts

The following summary of information, some of which has been presented in Chapters 3 and 4, was derived from a variety of sources, and is used to estimate the social and economic impacts of Alternatives A1 – A4:

1) In 2009, 76 vessels were issued *Illex* squid moratorium permits. Only 18 of these vessels reported squid landings (*i.e.*, were "active").

2) In 2009, 365 vessels were issued *Loligo* squid moratorium permits. Only 180 of these vessels reported squid landings (*i.e.*, were "active").

3) 75 vessels out of the 76 vessels issued *Illex* squid moratorium permits also possess a *Loligo* squid moratorium permit (NMFS Permits Database).

4) 26 squid trawl vessels reported catching swordfish from 2000 to 2009 (VTR database, NEFSC). Of these, only five vessels had been issued the requisite "HMS permit triple-pack" needed to retain swordfish.

5) The average number of swordfish discards per tow in the *Illex* squid fishery is 0.11 (NEFSC Observer Program data, 1997 – 2006). Assuming that large freezer vessels average 30 tows per trip, and that smaller RSW vessels average 11.5 tows per trip yields an average of 3.3 swordfish discards per trip for large freezer vessels fishing for *Illex*, and 1.2 swordfish discards per trip for smaller RSW vessels fishing for *Illex* squid.

6) The average number of swordfish discards per tow in the *Loligo* squid fishery is 0.01 (NEFSC Observer Program data, 1997 – 2006). Assuming that large freezer vessels average 30 tows per trip, and smaller RSW vessels average 11.5 tows per trip yields an average of 0.30 swordfish discards per trip for large

freezer vessels fishing for *Loligo*, and 0.13 swordfish discards per trip for smaller RSW vessels fishing for *Loligo* squid.

7) A total of 149,658 lbs ww of swordfish were caught in squid trawls during the ten year period from 2000 - 2009 (VTR database, NEFSC). 104,254 lbs ww of swordfish were kept.

8) A total of 45,404 lbs ww of swordfish were discarded in squid trawl fisheries (*Illex* and *Loligo*) over the ten year period from 2000 – 2009 (VTR database, NEFSC). Thus, an average of 4,540 lbs dw of swordfish (or approximately 41 fish) are discarded per year in squid trawl fisheries using self-reported VTR data.

9) Overall, 30.4 percent of the swordfish caught by squid trawl vessels (*Illex* and *Loligo*) were discarded from 2000 – 2009 (VTR database, NEFSC).

10) Swordfish catch by squid trawl vessels (*Illex* and *Loligo*) annually peaks during July and August.

11) The 2009 average weight of non Gulf of Mexico swordfish was 90 lbs dw or 112 lbs ww (U.S. Domestic Longline Database, SEFSC).

12) The 2009 average ex-vessel price for Mid-Atlantic trawl caught swordfish was $3.29/lb dw (Commercial Fisheries Database, NEFSC)).

13) Swordfish discards in squid trawl fisheries could occur either because a vessel has not been issued the proper HMS permits, or because the swordfish are less than the legal minimum size.

The no action alternative, A1, would maintain existing HMS permit requirements and incidental swordfish retention limits in squid trawl fisheries. Only squid trawl fishermen that have been issued the "HMS triple-pack" (*i.e.*, swordfish LAP (other than swordfish handgear permit), shark LAP, and Atlantic tunas longline LAP) would be allowed to retain up to 15 incidentally-caught swordfish.

Self-reported data from Vessel Trip Reports (VTR) from 2000-2009 indicate that only five squid trawl vessels have been issued the necessary "HMS triple-pack" of LAPs required for the retention and sale of swordfish. Therefore, approximately 71 *Illex* squid trawl vessels and 294 *Loligo*-only squid trawl vessels do not hold the permits necessary to retain incidentally caught swordfish (because all 71 *Illex* vessels also possess a *Loligo* moratorium permit). However, only 18 *Illex* vessels and 162 *Loligo*-only permitted vessels were active in 2009 (assuming that all 18 *Illex* vessels also possess a *Loligo* moratorium permit). If the five squid trawl vessels that have been issued the requisite HMS permit to retain swordfish also hold both *Illex* and *Loligo* squid moratorium permits and are "active," then approximately 13 "active" *Illex/Loligo* permitted vessels are currently not allowed to legally retain incidentally-caught swordfish. The remainder of this section focuses primarily upon the 13 *Illex/Loligo* vessels that were considered "active" in 2009, but have not been issued the requisite HMS permits to retain

swordfish. To a lesser extent, a brief economic analysis is provided for the 162 active *Loligo*-only vessels that do not have the requisite "HMS permit triple pack."

Because swordfish catch in the *Illex* squid trawl fishery occurs mainly during July and August, each of the 13 active vessels could take either four 14-day trips during this period (freezer vessels) or about twelve five-day trips (RSW vessels) during the period. Using the calculations from Section 4.1.1 (which indicated that about 3.3 swordfish discards occur on a 14 day trip), then a large *Illex* squid freezer vessel would discard about 13 swordfish per year. If each of the swordfish weighed an average 90 lbs dw and the ex-vessel value was $3.29 per lb dw, then each swordfish discard is estimated to be valued at approximately $296.10. Multiplying the value of each swordfish by 13 discards/year yields approximately $3,849.30 in unrealized income annually for each large *Illex* squid trawl vessel. Alternatively, on a trip basis, large *Illex* squid freezer vessels forego approximately $977.13 in unrealized income per trip (3.3 discards/trip * $296.10/fish). These values would change depending upon the number of swordfish discards that occur.

Under Alternative A1, smaller RSW *Illex* vessels could take approximately 12 trips during July and August and are estimated to discard about 1.2 swordfish per trip. This means each vessel would discard about 14 swordfish per year, valued at approximately $4,145.40 (14 * $296.10/swordfish) in unrealized annual income. Alternatively, on a trip basis, small *Illex* squid trawl vessels forego approximately $355.32 in unrealized income per trip (1.2 discards/trip * $296.10/fish). These values would change depending upon the number of swordfish discards that occur.

In aggregate, the total amount of unrealized annual income by all 13 active *Illex/Loligo* squid trawl vessels ranges from $50,041 (13 vessels * 13 discards/year * $296.10/fish) to $54,007 (13 vessels * 14 discards/year * $296.10/fish), depending upon the number of small and large active squid trawl vessels. Thus, utilizing this methodology (Observer Program discard data, number of active vessels, length of trip, number of trips per vessel) results in an estimation of between 169–182 swordfish discards annually by all active *Illex/Loligo* squid trawl vessels without the proper HMS permits (*i.e.*, the "HMS permit triple-pack').

For *Loligo*-only squid trawl vessels, July and August would also be the primary months for swordfish incidental catches. Assuming that large *Loligo* freezer vessels average about 0.30 swordfish discards per trip, and may take about 4 trips during July and August, indicates that each large vessel discards approximately 1.2 swordfish per year worth a value of $355.32. Assuming that smaller vessels average 0.13 swordfish discards per trip, and may take about 12 trips during July and August, indicates that each small vessel discards approximately 1.6 swordfish per year worth a value of $473.76. In aggregate, the total amount of unrealized annual income by all 162 active *Loligo* squid trawl vessels ranges from $57,562 (162 vessels * 1.2 discards/year * $296.10/fish) to $76,749 (162 vessels * 1.6 discards/year * $296.10/fish) annually, depending upon the number of small and large active *Loligo* squid trawl vessels. Utilizing this methodology equates to between 194–259 swordfish discards annually by all active *Loligo*-only squid trawl vessels currently without the proper HMS permits.

The total annual discard estimates for Loligo-only permitted vessels are somewhat larger than those for *Illex/Loligo* permitted vessels because there are many more active *Loligo*-only permitted vessels. However, swordfish discard rates for *Loligo* vessels are significantly lower than for *Illex* vessels (0.01 swordfish/tow vs. 0.11 swordfish/tow). This is because the *Loligo* fishery operates inshore during summer months whereas the *Illex* fishery operates in the offshore Mid-Atlantic canyons during the summer where swordfish are more prevalent. Temporally and spatially, the two fisheries are different. For this reason, it is believed that that the incidental catch of swordfish in squid trawls is much higher in the *Illex* squid trawl fishery than in the *Loligo* squid trawl fishery.

Interestingly, self-reported VTR data from 2000-2009 showed that a total of 45,404 lbs ww of swordfish were discarded in squid trawl fisheries (*Illex* and *Loligo*) during the 10-year period. Thus, an average of 4,540 lbs dw of swordfish (or approximately 41 fish) were reported discarded annually by squid trawl fisheries in the VTR database. Although the swordfish discard estimates differ depending upon the methodology used to calculate them, they both indicate relatively low levels of swordfish discards in squid trawl fisheries (less than 450 fish annually). Because many of the swordfish incidentally caught by squid trawl vessels are brought onboard dead, or die soon afterwards, these dead discards constitute unrealized income and economic waste. Therefore, the no action alternative has minor adverse short term, long term, and cumulative social and economic impacts.

Alternative A2, the preferred alternative, will implement a new permit for *Illex* squid moratorium permit holders that would authorize retention of up to 15 swordfish per trip, which is the current squid trawl limit. As discussed in the analysis for Alternative A1 above, this is estimated to provide for approximately 13 swordfish per year valued at $3,849.30 for large *Illex* squid trawl vessels using discard rates from 1997-2006. For smaller *Illex* squid trawl vessels, this alternative is estimated to provide for approximately 14 swordfish per year valued at approximately $4,145.40/vessel. In aggregate, Alternative A2 could produce between $50,041-$54,007 in additional revenues amongst all 13 active *Illex/Loligo* squid trawl vessels. These estimates were calculated using the average number of swordfish discards per tow from NEFSC observer data, and then extrapolating to determine the average number of swordfish discards per year for active vessels. It is possible, but highly improbable (based on the analysis of current practices), that every permitted *Illex* squid trawl vessel would retain 15 swordfish per trip on every trip of the year under this alternative. In that situation, each individual vessel could realize an increase of up to $4,441.50 per trip (15 fish * $296.10). If all 71 *Illex* squid trawl vessels were to retain 15 swordfish on 10 trips during the course of a year, it would equate to 10,650 fish valued at over 3.2 million dollars. However, NMFS expects that overall *Illex* squid trawl fishing effort will not change from recent levels, and that the incidental catch of swordfish will remain unchanged. Because at least 75 percent of the total catch must be squid, vessels would need to land at least 5,000 lb ww of squid to retain 15 average sized (112 lb ww) swordfish. Since Alternative A2 will allow *Illex* squid trawl vessels to retain swordfish caught incidental to normal squid trawl fishing activities, this alternative will convert dead swordfish discards into landings and provide minor economic benefits. Alternative A2 is expected to produce minor beneficial direct short term, long term, and cumulative economic impacts, while preventing a directed swordfish trawl fishery from occurring.

With regard to social impacts, Alternative A2 will allow any *Illex* squid trawl vessel to obtain a new Incidental HMS Squid Trawl permit in order to retain swordfish. This new permit may have a small administrative fee (~ $20.00) in the future. Although a new permit requirement could be moderately burdensome to the fishing industry, it will help NMFS to identify the universe of vessels participating in the *Illex* squid trawl fishery that may be catching swordfish incidentally. It is difficult to separate squid trawl vessels from other vessels in some databases because the currently required HMS permits are identical to those issued to longline vessels and other vessels. Establishing a new permit will, at a minimum, allow NMFS to better quantify the universe of entities that may capture swordfish incidentally while participating in the *Illex* squid trawl fishery. It could also improve outreach and communications with this small, but important, HMS constituency. Therefore, because Alternative A2 could provide some additional information for fishery management purposes, it is expected to produce minor beneficial direct short term, long term, and cumulative social impacts.

Alternative A3 would exempt *Illex* squid moratorium permit holders from current HMS permit requirements (*i.e.*, the HMS "permit triple-pack") and allow them to retain up to 15 swordfish per trip when fishing for squid. This alternative would have the same direct economic impacts as Alternative A2 (*e.g.*, a moderate increase in annual revenues from between $3,849.30-$4,145.40 annually for active *Illex* vessels). The only difference is that there would be no new permit requirement or potential fee. This alternative would convert dead swordfish discards into landings and provide minor economic benefits. Similar to Alternative A2, there would be minor beneficial direct short-term, long-term, and cumulative economic impacts associated with allowing *Illex* squid trawl vessels to retain swordfish caught incidental to normal squid trawl fishing activities.

With regard to social impacts, Alternative A3 would waive requirements for *Illex* squid trawl vessel owners to obtain an HMS permit in order to retain swordfish. Rather, they would be exempt from these requirements. While this alternative would relieve a burden on the fishing industry, it would not help NMFS identify the universe of vessels participating in the *Illex* squid trawl fishery that may be catching swordfish incidentally. As discussed above, it is currently difficult to separate squid trawl vessels from other vessels in some databases because the required HMS permits are identical to those issued to longline vessels and other vessels. A removal of HMS permit requirements for *Illex* squid trawl vessels would exacerbate this situation. Furthermore, it would impede NMFS' efforts to improve outreach and communications with this small, but important, HMS constituency. Therefore, because Alternative A3 would not provide additional information for fishery management purposes, it is expected to produce minor adverse direct short term, long term, and cumulative social impacts. Without a permit, NMFS could be deprived of important information regarding trawl vessel swordfish landings and fishery participation.

Alternative A4 would establish either a new Incidental HMS Squid Trawl permit available to all vessel owners currently issued a *Loligo* squid moratorium permit, or establish an exemption from the need for *Loligo* squid trawl vessels to be issued the "HMS triple-pack" to retain swordfish. This alternative would implement the same requirements on *Loligo* squid trawl vessels that NMFS prefers for *Illex* squid trawl vessels. As described in the economic analysis for Alternative A1 (no action), large *Loligo* freezer vessels average about 0.30 swordfish

discards per trip, and may take about 4 trips during July and August. This indicates that approximately 1.2 swordfish per year are currently discarded worth a value of $355.32. Assuming that smaller *Loligo* vessels average 0.13 swordfish discards per trip, and may take about 12 trips during July and August, then approximately 1.6 swordfish are discarded annually worth a value of $473.76. Alternative A4 would allow these discards to be retained and produce minor economic benefits. In aggregate, the total amount of additional annual income that could be realized under this alternative by all 162 active *Loligo* squid trawl vessels ranges from $57,562 (162 vessels * 1.2 discards/year * $296.10/fish) to $76,749 (162 vessels * 1.6 discards/year * $296.10/fish) annually, depending upon the number of small and large active *Loligo* squid trawl vessels. Utilizing this methodology equates to between 194–259 swordfish that could be retained annually under this alternative by all active *Loligo*-only squid trawl vessels currently without the proper HMS permits. This alternative would convert dead swordfish discards into landings and provide minor economic benefits. Similar to Alternatives A2 and A3, there would be minor beneficial direct short-term, long-term, and cumulative economic impacts associated with allowing *Loligo* squid trawl vessels to retain swordfish caught incidental to normal squid trawl fishing activities.

With regard to social impacts, Alternative A4 would allow any *Loligo* squid trawl moratorium vessel to obtain a new Incidental HMS Squid Trawl permit to retain swordfish. Although a new permit requirement could be moderately burdensome to the fishing industry, it would better enable NMFS to identify the universe of vessels participating in the *Loligo* squid trawl fishery that may catch swordfish incidentally, albeit at very low rates. Therefore, because Alternative A4 could provide some additional information for fishery management purposes, it is expected to produce minor beneficial direct short term, long term, and cumulative social impacts.

In conclusion, the no action alternative (A1) would have minor adverse short term, long term, and cumulative social and economic impacts because of the continued occurrence of regulatory dead discards of swordfish by squid trawl vessels under this alternative. Although the estimated number of discards is relatively low (less than 450 fish annually), it represents unrealized income and economic waste because the swordfish must be thrown overboard and are usually dead. Alternatives A2, A3, and, A4 would all provide minor beneficial direct short term, long term, and cumulative social and economic impacts because dead swordfish discards would be converted into landings and provide income for fishermen. Alternative A2, and possibly A3 (if NMFS were to require a permit for *Loligo* vessels), could provide additional information for fishery management purposes. Alternative A2 is selected as the preferred alternative because it will provide economic benefits for the *Illex* squid trawl fishery (which has the highest interaction rate with swordfish) and provide additional information for fishery management purposes, while having little impact on overall squid trawl fishing effort and no adverse ecological impacts.

Section 4.2 Incidental catch of smoothhound sharks in trawl fisheries

As described in Section 2, NMFS is considering three alternatives address the retention of smoothhound sharks incidentally caught in trawl gear.

Alternative B1 **No Action**

Alternative B2	**Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 25 percent of the total catch, by weight (*Preferred alternative*)**
Alternative B3	**Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 50 percent of the total catch, by weight**

Section 4.2.1 Ecological Impacts

Alternative B1 would not implement management measures to allow for the retention of smoothhound sharks caught incidentally in trawl gear when smoothhound sharks are fully incorporated into the HMS management unit,. Trawl gear is not an authorized gear in the smoothhound shark fishery. In the absence of additional regulations, it would be illegal to retain smoothhound sharks caught with trawl gear by federal smoothhound shark permit holders when smoothhound sharks are fully incorporated into the HMS management unit,

This alternative could have direct short-term and long-term minor beneficial environmental impacts. After federal smoothhound shark management measures are fully implemented, Alternative B1 would require trawl fishermen to discard any incidentally caught smoothhound sharks. Although difficult to quantify, it is possible that a portion of these discards would be live discards and, therefore, fishing mortality on the Atlantic smoothhound shark stock could be reduced. However, there is no indication that the stock is unhealthy or cannot support current fishing effort levels so any benefits are expected to be minor.

Alternatives B2 and B3 would be expected to have positive ecological impacts when compared to the status quo, since it is currently legal for trawl fishermen to retain an unlimited amount of smoothhound sharks. However, ecological impacts resulting from the either Alternative B2 or B3 must also be assessed compared to the no action alternative, B1. Under the no action alternative, trawl fishermen would not be authorized to retain smoothhound sharks when smoothhound sharks are fully incorporated into the HMS management unit. Therefore, both Alternatives B2 and B3 would result in an increase in the retention of the species and the potential for higher fishing mortality in comparison to the no action alternative. For this reason, both Alternatives B2 and B3 could have minor, direct short-term and long-term negative ecological impacts because they would allow for some retention of smoothhound sharks. The potential for higher fishing mortality under Alternative B2 and B3, as compared to the no action alternative (no retention of smoothhound sharks in trawl gear) , could result in minor negative impacts to the stock. However, in comparison to the status quo (currently unlimited retention of smooth hound sharks in trawl gear), Alternatives B2 and B3 could have minor positive impacts to the stock because they limit retention to no more than 25 or 50 percent of the total retained catch on board, respectively. Regardless, it is important to note that the smoothhound shark complex does not show signs of being unhealthy, and catch data has remained consistent over the past 10 years.

Alternatives B2 and B3 are expected to have neutral indirect short-term and long-term ecological impacts. Smoothhound sharks are rarely targeted by trawl fishermen, therefore, trawl

effort is unlikely to change under either of these alternatives. Since trawl effort would not change, there would be no change to indirect impacts on other ecosystem components such as EFH or other bycatch or incidentally-caught species.

None of the three alternatives are expected to have direct or indirect short-term or long-term impacts on protected resources. Smoothhound sharks are rarely, if ever, targeted by fishermen with trawl gear, therefore, management measures to reduce regulatory discards of the species are not expected to alter fishing behavior. Thus, because none of the alternatives will alter behavior from the status quo, interactions with protected resources are unlikely to change under any of the three alternatives.

Similarly, all three alternatives are expected to have neutral cumulative short-term and long-term ecological impacts. Because these alternatives would not change trawl effort, any impacts from the final rule would not have any cumulative effect when considered in association with other rulemakings or fishery issues.

NMFS did not include an absolute weight retention limit in the proposed alternatives for smoothhound sharks. However, in response to comments received on the proposed rule, the Agency performed additional analyses during the final rulemaking stage to consider a single total allowable weight rather a percent-based retention limit. The analysis was based upon the preferred alternative (i.e., a 25 percent smoothhound shark retention limit relative to total catch). The next step was to determine an absolute weight equivalent to the 25-percent retention limit. To calculate an absolute weight equivalent, NMFS analyzed VTR data of trawl trips that caught smoothhound sharks between 2000 and 2009. The vast majority of trawl trips had a very low total weight of smoothhound sharks which is indicative of an incidental fishery. However, there was very little correlation between percent catch and weight. This is likely due to the wide range of vessel sizes that retain smoothhound sharks caught in trawl gear. Once the smoothhound trawl trips were plotted, NMFS investigated several options to find an equivalent weight, including the use of "best fit" trend lines and finding a retention weight that incorporated the same proportion of trips as the preferred alternative (89 percent of trips). Due to the wide range of weights, however, NMFS was unable to determine a useable and robust retention limit equivalent to 25 percent catch. Furthermore, the two methods found equivalent retention limits that ranged from 145 lbs-900 lbs; both of which are substantially lower than what the commenters had suggested, and too low and variable to maintain the historical nature of the trawl fishery. Through this analysis, NMFS determined that an absolute weight retention limit would not prevent directed effort by smaller trawl boats with low catch levels and could be overly restrictive for larger vessels. Alternative B2 which provides a "sliding scale" in the form of a percentage and allows trawl vessels of all sizes to retain incidentally-caught smoothhound sharks and prevents them from directing on smoothhound sharks. This approach is consistent with other HMS incidental trawl retention limits, including swordfish.

In conclusion, none of the alternatives are expected to result in any change in fishing effort because smoothhound sharks are rarely, if ever, targeted with trawl gear. Smoothhound sharks are usually caught incidentally while trawl fishing for other species such as summer flounder, scup, croaker, silver hake, and *Loligo* squid. Therefore, any ecological impacts, either positive or negative, are expected to be either minor or non-existent. Specifically regarding

impacts on smoothhound sharks, Alternative B1 (no action) could result in some minor ecological benefits to smoothhound sharks if some of the resultant discards survive the trawl capture experience. Alternatives B2 and B3 would result in an increase in smoothhound shark retention and a minor increase in fishing mortality as compared to the no action alternative. Therefore, Alternatives B2 and B3 could have minor, direct short-term and long-term negative ecological impacts on smoothhound sharks. However, the smoothhound shark stock complex does not currently show signs of being overfished, even in the absence of any management measures, because catch rates have remained consistent over the past 10 years. Therefore, a minor increase in fishing mortality as compared to the no action alternative should not have any significant negative impacts on the smoothhound stock.

Section 4.2.2 Social and Economic Impacts

Alternative B1 would have moderate direct short-term and long-term negative social and economic impacts. Although fishermen do not target smoothhound sharks with trawl gear, and incidental smoothhound shark catch is usually a small percentage of total catch, trawl fishermen often retain and sell the species. Based on VTR data from 2000-2009, an average of 145,088 lbs dressed weight dw of smoothhound sharks were caught in trawl gear, retained, and likely sold per year. Using an average ex-vessel price of $0.29 for smoothhound shark meat and $2.02 for smoothhound shark fins (NMFS 2010), and assuming a fin-to-carcass ratio of 12 percent (per the 2010 Shark Conservation Act, Public Law 111-348), revenue from smoothhound sharks trawl revenue averages $68,968 per year (129,543 lbs * $0.29 + 15,545 * $2.02). Under Alternative B1, trawl fishermen could collectively lose $68,968 per year across up to 266 vessels when smoothhound sharks are fully incorporated into the HMS management unit. Individually, each vessel could realize approximately $259 annually in lost revenue under the no action alternative.

When compared to the No Action alternative, Alternative B2 will have moderate direct short-term and long-term positive social and economic impacts. Currently, some trawl fishermen supplement fishing revenue with smoothhound shark product. Under the No Action alternative, they would no longer be able to do so when smoothhound sharks are fully incorporated into the HMS management unit. Under Alternative B2, however, they will continue to be allowed to retain and sell incidentally-caught smoothhound sharks. Calculating the exact level of revenue that would continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternative B2 will continue to allow approximately 89 percent of the historical smoothhound trawl trips to occur (Table 10), fishermen stand to experience moderate positive social and economic impacts.

When compared to the No Action alternative, Alternative B3 would have moderate direct short-term and long-term positive social and economic impacts. Currently, some trawl fishermen supplement fishing revenue with smoothhound shark product. Under the No Action alternative, they would no longer be able to do so. Under Alternative B3, however, they would continue to be allowed to retain and sell incidentally smoothhound sharks. Calculating the exact level of revenue that would continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternative B3 would

continue to allow approximately 97 percent of the historical smoothhound trawl trips (Table 10), fishermen stand to experience moderate positive social and economic impacts.

Alternative B1 would have minor indirect short-term and long-term social and economic negative impacts. Smoothhound sharks make up a small portion of the total catch, therefore, bait and supply dealers, fish dealers, and consumers would only have minor negative impacts. The directed fishery utilizes gillnet gear and operates at a much higher capacity than the incidental trawl fishery. Since the directed fishery is so much larger, the marketplace and suppliers would not be greatly impacted by the elimination of trawl landings of smoothhound sharks.

Alternatives B2 and B3 would have neutral indirect short-term and long-term social and economic impacts. Businesses supporting the trawl fisheries, including bait suppliers and trawl boat maintenance, do not rely on smoothhound shark landings since trawl fishermen do not rely on smoothhound shark landings. End use consumers and fish processors already receive the majority of smoothhound shark product from the gillnet fishery and therefore, would not be impacted by a reduction in trawl landings.

Table 10 **Number of trawl trips less than or equal to 25 and 50 percent smoothhound shark catch, 2000-2009;** Source: VTR data 2000-2009

	2000-2009 Total	**2000-2009 Annual Average**	**Percent of Total Smoothhound Shark Trawl Trips**
Number of trawl trips that retained smoothhound sharks	12,975	1,298	100 %
Number of trawl trips with ≤ 25 % smoothhound shark retained catch	11,535	1,154	89 %
Number of trawl trips with ≤ 50 % smoothhound shark retained catch	12,599	1,260	97 %

Alternatives B1 through B3 are expected to have neutral cumulative short-term and long-term social and economic impacts. Because these alternatives would not change trawl effort, social and economic impacts would not have any cumulative effect when considered in association with other rulemakings or fishery issues.

In conclusion, none of the alternatives are expected to result in any change in fishing effort because smoothhound sharks are rarely, if ever, targeted with trawl gear. Smoothhound sharks are usually caught incidentally while trawl fishing for other species such as summer flounder, scup, croaker, silver hake, and *Loligo* squid. Therefore, any social and economic impacts, either positive or negative, are expected to be minor. Under Alternative B1, trawl fishermen could collectively lose $68,968 per year between 266 vessels (or approximately $259 per vessel) when smoothhound sharks are fully incorporated into the HMS management unit. Under Alternatives B2 and B3, however, they would continue to be allowed to retain and sell incidentally-caught smoothhound sharks, albeit at a possibly reduced rate from the status quo. Calculating the exact level of revenue that would continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternatives B2 and B3 would continue to allow approximately 89 percent and 97 percent of

historical smoothhound trawl trips to occur, respectively, fishermen would experience moderate positive social and economic impacts as compared with the no action alternative.

Section 4.3 Mitigation

This rulemaking addresses regulatory discards of swordfish and smoothhound sharks in Atlantic trawl fisheries and is intended, in part, to mitigate existing or future (post smoothhound shark management measure implementation) economic impacts in the squid and Mid-Atlantic bottom trawl fisheries. As such, the alternatives were specifically selected to mitigate potential adverse impacts on the social, economic, and ecological environment. At this time, NMFS has not identified any other mitigation measures to offset adverse impacts. NMFS will monitor the impacts of the final management measures and will consider other mitigation measures in the future as necessary. NMFS chose to develop alternatives that avoided, minimized, and mitigated adverse ecological, social and economic impacts from the outset, thus avoiding to the greatest extent practicable residual or unavoidable adverse impacts.

NMFS does not expect either of the preferred alternatives to change effort in the squid or mid-Atlantic bottom trawl fisheries. Rather, the preferred alternatives will facilitate the retention of incidentally-caught swordfish and smoothhound sharks. As noted in Section 3.3.1, swordfish have a high mortality rate when caught in trawl gear, and so the ecological impacts of retention are the same as discarding the dead fish. Although smoothhound sharks have a lower mortality rate when caught in trawl gear, allowing some discarded fish to returned to the population, the smoothhound shark stock appears to be healthy and can sustain current levels of fishing mortality. For these reasons, there are no potential adverse ecological impacts that will result from implementing the preferred alternatives that need to be mitigated.

Since regulatory discards generally have social and economic implications, mitigation of these impacts was purposely considered while analyzing the alternatives. Alternative A2, one of the preferred alternatives, will create a new permit for *Illex* squid moratorium permit holders to retain up to 15 incidentally-caught swordfish. This permit will eliminate the need for the "HMS permit triple-pack" for squid trawl fishermen and facilitate the retention of swordfish. Although applying for the permit will require some effort on the fishermen's behalf, fishermen who do not wish to retain swordfish will not be required to apply for the permit. As noted in Section 3.2.1, five current *Illex* squid moratorium permit holders have the "HMS permit triple-pack" required for the retention of swordfish. These five permit holders will be required to apply for a new Incidental HMS Squid Trawl permit if they intend to continue retaining swordfish. Although this will be a change for fishermen, the HMS permit triple-pack has value on the open market and can be sold, thereby mitigating the extra effort to obtain the Incidental HMS Squid Trawl permit.

Alternative B2, the second preferred alternative will allow Atlantic trawl fishermen to retain incidentally-caught smoothhound sharks in an amount not to exceed 25 percent of the total fish onboard by weight. The requirement to obtain a smoothhound shark open access permit could result in an increased burden on trawl fishermen, however, this permit will be required of all fishermen who wish to retain and sell smoothhound sharks. At discussed in Section 4.2.2, 11 percent of the trawl trips that have retained smoothhound sharks over the past 10 years will be illegal under the preferred alternative. Although the 25 percent retention limit will preclude a

certain level of catch, the number of trips is relatively low and will not impact a large number of fishermen. Furthermore, fishermen rarely, if ever, target smoothhound sharks with trawl gear, and so the retention limit is not expected to present an impediment to continued fishing.

In summary, this rulemaking aims to facilitate the retention of swordfish and smoothhound sharks caught incidentally in trawl gear, thereby reducing regulatory discards. The alternatives were specifically selected to mitigate potential adverse impacts on the social, economic, and ecological environment by converting discards into landings, and providing additional fishery data, without causing adverse ecological impacts. No change in trawl fishing effort or impacts is anticipated. Any possible negative impacts associated with the preferred alternatives have been mitigated to the maximum extent practicable.

Section 4.4 Comparison of Alternatives

Table 11 provides a qualitative comparison of the impacts associated with the various alternatives considered to address the retention of HMS in trawl gear. This table summarizes the impacts that were discussed in detail in Sections 4.1 and 4.2.

Table 11 Comparison of alternatives considered

Alternative	Quality	Timeframe	Environmental	Protected Resources	Socioeconomic
A1: No Action. Maintain existing regulations allowing the incidental retention of 15 swordfish per trip for squid trawlers issued the "HMS triple pack"	Direct	Short-term	O	O	O -
		Long-term	O	O	O -
	Indirect	Short-term	O	O	O -
		Long-term	O	O	O -
	Cumulative	Short-term	O	O	O -
		Long-term	O	O	O -
A2: Establish a new permit for *Illex* squid moratorium permit holders to retain swordfish (*Preferred alternative)*	Direct	Short-term	O	O	O +
		Long-term	O	O	O +
	Indirect	Short-term	O	O	O +
		Long-term	O	O	O +
	Cumulative	Short-term	O	O	O +
		Long-term	O	O	O +

A3: Exempt *Illex* squid moratorium permit holders from current HMS permitting requirements to retain swordfish	Direct	Short-term	O	O	O+
		Long-term	O	O	O
	Indirect	Short-term	O	O	O+
		Long-term	O	O	O+
	Cumulative	Short-term	O	O	O+
		Long-term	O	O	O+
A4: Establish either a new permit *or* an exemption, as applicable, for *Loligo* squid moratorium permit holders to retain swordfish	Direct	Short-term	O	O	O+
		Long-term	O	O	O+
	Indirect	Short-term	O	O	O+
		Long-term	O	O	O+
	Cumulative	Short-term	O	O	O+
		Long-term	O	O	O+
B1: No Action. Do not allow the retention of smoothhound sharks caught with trawl gear	Direct	Short-term	O+	O	O-
		Long-term	O+	O	O-
	Indirect	Short-term	O	O	O-
		Long-term	O	O	O-
	Cumulative	Short-term	O	O	O
		Long-term	O	O	O-
B2: Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 25 percent of the total catch, by weight (*Preferred alternative*)	Direct	Short-term	O-	O	O+
		Long-term	O-	O	O+
	Indirect	Short-term	O	O	O
		Long-term	O	O	O
	Cumulative	Short-term	O	O	O

		Long-term	O	O	O
B3: Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 50 percent of the total catch, by weight	Direct	Short-term	⊙ -	O	Ø +
		Long-term	⊙ -	O	Ø +
	Indirect	Short-term	O	O	O
		Long-term	O	O	O
	Cumulative	Short-term	O	O	O
		Long-term	O	O	⊙ -

Symbol Key:

O Neutral Impacts

⊙ - Minor Adverse Impacts

⊙ + Minor Beneficial Impacts

Ø - Moderate Adverse Impacts

Ø + Moderate Beneficial Impacts

Section 4.5 Cumulative Impacts

Cumulative impacts are the impacts on the environment, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR §1508.7). A cumulative impact includes the total effect on a natural resource, ecosystem, or human community, due to past, present, and future activities or actions of Federal, non-Federal, public, and private entities. Cumulative impacts may also include the effects of natural processes and events, depending on the specific resource in question. Cumulative impacts include the total of all impacts to a particular resource that have occurred, are occurring, and will likely occur as a result of any action or influence, including the direct and reasonably foreseeable indirect impacts of a Federal activity. The goal of this section is to describe the cumulative ecological, economic, and social impacts of past, present, and reasonably foreseeable future actions with regard to Atlantic swordfish and smoothhound fisheries.

As discussed in Sections 4.1 and 4.2, NMFS does not anticipate any adverse cumulative ecological, economic, and social impacts. The alternatives considered in this EA will modify existing management measures to provide a reasonable opportunity for U.S. fishermen to fully harvest the domestic swordfish quota and manage smoothhound sharks using uniform conservation and management measures developed and implemented through an FMP in accordance with the procedures set forth in the Magnuson-Stevens Act. These preferred alternatives are not expected to create changes in fishing practices or trawl effort, or cause significant ecological, economic, or social impacts. The preferred alternatives selected in this

EA will continue to prevent overfishing without jeopardizing the sustainability of the North Atlantic swordfish, smoothhound shark, or mid-Atlantic mixed trawl fisheries.

In conclusion, NMFS considers that this preferred alternative is consistent with past, current, and reasonably foreseeable future actions with no substantial adverse, cumulative impacts on the environment from the actions. NMFS recognizes, however, that it may need to reexamine HMS management measures in the future as more information on incidental catches of North Atlantic swordfish and smoothhound sharks in trawl vessels becomes available. NMFS will continue to take actions, consistent with the 1999 FMP for Atlantic Tunas, Swordfish, and Sharks, Consolidated HMS FMP, and Amendment 3 to the Consolidated HMS FMP, to ensure that there are no adverse cumulative impacts on the environment. Foreseeable future actions could include implementation of the 2011 swordfish specifications and regulations implementing the Shark Conservation Act of 2010.

Section 5.0 Regulatory Impact Review

This Regulatory Impact Review (RIR) is conducted to comply with Executive Order 12866 (E.O. 12866) and provides analyses of the economic benefits and costs of each alternative to the nation and the fishery as a whole. The information contained in Section 4, taken together with the data and analysis incorporated by reference, comprise the complete RIR.

The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

> *In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits should be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.*

E.O. 12866 further requires Office of Management and Budget review of proposed regulations that are considered to be "significant." A significant regulatory action is one that is likely to:

- Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments of communities;
- Create serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the president's priorities, or the principles set forth in this Executive Order.

Section 5.1 Description of Management Objectives

Please see Section 1 for a full description of the purpose and need for this final rule. This action is necessary to achieve domestic management objectives under the Magnuson-Stevens Act and the 2006 Consolidated HMS FMP. The objectives of this action are to:

1) Monitor and control all components of fishing mortality, both directed and incidental, so as to ensure the long-term sustainability of HMS stocks
2) Provide the data necessary for assessing HMS fish stocks and managing HMS fisheries
3) Address inadequacies in current data collection and the ongoing collection of social, economic, and bycatch data in Atlantic HMS fisheries
4) Reduce regulatory discards and economic waste of HMS in trawl fisheries by converting incidental catches of HMS into landings.

Section 5.2 Description of Fishery

Please refer to Section 3 of this EA/RIR/FRFA for a description of fishery and environment that could be affected by this rulemaking.

Section 5.3 Statement of the Problem

Please see Section 1 for a full discussion of the problem and need for this management action. The purpose of the preferred alternative is to reduce regulatory dead discards of HMS in trawl fisheries, to the extent practicable, by converting discards into landings, improving fishery data collection, providing additional opportunities to catch the U.S. swordfish quota, and to accommodate traditional fishing methods (*i.e.*, trawls) that incidentally capture swordfish and smoothhound shark species.

Section 5.4 Description of Each Alternative

Please see Sections 2 and 4 for a summary of the preferred and No Action alternatives and a complete description of each alternative and its expected impacts.

Section 5.5 Economic Analysis of Expected Effects of Each Alternative Relative to the Baseline

Alternative A1, the no action alternative, would maintain existing HMS permit requirements and incidental swordfish retention limits in squid trawl fisheries. This alternative contributes to a loss of potential income by squid trawl vessels which may occasionally catch a swordfish, during normal squid fishing activities, while it is foraging on squid. NMFS has determined that only five squid trawl vessels out of 180 active squid vessels have been issued the requisite "HMS permit triple-pack" necessary to retain swordfish. This means that most squid trawl vessels must discard any incidentally-caught swordfish because they do not have the proper LAPs needed to retain them. Because many of the swordfish incidentally caught by squid trawl vessels are brought onboard dead, or die soon afterwards, these dead discards constitute unrealized income and economic waste. In aggregate, the total amount of unrealized annual income by the 13 active *Illex/Loligo* squid trawl vessels is estimated to range from $50,041-$54,007, depending upon the number of small and large active squid trawl vessels. Similarly, the

total amount of unrealized annual income by the 162 active *Loligo* squid trawl vessels ranges from $57,562-$76,749, depending upon the number of small and large active *Loligo* squid trawl vessels. The total number of swordfish estimated to be discarded annually in squid trawl fisheries under the no action alternative is not large (less than 450 annually), however each discard represents a loss of potential income. Each swordfish discard is estimated to be valued at approximately $296.10. The value of losses would change depending upon the number of swordfish discards that occur.

Alternative A2, the preferred alternative, will implement a new permit for *Illex* squid moratorium permit holders to retain up to 15 swordfish per trip, the current squid trawl limit. This alternative is estimated to provide a moderate increase in annual revenues from between $3,849.30-$4,145.40 annually for the 13 active *Illex/Loligo* squid trawl vessels that are not issued HMS permits. In aggregate, Alternative A2 could produce between $50,041-$54,007 annually in additional revenues amongst all 13 active *Illex/Loligo* squid trawl vessels. These estimates were calculated using the average number of swordfish discards per tow from NEFSC observer data, and then extrapolating to determine the average number of swordfish discards per year for active vessels. It is possible, but highly improbable, that every permitted *Illex* squid trawl vessel would retain 15 swordfish per trip on every trip of the year under this alternative. In that situation, a squid trawl vessel could realize an increase of up to $4,441.50 per trip (15 fish * $296.10). If all 71 *Illex* squid trawl vessels were to retain 15 swordfish on 10 trips during the course of a year, it would equate to 10,650 fish valued at over $3.1 million dollars. However, NMFS expects that overall *Illex* squid trawl fishing effort will not change, and that the incidental catch of swordfish will also remain unchanged. Alternative A2 will allow *Illex* squid trawl vessels to retain swordfish caught incidentally while conducting normal squid trawl trawling activities. The preferred alternative will convert dead swordfish discards into landings and provide minor economic benefits.

Alternative A3 would exempt *Illex* squid moratorium permit holders from current HMS permit requirements (*i.e.*, the HMS "permit triple-pack") and allow them to retain up to 15 swordfish when fishing for squid. This alternative would have the same direct economic impacts as Alternative A2 (*e.g.*, a moderate increase in annual revenues from between $3,849.30 - $4,145.40 annually for active *Illex* vessels). The only difference is that there would be no new permit requirement. This alternative would convert dead swordfish discards into landings and provide minor economic benefits.

Alternative A4 would establish either a new Incidental HMS Squid Trawl permit available to all vessel owners currently issued a *Loligo* squid moratorium permit, or establish an exemption from the need for *Loligo* squid trawl vessels to be issued the "HMS permit triple-pack" to retain swordfish. This alternative would implement the same requirements on *Loligo* squid trawl vessels that NMFS selects for *Illex* squid trawl fishermen. This alternative is estimated to provide a moderate increase in annual revenues from between $355.32 - $473.76 annually for 162 active *Loligo* squid trawl vessels that are not issued HMS permits. In aggregate, the total amount of additional annual income that could be realized under this alternative by the 162 active *Loligo* squid trawl vessels ranges from $57,562-$76,749, depending upon the number of small and large active *Loligo* squid trawl vessels. This alternative would convert dead swordfish discards into landings and provide minor economic benefits.

Under the no-action alternative, B1, the retention of smoothhound sharks would be prohibited by trawl vessels, when smoothhound sharks are fully incorporated into the HMS management unit, without the additional regulatory action in this rulemaking. Therefore Alternative B1, the no action alternative, would have moderate direct short-term and long-term negative social and economic impacts. Based on VTR data from 2000-2009, an average of 145,088 lbs dressed weight dw of smoothhound sharks were caught in trawl gear, retained, and likely sold per year. Using an average ex-vessel price of $0.29 for smoothhound shark meat, $2.02 for smoothhound shark fins, and assuming a fin-to-carcass ratio of twelve percent (per the 2010 Shark Conservation Act, Public Law 111-348), total revenues from smoothhound sharks caught in trawl gear averages $68,968 per year (129,543 lbs * $0.29 + 15,545 * $2.02). In aggregate, under Alternative B1, in 2012 trawl fishermen could collectively lose $68,968 per year across up to 266 vessels. Individually, each vessel could realize approximately $259 annually in lost revenue under the no action alternative.

Alternative B2, the preferred alternative, will allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 25 percent of the total catch, by weight. When compared to the No Action alternative, Alternative B2 will have moderate direct short-term and long-term positive social and economic impacts. Currently, some trawl fishermen supplement fishing revenue with smoothhound shark products. Under the No Action alternative, they would no longer be able to do so starting when smoothhound sharks are fully incorporated into the HMS management unit. Under Alternative B2, however, they will continue to be allowed to retain and sell incidentally caught smoothhound sharks. Calculating the exact level of revenue that will continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternative B2 will continue to allow approximately 89 percent of historical smoothhound trawl trips (Table 10), fishermen stand to experience moderate positive social and economic impacts.

Alternative B3 would allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 50 percent of the total catch, by weight. When compared to the No Action alternative, Alternative B3 would have moderate direct short-term and long-term positive social and economic impacts. Currently, some trawl fishermen supplement fishing revenue with smoothhound shark products. Under the No Action alternative, they would no longer be able to do so at a future date when smoothhound sharks are fully incorporated into the HMS management unit. Under Alternative B3, however, they would continue to be allowed to retain and sell incidentally-caught smoothhound sharks. Calculating the exact level of revenue that would continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternative B3 would continue to allow approximately 97 percent of the historical smoothhound trawl trips (Table 10), fishermen stand to experience moderate positive social and economic impacts.

In summary, Alternative B2 (preferred alternative) will have minor direct short-term positive economic impacts. Trawl vessels will continue to be allowed to retain and sell

incidentally caught smoothhound sharks. Calculating the exact level of revenue that would continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternative B2 will continue to allow approximately 89 percent of historical smoothhound trawl trips (Table 10), fishermen stand to experience moderate positive social and economic impacts.

Table 12 Net Economic Costs and Benefits of Alternatives

Alternatives	Net Economic Benefits	Net Economic Costs
Alternative A1 No Action	No significant change in economic benefits.	There could be minor adverse economic impacts in the short and long-term if squid trawl vessels are not allowed to retain swordfish caught incidentally while squid trawling and are required to discard them dead. Estimated unrealized revenues range from $3,849.30 - $4,145.40 annually per vessel for 13 active *Illex* squid trawlers.
Alternative A2 Establish a new permit for *Illex* squid moratorium permit holders to retain swordfish (*Preferred alternative*)	Minor positive social and economic impacts would potentially result if *Illex* squid trawl vessels are required to obtain a permit and are allowed to retain up to 15 swordfish per trip. Estimated revenue increases range from $3,849.30 - $4,145.40 annually per vessel for 13 active *Illex* squid trawlers. Would assist in data collection due to permit.	There could be very minor costs for squid trawl vessels to obtain new permits.
Alterative A3 Exempt *Illex* squid moratorium permit holders from current HMS permitting requirements to retain swordfish	Minor positive economic impacts would potentially result if *Illex* squid trawl vessels are allowed to retain up to 15 swordfish per trip. Estimated revenue increases range from $3,849.30 - $4,145.40 annually per vessel for 13 active *Illex* squid trawlers.	There could be a potential loss in data collection without requiring a permit. This could adversely affect quota monitoring and management activities, leading to indirect economic costs.
Alternative A4 Establish either a new permit *or* an exemption, as applicable, for *Loligo* squid moratorium permit holders to retain swordfish	Minor positive social and economic impacts would potentially result if *Loligo* squid trawl vessels are required to obtain a permit and are allowed to retain up to 15 swordfish per trip. Estimated revenue increases range from $355.32 - $473.76 annually per vessel for 162 active *Loligo* squid trawlers. Could assist in data collection if permit required.	There could be very minor costs for squid trawl vessels if permit is required. There could be a potential loss in data collection if permit is not required. This could adversely affect quota monitoring and management activities, leading to indirect economic costs.
Alternative B1 No Action	No significant change in economic benefits.	There could be moderate direct adverse social and economic impacts in the short and long-term if trawl vessels are not allowed to retain smoothhound sharks that are caught

Alternatives	Net Economic Benefits	Net Economic Costs
		incidentally. Currently, trawl fishermen are allowed to retain and sell the species but will be unable to when smoothhound sharks are fully incorporated into the HMS management unit. This alternative would preclude average annual revenues of $68,968 in trawl fisheries from the sale of smoothhound product.
Alternative B2 Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 25 percent of the total catch, by weight (*Preferred alternative*)	There could be moderate direct beneficial social and economic impacts in the short and long-term if trawl vessels are allowed to retain smoothhound sharks that are caught incidentally.	Some historical trawl trips that have landed smoothhound shark in the past would not be legal under this alternative. This alternative would preclude 11 percent of the historical smoothhound trawl trips due to the 25 percent retention limit.
Alternative B3 Allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 50 percent of the total catch, by weight	There could be moderate direct beneficial social and economic impacts in the short and long-term if trawl vessels are allowed to retain smoothhound sharks that are caught incidentally.	Some historical trawl trips that have landed smoothhound shark in the past would not be legal under this alternative. This alternative would preclude 3 percent of the historical smoothhound trawl trips due to the 50 percent retention limit.

Section 5.6 Conclusion

Under E.O. 12866, a regulation is a "significant regulatory action" if it is likely to: (1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights, and obligation of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. The actions described in this EA/RIR/FRFA do not meet the above criteria. The economic impacts as reflected in this final rule are under the $100 million threshold (see Section 5.5). The preferred alternatives will also not create an inconsistency or interfere with an action taken by another agency. Furthermore, the preferred alternatives will not materially alter the budgetary impact of entitlements, grants, user fees, the President's priorities, or the principles set forth in E.O. 12866. Nor would the final regulations raise any unique legal or policy issues. The Secretary, through NMFS, has managed the north Atlantic swordfish fishery since 1990, and the smoothhound shark fishery since 2010. In addition, NMFS has participated in international efforts to develop management measures for HMS stocks affected by multiple nations. None of the alternatives analyzed in this EA/RIR/FRFA materially depart from this management approach. Therefore, under E.O. 12866, the preferred alternatives described in this document have been determined to be not significant for the purposes of E.O. 12866. The Office of Management and Budget

(OMB) concurred with this determination provided in the listing memo for this management action.

Section 6.0 Final Regulatory Flexibility Analysis

The Final Regulatory Flexibility Analysis (FRFA) is conducted to comply with the Regulatory Flexibility Act (5 USC 601 et. seq.) (RFA). The goal of the RFA is to minimize the economic burden of federal regulations on small entities. To that end, the RFA directs federal agencies to assess whether the proposed regulation is likely to result in significant economic impacts to a substantial number of small entities, and identify and analyze any significant alternatives to the proposed rule that accomplish the objectives of applicable statutes and minimize any significant effects on small entities. Certain data and analysis required in a FRFA are also included in other chapters of this EA. Therefore, the FRFA incorporates the economic impacts identified in the EA by reference as supporting data for this analysis.

When developing this action, NMFS considered different ways to reduce the regulatory burden on and provide flexibility to the regulated community, consistent with the recent Presidential Memorandum on Regulatory Flexibility, Small Business, and Job Creation (January 18, 2011). In order to meet the objectives of this rule, consistent with legal obligations, NMFS considered several alternatives including the establishment of an exemption for squid trawl vessels to retain swordfish without the need for an HMS permit. This approach is not preferred because it would not provide important data regarding the number of HMS trawl fishery participants and because it would preclude the ability for the HMS Management Division to select squid trawl vessels for observer coverage, if necessary. NMFS also considered establishing a new HMS permit for *Loligo* squid moratorium permit holders to retain swordfish, but does not prefer the alternative because of low swordfish interaction rates by these vessels.

Section 6.1 Description of the Reasons Why Action is Being Considered

Please see Section 1 for a full discussion of the need for action. The purpose of this action is to modify the allowance for the retention of incidental catches of HMS in trawl gears to reduce regulatory dead discards, to the extent practicable, by converting discards into landings. This action will improve fishery data collection, provide additional opportunities to catch the U.S. swordfish quota, and accommodate traditional fishing methods (*i.e.*, trawls) that incidentally capture North Atlantic swordfish and smoothhound shark species.

Section 6.2 A Summary of the Significant Issues Raised by the Public Comments in Response to the Initial Regulatory Flexibility Analysis, a Summary of the Assessment of the Agency of Such Issues, and a Statement of Any Changes Made in the Rule as a Result of Such Comments

NMFS received seven comment letters on the Federal Docket Management System (FDMS) that were submitted using the www.regulations.gov website. Most comments were received verbally during public hearings. A summary of these comments and the Agency's responses are included in Appendix A of this document and in the final rule. The specific economic concerns raised in the comments are also summarized here and the numbering of

individual comments below matches with the comment numbering in Appendix A and the final rule.

Comment 2: NMFS should implement Alternative A2 because it will provide economic benefits by reducing dead discards of swordfish and converting them into landings. It is painful for *Illex* squid trawl vessels to discard incidentally-caught dead swordfish just because they do not have the correct HMS permits. The swordfish stock is fully rebuilt, so there is potential for more landings. The positive economic impacts to an individual vessel would be helpful. Alternative 2 would also be a great benefit to New Jersey ports, especially Cape May, NJ where many *Illex* vessels unload.

Response: NMFS agrees. Alternative 2, the preferred alternative, is estimated to result in moderate economic benefits ranging from $3,849 - $4,145 annually for active *Illex* squid trawl vessels. These estimates are based upon historical observer data that indicates an average of 1.2–3.3 swordfish discards per *Illex* trip. For trips that land the maximum of 15 swordfish, the additional ex-vessel revenue associated with those landings could be approximately $4,441 per *Illex* trip. However, because the *Illex* squid trawl fishing season occurs primarily during the months of July and August, and relatively few vessels actively participate in the fishery, NMFS does not anticipate that a large number of squid trawl trips will land the maximum allowable limit. This final rule will ameliorate economic waste by allowing swordfish that are incidentally-caught while trawling for *Illex* squid to be retained and sold, rather than discarded dead. Fishing ports in Rhode Island and New Jersey are expected to be positively impacted by this rule because these states historically account for over 90 percent of *Illex* squid landings.

Comment 28: Several commenters stated that while the ecological impacts are negligible, the economic benefits could be large for many trawl fishermen.

Response: NMFS does not expect trawl fishing effort levels or rates to change as a result of this final rule. As such, no new direct, indirect, or cumulative ecological impacts are expected. However, continuing to allow trawl fishermen to retain and sell incidentally-caught smoothhound sharks, rather than prohibiting trawl landings, would provide some revenue. Across the entire trawl fishery, the allowance to retain and sell a limited number of smoothhound sharks is expected to maintain revenues at levels just below the ten year average of $68,968 annually.

Comment 29: NMFS received comment disagreeing with the statement in the economic impact analysis that businesses supporting trawl fisheries do not rely on smoothhound shark landings, especially as the statement applies to Ocean City, MD.

Response: Smoothhound sharks are overwhelmingly caught and retained incidentally in Atlantic trawl fisheries while fishing for other species. They are not the primary reason for fishermen to embark on a trawl trip. NMFS is establishing a trawl retention limit that will allow 89 percent of historical trips that landed smoothhound sharks to continue to occur. Because retention of trawl-caught smoothhound sharks will continue to be allowed at historical levels, businesses supporting trawl trips are not likely to be affected by this rulemaking. If, after the fishery is better characterized through mandatory permitting, reporting, and observer coverage, it

is determined that smoothhound sharks caught in trawl gear have a greater indirect economic impact, the economic analyses will be updated.

There are no substantive changes from the proposed rule as a result of these economic comments.

Section 6.3 Description and Estimate of the Number of Small Entities to Which the Final Rule Will Apply

Alternative A2 (preferred alternative) will apply to all squid trawl vessels that are issued an *Illex* squid moratorium fishing permit. All of these are considered small entities. As of September 2010, there were 76 *Illex* squid moratorium permit holders, of which 18 were considered "active" (*i.e.*, reported landings in 2009). Rhode Island and New Jersey accounted for 99 percent of *Illex* squid landings in 2009 (see Table 4).

Alternative B2 (preferred alternative) will apply to all trawl vessels that would obtain an open access smooth dogfish permit when it becomes available. All of these are considered small entities. NMFS cannot provide an estimate of the number of trawl vessels that would obtain an open access permit for smoothhound sharks, because that permit is currently not required. As a proxy, NMFS based its analysis upon vessels participating in the summer flounder and scup fisheries because these trawl fisheries frequently interact with smoothhound sharks. In 2009, approximately 1,100 vessels were issued either a commercial summer flounder permit or a commercial scup permit or both (MAFMC 2010c). NMFS records indicate that 798 vessels landed summer flounder in 2000. Rhode Island, New York, New Jersey, Virginia, and North Carolina are the primary states with landings of summer flounder and scup.

Section 6.4 Description of the Projected Reporting, Record-Keeping, and other Compliance Requirements of the Final Rule, Including an Estimate of the Classes of Small Entities which will be Subject to the Requirements of the Report or Record

This final rule does not contain any new reporting requirements, but does contain new recordkeeping and compliance requirements (5 U.S.C. 603 (b)(4)). *Illex* squid trawl vessels that intend to retain swordfish will be required to obtain a new Incidental HMS Squid Trawl permit. The new federal permit will allow NMFS to collect basic data regarding participants in the fishery. The federal Incidental HMS Squid Trawl permit requirement will require a similar permit application as is currently required for other NMFS permits. The information collected on the application would include vessel information, owner identification, and contact information. A modest fee to process the application and an annual renewal fee of approximately $20 may be required in the future. There are no projected reporting, record-keeping, and other compliance requirements associated with establishing a smoothhound retention limit for trawl vessels (Issue B).

Section 6.5 Description of the Steps the Agency Has Taken to Minimize the Significant Economic Impact on Small Entities Consistent with the Stated Objective of Applicable Statues, Including a Statement of the Factual, Policy, and Legal Reasons for Selecting the Alternative

Adopted in the Final Rule and The Reason That Each one of the Other Significant Alternatives to the Rule Considered by the Agency Which Affect Small Entities Was Rejected

One of the requirements of an FRFA is to describe any alternatives to the proposed rule which accomplish the stated objectives while minimizing any significant economic impacts. These impacts are discussed below and in Sections 3, 4, and 5 of this document. Additionally, the Regulatory Flexibility Act (5 U.S.C. §603 (c) (1)-(4)) lists four general categories of "significant" alternatives that would assist an agency in the development of significant alternatives. These categories of alternatives are:

1. Establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
2. Clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
3. Use of performance rather than design standards; and
4. Exemptions from coverage of the rule for small entities.

In order to meet the objectives of this final rule, consistent with legal obligations, NMFS cannot exempt small entities or change the reporting requirements only for small entities. Thus, there are no alternatives discussed that fall under the first and fourth categories described above. In addition, NMFS intends to clarify and consolidate compliance and reporting requirements associated with this final rule, to the extent practicable (category two above). All federally permitted squid trawl vessels must currently report all their landings in NMFS' Northeast Region's Fishing Vessel Trip Report (VTR). NMFS intends to continue to utilize this reporting mechanism for all vessels that will be issued an Incidental HMS Squid Trawl permit to report their swordfish landings. Similarly, the application process for the new Incidental HMS Squid Trawl permit will be the same as the process to apply for an *Illex* squid moratorium permit. The only prerequisite for obtaining the new permit will be that the vessel has already been issued a valid *Illex* squid moratorium permit. There are no compliance and reporting requirements associated with establishing a smoothhound retention limit for trawl vessels (Issue B).

NMFS considered and analyzed four alternatives to address the retention of incidentally-caught swordfish in squid trawl fisheries (Issue A), and three alternatives to address the retention of incidentally-caught smoothhound shark in trawl fisheries (Issue B), for the proposed rule.

The first alternative for Issue A was the No Action alternative. This alternative would maintain existing HMS permit requirements and incidental swordfish retention limits in squid trawl fisheries. The second alternative, the preferred alternative, will implement a new permit (referred to as the Incidental HMS Squid Trawl permit) for *Illex* squid moratorium permit holders to retain up to 15 swordfish per trip, the current squid trawl limit. The third alternative would exempt *Illex* squid moratorium permit holders from current HMS permit requirements (*i.e.*, the "HMS permit triple-pack") and allow them to retain up to 15 swordfish when fishing for squid. Finally, the fourth alternative would establish either a new Incidental HMS Squid Trawl permit available to all vessel owners currently issued a *Loligo* squid moratorium permit, or establish an exemption from the need for *Loligo* squid trawl vessels to be issued the "HMS permit triple-pack" to retain swordfish.

Alternative A1, the No Action alternative, would not result in any additional economic impacts to small entities in the short-term. However, this alternative contributes to a loss of potential income by squid trawl vessels which may occasionally catch a swordfish while it is foraging on squid during normal squid trawl fishing activities. The current HMS permit structure is not well-suited for squid trawl vessels. Only five squid trawl vessels out of 180 active squid vessels have been issued the requisite "HMS permit triple-pack" needed to retain swordfish. There are 18 active squid trawl vessels which are issued both an *Illex* and *Loligo* permit (*i.e.*, *Illex/Loligo* vessels). It is presumed that the five squid trawl vessels issued the necessary HMS permits are also *Illex/Loligo* vessels. This means that most squid trawl vessels must discard any incidentally-caught swordfish because they do not have the proper LAPs needed to retain them. Because many of the swordfish incidentally caught by squid trawl vessels are brought onboard dead, or die soon afterwards, these dead discards constitute unrealized income and economic waste. NMFS estimates that the no action alternative contributes from $3,849.30-$4,145.40 annually in unrealized income for the 13 active *Illex/Loligo* squid trawl vessels that are not issued HMS permits. In aggregate, the total amount of unrealized annual income by all 13 active *Illex/Loligo* squid trawl vessels is estimated to range from $50,041-$54,007, depending upon the number of small and large active squid trawl vessels. Similarly, the total amount of unrealized annual income by all 162 active *Loligo* squid trawl vessels ranges from $57,562-$76,749, depending upon the number of small and large active *Loligo* squid trawl vessels. Each swordfish discard is estimated to be valued at approximately $296.10. Therefore, the amount of unrealized income under Alternative A1 would change depending upon the number of swordfish discards that occur. Because the No Action alternative (A1) has neutral ecological impacts but contributes to regulatory discards of dead swordfish, thereby causing economic waste, and because current HMS permit requirements (*i.e.*, the "HMS permit triple-pack") are not well-suited for squid trawl vessels, it was not chosen as the preferred alternative.

The preferred alternative, A2, will implement a new permit (referred to as the Incidental HMS Squid Trawl permit for *Illex* squid moratorium permit holders to retain up to 15 swordfish per trip, the current squid trawl limit. This alternative is estimated to provide a moderate increase in annual revenues from between $3,849.30-$4,145.40 annually for the 13 active *Illex/Loligo* squid trawl vessels that are not issued HMS permits. In aggregate, Alternative A2 could produce between $50,041-$54,007 annually in additional revenue amongst all 13 active *Illex/Loligo* squid trawl vessels. These estimates were calculated using the average number of swordfish discards per tow from NEFSC observer data, and then extrapolating to determine the average number of swordfish discards per year for active vessels. It is possible, but highly improbable, that every permitted *Illex* squid trawl vessel would retain 15 swordfish per trip on every trip of the year under this alternative. In that situation, a squid trawl vessel could realize an increase of up to $4,441.50 per trip (15 fish * $296.10). If all 71 *Illex* squid trawl vessels that are not currently issued the necessary HMS permits were to retain 15 swordfish on 10 trips during the course of a year, it would equate to 10,650 fish valued at over $3.1 million dollars. However, NMFS expects that overall *Illex* squid trawl fishing effort will not change from recent levels, and that the incidental catch of swordfish will also remain unchanged. Alternative A2 will allow *Illex* squid trawl vessels to retain swordfish caught incidentally during normal squid trawl fishing activities. This alternative will convert dead swordfish discards into landings and provide some minor economic benefits to *Illex* squid trawl vessels. Also, by implementing a

permit requirement, NMFS will obtain important fishery management information including the identification of participants in the squid trawl fishery that may catch swordfish occasionally. This information will help in outreach efforts. The federal Incidental HMS Squid Trawl permit will require a permit application similar to other current HMS permits. The information collected on the application will include vessel information and owner identification and contact information. A modest fee to process the application and annual renewal fee of approximately $20 may be required in the future. This alternative is selected because it converts dead swordfish discards into landings, provides minor economic benefits to small entities, reduces economic waste, provides additional fishery management information, and is not expected to alter current levels of trawl fishing effort or cause adverse ecological impacts, including impacts on protected species, target species, non-target species, and essential fish habitat.

Alternative A3 is estimated to have the same minor positive economic impacts on small entities as Alternative A2. However there would be no costs to vessel owners associated with obtaining a new HMS permit (approximately $20/year). Rather, Alternative A3 would exempt vessels issued an *Illex* squid moratorium permit from HMS permit requirements and allow them to land up to 15 swordfish caught incidentally while squid trawling. All swordfish landings would still have to be reported in the VTR logbook (as currently required), so landings information would be obtained. While this alternative would be less burdensome to industry, it would not help NMFS identify the universe of vessels participating in the *Illex* squid trawl fishery that may be catching swordfish incidentally. It is currently difficult to separate squid trawl vessels from other vessels in some databases because the required HMS permits are identical to those issued to longline vessels and other vessels. A removal of HMS permit requirements for *Illex* squid trawl vessels would exacerbate this situation. Furthermore, it would hinder NMFS' efforts to improve outreach and communications with this small, but important, HMS constituency. Because Alternative A3 would not provide additional information for fishery management purposes, it was not selected as the preferred alternative.

Alternative A4 would implement the same requirements for *Loligo* squid trawl vessels that NMFS selects for *Illex* squid trawl fishermen. This alternative is estimated to provide a moderate increase in annual revenues from between $355.32-$473.76 annually for 162 active *Loligo* squid trawl vessels that are not issued HMS permits (*i.e.*, 180 active Loligo vessels minus 18 active Illex/Loligo vessels). In aggregate, the total amount of additional annual income that could be realized under this alternative by all 162 active *Loligo* squid trawl vessels ranges from $57,562-$76,749, depending upon the number of small and large active *Loligo* squid trawl vessels. This alternative would convert dead swordfish discards into landings and could provide minor economic benefits. However, the incidental catch of swordfish in squid trawls is much higher in the *Illex* squid trawl fishery than in the *Loligo* squid trawl fishery. This is because the *Loligo* fishery operates inshore during summer months whereas the *Illex* fishery operates in the offshore mid-Atlantic canyons during the summer where swordfish are more prevalent - temporally and spatially, the two fisheries are different. Because individual *Loligo* squid trawl vessels have much lower swordfish catch and discard rates than *Illex* squid trawl vessels, this alternative was not selected.

For the second issue, under the No Action alternative, B1, the retention of smoothhound sharks would be prohibited by trawl vessels without the additional regulatory action that is

proposed in this rulemaking after smoothhound sharks are fully incorporated into the HMS management unit. Therefore Alternative B1 would have moderate direct short-term and long-term negative social and economic impacts. Based on VTR data from 2000-2009, an average of 145,088 lbs dressed weight dw of smoothhound sharks were caught in trawl gear, retained, and likely sold per year. Using an average ex-vessel price of $0.29 for smoothhound shark meat, $2.02 for smoothhound shark fins, and assuming a fin-to-carcass ratio of twelve percent (per the 2010 Shark Conservation Act, Public Law 111-348), total revenues from smoothhound sharks caught in trawl gear averages $68,968 per year (129,543 lbs * $0.29 + 15,545 * $2.02). In aggregate, under Alternative B1, in 2012 trawl fishermen could collectively lose $68,968 per year across up to 266 vessels. Individually, each vessel could realize approximately $259 annually in lost revenue under the no action alternative. Because some trawl vessels incidentally capture smoothhound sharks during normal trawl fishing operations, prohibiting the retention of incidentally-caught smoothhounds would contribute to regulatory discards and economic waste. This alternative is not preferred it is not consistent with NMFS' intent in Amendment 3 to the Consolidated HMS FMP to minimize changes to the smoothhound shark fishery and allow for some level of incidental trawl landings.

Alternative B2, the preferred alternative, would allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 25 percent of the total catch, by weight. When compared to the No Action alternative, Alternative B2 would have moderate direct short-term and long-term positive social and economic impacts. Currently, some trawl fishermen supplement fishing revenue with smoothhound shark products. Under the No Action alternative, they would no longer be able to do so. Under Alternative B2, however, they would continue to be allowed to retain and sell incidentally caught smoothhound sharks. Calculating the exact level of revenue that would continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternative B2 would continue to allow approximately 89 percent of historical smoothhound trawl trips (Table 10), fishermen stand to experience moderate beneficial social and economic impacts. This alternative is preferred because it maintains 89 percent of historical smoothhound shark trawl trips, consistent with NMFS' intent to minimize changes to the smoothhound fishery, but implements a reasonable upper threshold on trawl landings to ensure that it remains an incidental fishery.

Alternative B3 would allow for the retention of smoothhound sharks caught incidentally in trawl gear, in an amount not to exceed 50 percent of the total catch, by weight. When compared to the No Action alternative, Alternative B3 would have moderate direct short-term and long-term positive social and economic impacts. Currently, some trawl fishermen supplement fishing revenue with smoothhound shark products. Under the No Action alternative, they would no longer be able to do so when smoothhound sharks are fully incorporated into the HMS management unit. Under Alternative B3, however, they would continue to be allowed to retain and sell incidentally-caught smoothhound sharks. Calculating the exact level of revenue that would continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternative B3 would continue to allow approximately 97 percent of the historical smoothhound trawl trips (Table 10),

fishermen stand to experience moderate beneficial social and economic impacts. This alternative is not preferred because allowing a trawl fishing trip to retain up to 50 percent smoothhound sharks would be less effective at ensuring that the trawl fishery remains incidental, consistent with NMFS' intent to minimize changes to the fishery.

In summary, Alternative A2 (preferred alternative) will have minor direct short-term positive economic impacts. It is estimated to allow 13 active Illex squid trawl vessels to retain and sell from 13-14 swordfish per vessel per year that they would otherwise be required to discard, assuming that historical fishing effort and discard rates remain constant. In aggregate, Alternative A2 could produce between $50,041- $54,007 annually in additional revenue amongst all 13 active *Illex/Loligo* squid trawl vessels. Similarly, Alternative B2 (preferred alternative) will have minor direct short-term positive economic impacts. Trawl vessels will continue to be allowed to retain and sell incidentally caught smoothhound sharks. Calculating the exact level of revenue that would continue to be earned through smoothhound shark sales by trawl fishermen is difficult due to incomplete reporting and data. However, based upon the average annual total smoothhound shark trawl revenue estimate of $68,968, and the fact that Alternative B2 will continue to allow approximately 89 percent of historical smoothhound trawl trips (Table 10), fishermen stand to experience moderate positive social and economic impacts.

Section 7.0 List of Preparers

The development of this rulemaking involved input from many people within NMFS, NMFS contractors, and input from constituent groups including the HMS AP. Staff from the HMS Management Division, in alphabetical order, who worked on this document include:

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The development of this document also involved considerable input from other staff members and Offices within and outside of NOAA including, but not limited to:

- Mid-Atlantic Fishery Management Council (Jason Didden);
- Other Divisions within the Office of Sustainable Fisheries (Emily Menashes);
- Northeast Regional Office, Permit Office of Protected Resources (Hannah Goodale and Ted Hawes);
- Office of Law Enforcement General Counsel (Meggan Engelke-Ros and Frank Sprtel)
- NMFS General Counsel (Katherine Renshaw);
- NMFS NEPA (Steve Leathery); and
- PPI/NOAA NEPA (Steve Kokkinakas).

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APPENDIX A

Response to Comments

During the proposed rule stage, NMFS received seven written comments from non-governmental organizations, fishermen, dealers, and other interested parties. NMFS also heard numerous comments from constituents in attendance at the five public hearings. A summary of the major comments received on the proposed rule during the public comment period is shown below with NMFS' responses. All written comments submitted during the comment period can be found at http://www.regulations.gov/ by searching for RIN 0648-BA45.

Issue A - Squid Trawl/Swordfish Comments

Comment 1: NMFS should implement preferred Alternative A2 because it will improve data collection. Regulatory dead discards of swordfish contribute to scientific uncertainty. Swordfish are incidentally-caught in the *Illex* squid trawl fishery, so those fish should be counted. NMFS will gain ecological benefits associated with obtaining more reliable data.

Response: NMFS agrees. NMFS is implementing preferred Alternative A2 to improve data collection. Swordfish discard estimates are currently required to be reported in the Northeast Fishing Vessel Trip Report (VTR). Allowing for the limited retention of swordfish by all vessels issued *Illex* squid moratorium permits will require that those fish be sold to a permitted swordfish dealer who must submit bi-weekly dealer reports. Bi-weekly swordfish dealer reports will provide more precise landing weights than those currently obtained from VTR discard estimates. Also, establishing a new Incidental HMS Squid Trawl Permit will enable NMFS to place observers on those vessels to obtain additional catch and effort data specific to HMS in the future, if necessary.

Comment 2: NMFS should implement preferred Alternative A2 because it will provide economic benefits by reducing dead discards of swordfish and converting them into landings. It is painful for so many *Illex* squid trawl vessels to discard incidentally-caught dead swordfish just because they do not have the correct HMS permits. The swordfish stock is fully rebuilt, so there is potential for more landings. The positive economic impacts to an individual vessel would be helpful. Preferred Alternative A2 would also be a great benefit to New Jersey ports, especially Cape May, where many *Illex* vessels unload.

Response: NMFS agrees. Alternative A2, the final action, is estimated to result in moderate economic benefits ranging from $3,849-$4,145 annually for individual active *Illex* squid trawl vessels. These estimates are based upon historical observer data that indicates an average of 1.2-3.3 swordfish discards per *Illex* trip. For trips that land the maximum of 15 swordfish, the additional ex-vessel revenue associated with those landings could be approximately $4,441 per *Illex* trip. However, because *Illex* fishery encounters with swordfish are primarily concentrated in July and August, and relatively few vessels actively participate in the fishery, NMFS does not anticipate that a large number of squid trawl trips will land the maximum allowable limit. This final rule will ameliorate economic waste by allowing swordfish that are incidentally-caught while trawling for *Illex* squid to be retained and sold, rather than discarded dead. Fishing ports in Rhode Island and New Jersey are expected to be positively

impacted by this rule because these states historically account for over 90 percent of *Illex* squid landings.

Comment 3: NMFS should not implement Alternatives A2 – A4 because the squid trawl fishery could become a directed swordfish fishery in the future due the value of swordfish. Allowing all *Illex* squid trawl vessels to retain up to 15 swordfish per trip will create an incentive for those vessels to target swordfish.

Response: NMFS disagrees. The current HMS regulations specify that a vessel is considered to be in the squid trawl fishery when squid constitutes not less than 75 percent of the total fish on board and when trawl gear is the only gear on board. This means that a vessel would have to land at least 5,000 lb. of squid to retain approximately 15 average-sized (112 lb.) swordfish. Given that the *Illex* quota has held steady since 2000 at 24,000 mt for the entire fishery, during which landings have been averaging about 11,800 mt annually, individual vessel landings of 5,000 lb of squid are highly unusual. NMFS intends to monitor the fishery to ensure that the 15-fish retention limit is appropriate and consistent with the goal of maintaining the incidental nature of swordfish catches by squid trawl vessels.

Comment 4: Due to a variety of economic factors like fuel costs, effort in many trawl fisheries has declined. If squid trawl fisheries are allowed to retain swordfish, fishing trips could become more profitable which could encourage fishermen, who are not currently fishing, to fish. Because of the likelihood of increased trawl fishing effort, NMFS has incorrectly determined that "the action will not be reasonably expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat (EFH)" and "that the action will not reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species." Therefore, the draft Finding of No Significant Impact (FONSI) is incorrect. There will be a significant impact from this action and NMFS should prepare both an Environmental Impact Statement (EIS) and a Biological Opinion (BiOp).

Response: NMFS disagrees. The *Illex* squid fishery is managed by the Mid-Atlantic Fishery Management Council (MAFMC) under the Atlantic Mackerel, Squids, and Butterfish Fishery Management Plan (MSB FMP). The MAFMC annually recommends an Acceptable Biological Catch (ABC) and a Domestic Annual Harvest (DAH) level. NMFS is required to close the directed *Illex* squid fishery when 95 percent of the DAH is achieved. Therefore, *Illex* squid fishing effort is effectively capped at a scientifically-determined upper quota limit. Because an EIS has been prepared for the MSB FMP, a BiOp has been developed for the fishery, and the MSB FMP has been determined to comply with the Magnuson-Stevens Act and its National Standards, any level of legal *Illex* squid fishing effort below 95 percent of the DAH has already been analyzed. The *Illex* squid fishery has been landing an average of 59 percent (range: 38-77 percent) of the ABC since 2005, so it is possible that squid trawl fishing effort could increase. However, an increase would not be solely because of this final HMS rule. Squid trawl vessels tend to be specialized and are designed to capture small pelagic species such as squid, mackerel, and butterfish. The primary factors influencing effort in this fishery are ex-vessel prices of those species, seasonal availability, and the amount of fixed gear in the water column from other fisheries. Although landings by value per individual moratorium-permitted vessel have fluctuated from 2002 to 2006, the vast majority of *Illex* landings (96 percent) during this

period came from only 22 distinct vessels. The additional revenue associated the sale of incidentally-caught swordfish for a period of approximately 2-3 months ($3,849-$4,145 annually) is not expected to offset the startup costs associated with this fishery or provide sufficient incentive for large numbers of currently inactive *Illex* squid vessels to reactivate. If some squid vessels do reactivate or increase their fishing effort, the fishery as a whole would continue to be limited by the ABC and DAH specified annually under the MSB FMP.

Comment 5: NMFS should implement Alternative A4, which would establish either a new permit or an exemption for *Loligo* squid moratorium permit holders to retain swordfish. NMFS should allow for the retention of swordfish by both *Illex* and *Loligo* squid moratorium permit holders.

Response: As explained in the Environmental Assessment, swordfish discards are much higher in the Illex squid trawl fishery than in the *Loligo* fishery. Based upon Northeast Fisheries Science Center (NEFSC) observer data, the average number of swordfish discards per *Illex* tow equals 0.11 (105 total discards/976 total tows = 0.11 discards/tow), and the average number of swordfish discards per tow in the *Loligo* fishery equals 0.01 (36 total discards/4,697 total tows = 0.01). In other words, swordfish discards are approximately ten times higher in the *Illex* squid trawl fishery. This is because the *Loligo* fishery primarily operates inshore during summer months whereas the *Illex* fishery operates in the offshore Mid-Atlantic canyons during the summer where swordfish are more prevalent. Also, 75 out of 76 *Illex* squid moratorium permit holders have been issued a *Loligo* squid moratorium permit, so some of the swordfish discards in the *Loligo* fishery could be from these vessels. The data clearly indicate that the highest level of swordfish discards occurs in the *Illex* squid fishery. Therefore, this final rule implements Alternative A2, which establishes a new HMS permit for *Illex* squid moratorium permit holders to retain up to 15 incidentally-caught swordfish per trip.

Comment 6: NMFS should not have any restrictions on the number of swordfish allowed to be kept by squid trawl vessels, provided that all of the fish are accurately counted. Squid trawl vessels should be allowed to keep everything they catch, especially if the United States is not catching its ICCAT-recommended swordfish quota. A 15-fish limit could be restrictive. There may be instances when that limit is exceeded. There is also the potential for "high-grading" under a 15-fish limit, where fishermen discard all but the largest fish. Large freezer boats would especially benefit from a higher incidental swordfish trip limit. If the 15-fish limit is too restrictive and dead discards still occur, there should be a regulatory mechanism to quickly increase the limit.

Response: NMFS disagrees. The incidental swordfish retention limit for squid trawl vessels was increased from five to 15 swordfish in 2007 (72 FR 31688, June 7, 2007). It was determined that 15 swordfish was an appropriate limit for the vast majority of squid trawl trips. Since the limit was increased in 2007, NMFS has not received any comments from active squid trawl vessel operators indicating that the current limit is too restrictive, and additional analysis prepared for this rulemaking indicates an average range of 1.2-3.3 swordfish discards per *Illex* squid trip, with some trips catching more and others less. The purpose of this rulemaking is to modify the permitting requirements for squid trawl vessels and not to reconsider the current squid trawl incidental retention limit. Should the limit need to be revised, either lower or higher

due to targeted fishing or continued discards, respectively, NMFS could reconsider the issue in a future rulemaking.

Comment 7: NMFS should authorize trawl gear for swordfish.

Response: Trawl gear is not authorized for the retention of any HMS. Because swordfish have historically been captured incidentally while trawling for squid, NMFS created a small allowance for some HMS-permitted squid trawl vessels to retain swordfish. However, many squid trawl vessel owners did not qualify for, or obtain, the required HMS permits. This final rule creates a new Incidental HMS Squid Trawl permit which will be available to all *Illex* squid moratorium permit holders to retain incidentally-caught swordfish, provided that squid constitute not less than 75 percent of the catch on board and trawl is the only commercial fishing gear on board. Authorizing trawl gear for HMS species, beyond allowing for limited incidental capture, is beyond the scope of this rulemaking and would require an Amendment to the HMS FMP and significant additional analysis.

Comment 8: NMFS should clarify whether the permit proposed in Alternative A2 will be available to all *Illex* permitted vessels or only to active *Illex* vessels, and whether there will be any other qualification criteria for obtaining the permit.

Response: As indicated in the response to Comment 7, the new Incidental HMS Squid Trawl permit will be available to all vessels issued a valid *Illex* squid moratorium permit, provided that all other requisite permit qualification criteria are met (reporting requirements, complete application, etc.) .

Comment 9: NMFS should clarify whether squid trawl vessels will need to have at least 75 percent *Illex* squid on board, or just squid, to be considered in the squid trawl fishery.

Response: A vessel is considered to be in the squid trawl fishery when it has no commercial fishing gear other than trawls on board and when squid constitute not less than 75 percent by weight of the total fish on board or offloaded from the vessel. The squid do not have to be exclusively *Illex* squid.

Comment 10: NMFS should clarify whether the HMS "permit triple pack" will be required for *Loligo* squid moratorium permit holders to retain swordfish if Alternative A2 is implemented.

Response: The HMS "permit triple pack" will no longer be applicable for vessels that are participating in the squid trawl fishery upon the effective date of this final rule. After that date, the only permit that will allow any squid trawl vessels, *Illex* or *Loligo*, to retain swordfish will be the Incidental HMS Squid Trawl permit, which is available only to vessels issued a valid *Illex* squid moratorium permit.

Comment 11: NMFS should clarify whether *Illex* squid moratorium permit holders will have to surrender their HMS "permit triple pack" if a new Incidental HMS Squid Trawl permit is implemented under Alternative A2.

Response: As described in the response to Comment 10, the only permit that will allow for the retention of swordfish by squid trawl vessels will be the Incidental HMS Squid Trawl permit upon the effective date of this final rule. NMFS has determined that approximately five squid trawl vessels are currently issued the HMS "permit triple-pack." These permit holders may either transfer their HMS "permit triple pack" to another vessel, or let their swordfish and shark permits expire and then terminate one year after the expiration date. Atlantic Tunas Longline permits do not terminate one year after the expiration date. Vessel owners also have the option of maintaining their HMS "permit triple pack" through annual renewal. The permits do not have to be surrendered.

Comment 12: NMFS should allow incidental squid permit holders to retain swordfish rather than just *Illex* squid moratorium permit holders.

Response: NMFS disagrees. The vast majority of *Illex* squid landings come from vessels an *Illex* squid moratorium permit (99 percent on average from 2002-2006). Most swordfish discards occur during *Illex* squid fishing. Thus, *Illex* squid moratorium permit holders are more likely to capture swordfish than incidental squid permit holders, and NMFS is restricting qualification for the Incidental HMS Squid Trawl permit to *Illex* moratorium vessels.

Comment 13: NMFS should clarify whether *Illex* squid moratorium permit holders issued an Incidental HMS squid trawl permit will have to report their swordfish separately in the HMS logbook or whether they could report their swordfish in the Northeast Vessel Trip Report (VTR) logbook.

Response: Illex squid moratorium permit holders issued an Incidental HMS Squid Trawl permit must report their swordfish in the Northeast VTR logbook. NMFS could also select Incidental HMS Squid Trawl permit holders to report their catch in the HMS logbook, but that is not being considered at this time. If NMFS decides in the future to require those permit holders to report in the HMS logbook, NMFS would notify individuals of that requirement and provide instructions on how to comply with the requirement. NMFS reminds fishermen that swordfish may only be sold to dealers issued a valid Swordfish Dealer permit.

Comment 14: NMFS should carefully monitor the swordfish fishery if Alternative A2 is implemented to make sure its assumption of no expected changes in fishing effort is correct.

Response: NMFS agrees. The Agency intends to monitor the squid trawl fishery and periodically report on it in the annual HMS Stock Assessment and Fishery Evaluation (SAFE) Report. The information may include, but is not limited to, the number of squid trawl vessels landing swordfish and the amount of swordfish being landed by squid trawl vessels.

Comment 15: NMFS should clarify whether squid trawl vessels will continue to be allowed to fish in the pelagic longline (PLL) closed areas if Alternative A2 is implemented.

Response: Yes. Squid trawl vessels issued an Incidental HMS Squid Trawl permit will continue to be allowed to fish in the PLL closed areas, as they may currently do. However, the

Illex squid trawl fishery generally does not occur in PLL closed areas, including the East Florida Coast, DeSoto Canyon, and Charleston Bump PLL closed areas. There could potentially be some overlap with the one-month Northeastern U.S. PLL closure, but the incidental catch of BFT and other HMS by squid trawl vessels is very low and retention is prohibited.

Issue B - Smoothhound Shark Trawl Comments

Comment 16: NMFS should allow Atlantic trawl fishermen to retain smoothhound sharks to reduce regulatory discards.

Response: NMFS agrees. Allowing trawl fishermen to retain incidentally-caught smoothhound sharks will reduce regulatory discards of these species and maintain the historic nature of the Atlantic trawl fishery. Based on catch and landings data over the past ten years, trawl fishermen rarely target smoothhound sharks. Those that are retained are caught incidentally while fishing for other species such as *Loligo* squid, summer flounder, scup, and whiting. Consistent with the intent of Amendment 3 to the 2006 Consolidated HMS FMP to minimize changes to the smoothhound shark fishery Alternative B2 is NMFS's preferred alternative to address the retention of smoothhound sharks caught incidentally in trawl gear.

Comment 17: A smoothhound shark retention limit of 25 percent of the total catch, by weight, is too restrictive and will not effectively reduce regulatory discards.

Response: NMFS disagrees. Implementing any retention limit could potentially create regulatory discards. However, a retention limit of 25 percent smoothhound sharks, by weight, was specifically chosen to minimize regulatory discards while ensuring that the trawl fishery for smoothhound sharks remains incidental. This limit incorporates 89 percent of the trips that have occurred over the last ten years, and precludes only 11 percent of trips with high smoothhound shark retained catch. Because the retention limit incorporates a very large proportion of historical trips (89 percent), NMFS believes the alternative is appropriate. It achieves a balance between minimizing changes to the smoothhound shark fishery while preserving the incidental nature of the trawl fishery.

Comment 18: A smoothhound shark retention limit equivalent to 25 percent of the total catch, by weight, is too high and will encourage directed trawl fishing effort on smoothhound sharks.

Response: NMFS disagrees. Although a 25 percent retention limit incorporates the vast majority of historical trawl trips, it is not high enough to encourage a directed fishery. Smoothhound sharks have been unregulated since the fishery developed in the mid-1990s. Catch and landings data from the past ten years indicate that, even when unmanaged, a directed trawl fishery for smoothhound sharks has not developed. NMFS does not believe that implementing a retention limit for smoothhound sharks caught in trawl gear will encourage a directed fishery.

Comment 19: The proposed smoothhound shark retention limit could alter commercial trawl fishing effort or behavior.

Response: NMFS disagrees. Even while the fishery has been unregulated, trawl fishermen have rarely targeted smoothhound sharks. Because smoothhound sharks are caught and retained incidentally when fishing for other species, it is not likely that trawl fishermen will change their fishing effort or behavior to catch smoothhound sharks solely because of the implementation of a retention limit.

Comment 20: Implementing a percentage-based retention limit will be difficult to comply with since it will require that both the smoothhound shark portion of the catch and the total catch be weighed. Obtaining at-sea weights is very difficult so it will be difficult to definitively calculate the percent of catch while at sea. Enforcement action could only occur at the dock. Many comments recommended that a single total allowable weight of smoothhound sharks should be used as the retention limit. The Mid-Atlantic Fishery Management Council encouraged NMFS to explore a 5,000 lb trip limit as an alternative to the 25-percent retention limit.

Response: This comment was expressed by several constituents. Although NMFS did not include an alternative for an absolute weight retention limit in the proposed rule, the Agency did perform additional analyses pursuant to this comment for the final rule to determine the feasibility of this recommendation. The analysis was based upon the preferred alternative (i.e., a 25 percent smoothhound shark retention limit relative to total catch). The next step was to determine an absolute weight that is equivalent to the 25 percent retention limit. To calculate an absolute weight equivalent, NMFS analyzed VTR data from trawl trips that caught smoothhound sharks between 2000 and 2009. As expected, the vast majority of trawl trips had a very low total weight of smoothhound sharks which is indicative of an incidental fishery. However, there was very little correlation between percent catch and weight. This is likely due to the wide range in hold capacities of vessels that retain smoothhound sharks caught in trawl gear. Once the smoothhound trawl trips were plotted, NMFS investigated several options to find an equivalent weight, including the use of "best fit" trend lines and finding a retention weight that incorporates the same proportion of trips as the preferred alternative (89 percent of trips). Due to the wide range of weights, NMFS was not able to determine a useable and robust retention limit equivalent to 25 percent catch. Furthermore, the two methods found equivalent retention limits that ranged from 145 lbs-900 lbs; both of which are substantially lower than the MAFMC's suggestion, and too low and variable to maintain the historical nature of the trawl fishery. Through this analysis, NMFS determined that an absolute weight retention limit would not prevent directed effort by smaller trawl boats with low catch levels and could be overly restrictive for larger vessels. Thus, NMFS is implementing Alternative B2 which provides a "sliding scale" in the form of a percentage and allows trawl vessels of all sizes to retain incidentally-caught smoothhound sharks while also preventing all trawl vessels from directing effort on smoothhound sharks. This approach is consistent with other HMS incidental trawl retention limits, including swordfish. With regards to compliance, trawl fishermen are encouraged to maintain an ongoing tally during fishing operations to ensure that their smoothhound shark catch is not excessive. Because trawls are being managed as an incidental gear, trawl fishermen are discouraged from actively targeting smoothhound sharks. NMFS agrees that at-sea enforcement of the 25% retention limit will be difficult in some cases but disagrees that it is impossible in all cases. As the commenter notes, the retention limit may also be enforced dockside during offloading.

Comment 21: Trawl gear, like gillnet gear, should be an authorized gear in the smoothhound shark fishery and fishermen should be allowed to direct effort on the species.

Response: As discussed in the response to Comment 7, trawl gear is not authorized for any HMS. However, because smoothhound sharks have historically been captured incidentally while trawling for squid, summer flounder, scup, whiting, and other species, NMFS is implementing a small allowance for trawl vessels to retain incidentally-caught smoothhound sharks similar to the small allowance allowed for swordfish. This allowance is intended to maintain the historical nature of incidental catches of smoothhound sharks in the Atlantic trawl fisheries.

Comment 22: A smoothhound shark stock assessment should be a priority due to the unknown status of these species.

Response: A stock assessment is fundamental to ensure the effective management of a fishery. However, stock assessments require a variety of data inputs, including landings and discard data reported by fishermen. At this time, much of the data on smoothhound sharks are incomplete. One of the objectives of Amendment 3 is to collect data that could be used to inform future stock assessments.

Comment 23: NMFS received a comment requesting that trawl fishermen that catch smoothhound sharks should not have to fill out a separate logbook.

Response: Under Alternative B2, the final action, trawl fishermen that retain incidentally-caught smoothhound sharks will be required to obtain an open access commercial smoothhound shark permit. Currently there is no reporting requirement associated with the permit. In the future, NMFS may decide that logbooks or other reporting mechanisms are appropriate. However, NMFS will not pursue this unless existing reporting methods prove to be inadequate, until NMFS understands the universe of permitted smoothhound shark fishermen, and until NMFS can determine the most appropriate mechanism for reporting, while minimizing duplication with current reporting requirements.

Comment 24: Smoothhound shark trawl landings should be deducted from the overall smoothhound shark quota and there should be no specific gear quota allocations.

Response: NMFS agrees. The smoothhound shark quota was developed in Amendment 3 to the Consolidated HMS FMP and will be implemented when other management measures for smoothhound sharks become effective in the future. All smoothhound shark landings will be counted against the quota, regardless of gear type.

Comment 25: NMFS received a comment indicating that the proposed action could increase trawl fishing effort and possibly result in increased impacts to essential fish habitat (EFH), the sea floor, and protected resources.

Response: This final rule will establish a retention limit for smoothhound sharks caught incidentally while fishing for other species with trawl gear. NMFS does not expect that trawl fishing effort will change because of this action. Although the vast majority of historical trawl trips that landed smoothhound sharks could still occur under Alternative B2, 11 percent of historical trips will likely be precluded. Therefore, any change in trawl fishing that could potentially occur as a result of this final action would tend to be in the direction of decreased fishing effort, due to the implementation of a limit on the amount of smoothhound sharks that can be retained by trawl vessels.

Comment 26: NMFS received a comment stating that the smoothhound shark retention limit will lead to regulatory discards and that more research should be performed to determine the proportion of smoothhound sharks that are alive at trawl haulback. This information could be used to develop regulations to require discarding of live individuals while allowing for the retention of dead smoothhound sharks. Another comment stated that only males should be allowed to be retained and that females should be released to allow for greater reproductive potential in the population.

Response: NMFS agrees that additional research would be helpful to fully characterize the incidental smoothhound shark fishery. Data collected from additional research could provide information regarding trawl gear mortality and smoothhound sex ratios. Once management measures are in place, including permitting, reporting, and observer requirements, NMFS will be able to collect this information and implement additional management measures, if necessary. Currently, however, the available information does not support live-release or sex-specific release requirements.

Comment 27: Allowing trawl fishermen to retain a limited amount of smoothhound sharks is not likely to impact the stock.

Response: NMFS agrees. Although a formal stock assessment has not been performed, catch rates and levels have stayed reasonably consistent over the past ten years. There is no indication that the smoothhound shark stock cannot support current harvest levels. This final action will not increase trawl fishing effort levels or rates. It implements a management measure that will keep trawl fishing effort approximately at current levels.

Comment 28: Several commenters stated that while the ecological impacts are negligible, the economic benefits could be large for many trawl fishermen.

Response: NMFS does not expect that trawl fishing effort levels or rates will change as a result of this final rule. As such, no new direct, indirect, or cumulative ecological impacts are expected. However, continuing to allow trawl fishermen to retain and sell incidentally-caught smoothhound sharks, rather than prohibiting trawl landings, will maintain some revenue from the species. The allowance to retain and sell a limited number of smoothhound sharks is expected to maintain revenues at levels just below the ten-year average of $68,968 annually across the entire trawl fishery.

Comment 29: NMFS received a comment disagreeing with the statement in the economic impact analysis that businesses supporting trawl fisheries do not rely on smoothhound shark landings, especially as the statement applies to Ocean City, MD.

Response: Smoothhound sharks are overwhelmingly caught and retained incidentally in Atlantic trawl fisheries while fishing for other species. They are not the primary reason for fishermen to embark on a trawl trip. NMFS is establishing a trawl retention limit that will allow 89 percent of historical trips that landed smoothhound sharks to continue to occur. Because the retention of trawl-caught smoothhound sharks will continue to be allowed at historical levels, businesses supporting trawl trips are not likely to be affected by this rulemaking. If, after the fishery is better characterized through mandatory permitting, reporting, and observer coverage, it is determined that smoothhound sharks caught in trawl gear have a greater indirect economic impact, the economic analyses will be updated.

Comment 30: NMFS received several comments asking how the prohibition on shark finning, the 2010 Shark Conservation Act, and the fins-attached requirement implemented through the final rule for Amendment 3 to the 2006 HMS FMP would impact this rulemaking. Comments ranged from support for a fins-attached requirement in the smoothhound shark fishery, to a modification of the 5-percent fin-to-carcass ratio, to opposition to a fins-attached requirement due to efficiency and meat quality reductions. Additionally, NMFS received suggestions regarding how the 2010 Shark Conservation Act should be implemented in Atlantic trawl fisheries.

Response: The 2010 Shark Conservation Act was signed into law on January 4, 2011. This Act, among other things, prohibits the removal of fins from sharks in the U.S. EEZ. The Act also includes a separate provision addressing the smoothhound shark fishery. NMFS is currently preparing a proposed rule to implement the 2010 Shark Conservation Act and will consider these comments in that rulemaking. This final rule, however, does not address the landing condition of any shark species aboard a vessel or when landed and, therefore, these comments are outside the scope of this rulemaking.

Comment 31: NMFS received a comment requesting that the Agency not move forward with this rule until after the 2010 Shark Conservation Act is implemented.

Response: NMFS disagrees. The 2010 Shark Conservation Act addresses the condition of sharks aboard a vessel or when landed. Under this final rule, NMFS is providing for the limited retention of smoothhound sharks caught incidentally in trawl gear to maintain the historical nature of the trawl fishery and to minimize changes, consistent with the intent of Amendment 3 to the HMS FMP. Thus, the final action in this rule does not address the condition of sharks aboard a vessel or when landed. The 2010 Shark Conservation Act will be implemented in a separate rulemaking.

Comment 32: Some commenters disagreed with the Draft Finding of No Significant Impact (FONSI) assertion that the action is unlikely to jeopardize the sustainability of any non-target species. The commenters indicated that because this rule could lead to an at-sea processing allowance, enforcement will be complicated and will result in fishermen finning other

shark species. The sustainability of other shark species would be in jeopardy due to potential at-sea processing allowances.

Response: The prevention of shark finning is an important objective for NMFS. As noted in Comment 30, NMFS is preparing a proposed rule to implement the 2010 Shark Conservation Act. Within the context of this final rule, the action to establish a retention limit for smoothhound sharks in Atlantic trawl fisheries is not likely to jeopardize the sustainability of any non-target shark species. This action is not expected to alter trawl fishing effort levels and, therefore, no new impacts to non-target shark species are expected.

Comment 33: NMFS received a comment stating that the Draft FONSI is erroneous because smoothhound shark issues became controversial after the 2010 Shark Conservation Act became law. Therefore, an environmental impact statement (EIS) should have been prepared rather than an environmental assessment (EA).

Response: The Draft FONSI considered 16 criteria in making a determination of no significant impact. Each criterion is relevant to making a determination and has been considered individually, as well as in combination with the others. The significance of this action was analyzed based on the NAO 216-6 criteria and the President's Council on Environmental Quality (CEQ) context and intensity criteria, including the eighth criterion, "To what degree are the effects on the quality of the human environment expected to be highly controversial?" NMFS notes that interest in both the swordfish and smoothhound shark portions of the proposed rule was low during previous outreach efforts. NMFS recognizes that the visibility of, and interest in, the smoothhound shark fishery may have increased with passage of the 2010 Shark Conservation Act. However, such increased interest is not enough to make the proposed action controversial, for the purpose of NEPA. The term "controversial" does not refer to the mere existence of opposition to, or interest in a proposed action; rather "controversial" refers to cases where a substantial dispute exists as to the size, nature, or effect of the major federal action. Such substantial dispute does not exist here. Moreover, as discussed above, any heightened interest in or controversy surrounding the 2010 Shark Conservation Act is unrelated to implementing a limited smoothhound retention limit in Atlantic trawl fisheries. As such, controversy resulting from the legislation does not impact NMFS' finding of no significant impact. NMFS has determined that the FONSI was accurate and warranted, per NOAA NEPA guidance, an EA is the appropriate level of analysis for the current final rule rather than an EIS.

Comment 34: NMFS received a comment indicating that the rule will have implications for the entire Atlantic and Gulf of Mexico, but the EA only focuses upon the mid-Atlantic region.

Response: The vast majority of trawl trips that catch smoothhound sharks have historically occurred in the mid-Atlantic region. As such, the characterization of the fishery focused upon this area. It is not presently possible for NMFS to speculate what the smoothhound shark trawl fishery may look like in areas where the fishery could expand. If the incidental smoothhound shark trawl fishery begins to expand outside of the mid-Atlantic region, NMFS will conduct additional analyses to characterize that fishery and develop new management measures, if necessary.

Comment 35: NMFS received a comment that by not authorizing trawl gear, the Agency is attempting to circumvent ESA requirements to prepare a Biological Opinion (BiOp). The commenter stated that if NMFS intends to allow trawl gear to catch smoothhound sharks, the Agency should prepare a new BiOp for the trawl fishery.

Response: NMFS disagrees. BiOps document whether a federal activity is likely to jeopardize the continued existence of an ESA-listed species or result in the destruction or adverse modification of a species critical habitat. Typically, a BiOp is prepared for each directed fishery and can contain requirements to mitigate or prevent impacts to endangered species or critical habitat. It is not common for a BiOp to be prepared for an incidental fishery because the fishing activities have already been assessed under the directed fishery's BiOp. In the case of smoothhound sharks and trawl gear, the directed trawl fisheries each have BiOps that have assessed the fishing activity and possibly required mitigation measures. For example, when smoothhounds sharks are caught incidentally in trawl gear, they are most often caught in the directed fisheries for *Loligo* squid, summer flounder, scup, croaker, silver hake (whiting), and skate. The *Loligo* squid fishery was analyzed in the 2010 Mackerel Squid and Butterfish BiOp. (http://www.nero.noaa.gov/prot_res/section7/NMFS-signedBOs/SMB%20BIOP%202010.pdf). The summer flounder and scup fisheries were analyzed in the 2010 Summer Flounder, Scup, and Black Sea Bass BiOp (http://www.nero.noaa.gov/prot_res/section7/NMFS-signedBOs/FLS_SCP_BSB%20BIOP%202010.pdf). The silver hake fishery was analyzed in the 2010 Northeast Multispecies BiOp (http://www.nero.noaa.gov/prot_res/section7/NMFS-signedBOs/MULTISPECIES%20BIOP%202010.pdf). The skate fishery was analyzed in the 2010 Northeast Skate Complex BiOp (http://www.nero.noaa.gov/prot_res/section7/NMFS-signedBOs/SKATE%20BIOP%202010.pdf). Since the directed trawl fisheries that incidentally catch smoothhound sharks have already been analyzed under the directed fishery's BiOps, it would be duplicative and unnecessary to reinitiate ESA consultation for the incidental smoothhound shark trawl fishery.