

# **FINAL**

ENVIRONMENTAL ASSESSMENT

REGULATORY IMPACT REVIEW

AND

FINAL REGULATORY FLEXIBILITY ACT ANALYSIS

FOR A

FINAL RULE

TO IMPLEMENT MANAGEMENT MEASURES TO FACILITATE THE ABILITY OF U.S.  
VESSELS TO FULLY HARVEST THE DOMESTIC SWORDFISH QUOTA

May 2007

United States Department of Commerce  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Office of Sustainable Fisheries  
Highly Migratory Species (HMS) Management Division  
1315 East-West Highway  
Silver Spring, Maryland 20910

**Final Rule to Revise Swordfish Retention Limits and Modify HMS Limited Access Vessel Upgrading Restrictions to Facilitate the Ability of U.S. Vessels to Fully Harvest the Domestic Swordfish Quota Recommended by the International Commission for the Conservation of Atlantic Tunas (ICCAT)**

**Framework Adjustment to the Consolidated Atlantic Highly Migratory Species Fishery Management Plan**

- Actions:** This action would revise North Atlantic swordfish retention limits and modify the current vessel upgrading restrictions on vessels issued certain limited access HMS permits. The purpose is to provide additional opportunities for U.S. vessels to fully harvest the ICCAT recommended domestic swordfish quota, in recognition of the improved stock status of North Atlantic swordfish.
- Type of Statement:** Final Environmental Assessment, Regulatory Impact Review, and Final Regulatory Flexibility Analysis
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- Abstract:** The U.S. North Atlantic swordfish quota allocation is derived from recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT), and is implemented under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and the Atlantic Tunas Convention Act (ATCA). For the past several years, the U.S. North Atlantic swordfish fishery has not fully harvested the available quota allocated by ICCAT. These final regulations will facilitate the ability of U.S. vessels to fully harvest the domestic swordfish quota by modifying swordfish retention limits and certain HMS limited access vessel upgrading restrictions. These actions are necessary to help revitalize the domestic swordfish fishery while continuing to minimize bycatch to the extent practicable, so that swordfish are harvested in a sustainable, yet economically viable, manner. Environmental impacts resulting from these actions are not expected to be significant.

**FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT  
FOR A FINAL RULE TO IMPLEMENT SWORDFISH MANAGEMENT MEASURES  
TO FACILITATE THE ABILITY OF U.S. VESSELS TO FULLY HARVEST THE  
ICCAT-RECOMMENDED DOMESTIC SWORDFISH QUOTA ALLOCATION**

National Marine Fisheries Service  
April 2007

The HMS Management Division of the Office of Sustainable Fisheries submits the attached Environmental Assessment (EA) for North Atlantic swordfish fisheries for Secretarial review under the procedures of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The final regulations will revise incidental and recreational retention limits for North Atlantic swordfish and modify certain HMS limited access vessel upgrading restrictions to facilitate the ability of U.S. vessels to fully harvest the domestic swordfish quota allocation, while continuing to minimize bycatch to the extent practicable, so that swordfish are harvested in a sustainable, yet economically viable, manner. This EA was developed as an integrated document that includes a Regulatory Impact Review (RIR) and the Final Regulatory Flexibility Analysis (FRFA). Copies of the EA, RIR, and FRFA are available from NMFS at the following address:

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This EA considers information contained in the Environmental Impact Statement (EIS) associated with the 2006 Consolidated Highly Migratory Species Fishery Management Plan (2006 FMP), and the EA prepared for the May 19, 2006, final rule (71 FR 29087) modifying the 2005 quotas for North and South Atlantic swordfish. All of the information used is herein incorporated by reference.

National Oceanic and Atmospheric Administration Administrative Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 indicates 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. These actions would increase incidental and recreational swordfish retention limits and modify certain HMS limited access vessel upgrading restrictions. In 2002, ICCAT established an overall total allowable catch (TAC) (14,000 mt ww) for the North Atlantic swordfish stock. This TAC was estimated to have greater than a 50 percent chance of rebuilding the stock to MSY by the end of 2009. That rebuilding goal has very nearly been achieved. The most recent North Atlantic swordfish stock assessment, conducted in October 2006 by the ICCAT Standing Committee on Research and Statistics (SCRS), estimated the biomass of North Atlantic swordfish at the beginning of 2006 ( $B_{2006}$ ) was at 99 percent of the biomass necessary to produce maximum sustainable yield ( $B_{msy}$ ). The 2005 fishing mortality rate ( $F_{2005}$ ) was estimated to be 0.86 times the fishing mortality rate at maximum sustainable yield ( $F_{msy}$ ). In other words, in 2006, the North Atlantic swordfish stock was almost fully rebuilt and fishing mortality was low. The final management measures are likely to increase domestic landings of swordfish, but the resultant landing levels are still expected to be below the U.S. ICCAT-recommended swordfish quota and within the overall North Atlantic swordfish TAC. Also, NMFS has implemented many restrictions on the pelagic longline fleet, the buoy gear fishery, and the recreational fishery over the past several years that are expected to continue to prevent overfishing of swordfish. Therefore, the final actions are not expected to jeopardize the sustainability of North or South Atlantic swordfish stocks.

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

No. The swordfish fishery has several management measures in place that will continue to control fishing effort and catch. For pelagic longline vessels, these include limited access permits, time/area closures, circle hook requirements, bait restrictions, careful release protocols, VMS requirements, quotas, retention limits, minimum size limits, landing restrictions, a commercial billfish possession prohibition, authorized gears, observer requirements, and dealer and vessel logbook reporting. For buoy gear vessels, these include limits on the number of allowable flotation devices, limitations on the allowable number of hooks per gear, gear monitoring requirements, and permit limitations. These restrictions have been effective at reducing bycatch and controlling overall fishing effort, both in terms of numbers of hooks fished and numbers of active PLL vessels. There is a possibility that fishing effort may modestly increase under this action, but any increase is likely to be mitigated by existing management measures and restrictive limits within each selected action. The final actions will increase opportunities for domestic vessels to harvest the U.S. swordfish quota, while continuing to conserve target, non-target and protected species.

3. Can the action be reasonably expected to allow 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. The final regulations will only impact certain HMS permitted commercial fishing vessels, and the recreational swordfish fishery. Pelagic longline gear, buoy gear, and recreational

swordfish gear are suspended in the water column and do not contact bottom substrate. The impact of swordfish fishing gear on EFH was most recently analyzed in the Consolidated HMS FMP (NMFS 2006), and the impacts on EFH were generally considered negligible, minimal, or low. Because the final actions are not expected to significantly change fishing practices or effort, this rule is not expected to change the impact of swordfish fishing gear on EFH. Because of the nature of these gears, it is also very unlikely that the habitat for any other target, or prey species, would be altered.

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

No. These actions could improve safety at sea by allowing certain HMS permit holders to make moderate upgrades to their vessels, and by allowing some commercial fishermen to land more swordfish. Like all offshore fisheries, swordfish fishing can be dangerous. Fishermen have mentioned that, due to decreasing profit margins, they may have to carry less crew or less experienced crew, or may not have the time or money to complete necessary maintenance tasks. By allowing for larger vessel upgrades and additional swordfish landings, it might become more feasible to carry additional crew, utilize larger vessels, and increase ex-vessel revenues. The selected recreational actions are not expected to impact public health or safety, although some commenters suggested that increasing recreational retention limits could impact seafood safety because recreational vessels do not have the capacity to properly ice and handle their catch. NMFS believes that recreational anglers typically keep amounts of fish that can be safely handled and eaten. Overall, safety factors were strongly considered in selecting the final actions. NMFS has concluded that this final action is not likely to adversely affect public health or safety at sea.

5. Can the action be reasonably expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat of these species?

No. NMFS does not expect the action to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat of these species. NMFS reinitiated a section 7 consultation on the PLL fishery in 2006. NMFS determined that continuing the PLL fishery during the reinitiation period would not result in jeopardy to leatherback or loggerhead sea turtles. Once the necessary information has been gathered, a determination will be made on whether the June 1, 2004 BiOp needs to be revised. The swordfish fishery has several management measures in place that will continue to control fishing effort and protected species bycatch. For PLL vessels, these include limited access permits, time/area closures, circle hook requirements, bait restrictions, careful release protocols, VMS requirements, quotas, retention limits, minimum size limits, landing restrictions, a commercial billfish possession prohibition, authorized gears, observer requirements, and dealer and vessel logbook reporting. Regulations restricting the buoy gear fishery include limits on the allowable number flotation devices, limitations on the allowable number of hooks per gear, gear monitoring requirements, and permit limitations. NMFS does not expect the final actions to jeopardize the sustainability of any protected species due to these existing management measures. They have been effective at reducing bycatch and controlling overall fishing effort, both in terms of numbers of hooks fished and numbers of active PLL vessels. The final recreational management measures are not expected to have an adverse effect on protected species, as the current per person limit will remain in effect. Only a small percentage of recreational trips currently land the three fish vessel

limit and, therefore, few would be expected to approach the revised retention limits. There is a possibility that fishing effort may increase under this action, but any increase is likely to be mitigated by existing management measures and limits within each selected action. The June 14, 2001, BiOp included the HMS recreational fishery and indicated that turtles have been known to be captured in rod and reel fisheries at relatively low rates. It concluded that continued operation of the hand gear and rod and reel fisheries in the Atlantic may adversely affect but are not likely to jeopardize the continued existence of the right whale, humpback, fin, or sperm whales, or Kemp's ridley, green, loggerhead, hawksbill, or leatherback sea turtles. The handline and rod and reel fisheries are listed as category III fisheries under the MMPA because of their low likelihood of interacting with marine mammals.

6. Can the action be expected to have a substantial impact on biodiversity and ecosystem function within the affected area (*e.g.*, benthic productivity, predator-prey relationships, etc.)?

No. This action is not expected to have a substantial impact on biodiversity and ecosystem function because most current commercial and recreational restrictions will remain in place. There is a possibility that fishing effort may modestly increase under this action, but substantial impacts on biodiversity and ecosystem function are not anticipated because any increase in fishing effort would largely be mitigated by existing management measures and limits within each of the selected actions. The swordfish fishery has several management measures in place that will continue to control fishing effort and non-target species bycatch. For PLL vessels, these include limited access permits, time/area closures, circle hook requirements, bait restrictions, careful release protocols, VMS requirements, quotas, retention limits, incidental catch limits, minimum size limits, landing restrictions, a commercial billfish possession prohibition, authorized gears, observer requirements, and dealer and vessel logbook reporting. Regulations restricting the buoy gear fishery include limits on the allowable number flotation devices, limitations on the allowable number of hooks per gear, gear monitoring requirements, and permit limitations. These measures have been effective at reducing bycatch and controlling overall fishing effort, both in terms of numbers of hooks fished and numbers of active PLL vessels.

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

No. NMFS does not expect significant social or economic impacts from increasing incidental and recreational swordfish retention limits, and modifying certain HMS limited access vessel upgrading restrictions. Therefore, no interrelated significant natural or physical environmental effects are expected. Some net positive economic and social impacts could occur, but they are not expected to be significant. Increasing incidental retention limits may enable some vessel operators to land swordfish that otherwise may have been discarded. HMS charter and headboat operators may benefit from an increased willingness-to-pay on behalf of recreational anglers taking additional for-hire trips. Finally, modifying certain HMS limited access vessel upgrading restrictions may provide some vessel owners with additional operational flexibility to increase the size of their vessels, based upon their unique business needs.

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

The effects on the quality of the human environment associated with this action are not expected to be highly controversial, because a significant change in fishing effort or fishing practices is not anticipated. The Consolidated HMS FMP and its associated Environmental Impact Statement fully described the impacts associated with the swordfish fishery. There may be some controversiality resulting from environmentalists and other interested parties that are opposed to any potential increase in fishing effort in principle. However, the North Atlantic swordfish stock is almost fully rebuilt. The final management measures are not expected to result in landings that will exceed the U.S. swordfish quota, or jeopardize stock rebuilding. Also, one of the objectives of this rulemaking is to demonstrate to the international community that conservation measures can occur simultaneously with an economically viable swordfish fishery. If successful, other countries might be more willing to adopt comparable conservation measures such as circle hooks and careful handling and release techniques. This could ultimately yield long-term benefits to populations of sea turtles, billfish, and other protected or overfished species throughout the Atlantic basin, and possibly alleviate some concerns about increased fishing effort.

9. Can the action be reasonably 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 is not 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. Swordfish fishing occurs primarily in offshore areas, and within the upper oceanic water column. Therefore, none of the unique areas listed occur within the action area.

10. To what degree are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

These actions are not likely to be highly uncertain or involve unique or unknown risks, however there is a degree of uncertainty involved regarding the exact impacts. This is because the decision to upgrade a fishing vessel is personal. Some vessel owners may choose to upgrade their vessels, whereas others may not. Therefore, it is not possible to precisely quantify the overall impact that the upgrading modifications will have on the environment. The overall impact depends upon the decisions of hundreds of business owners. Because NMFS is retaining most of the current fishery management measures that have been in place for several years (*i.e.*, limited access permits, time/area closures, circle hook requirements, bait restrictions, careful release protocols, VMS requirements, quotas, retention limits, minimum size limits, landing restrictions, commercial billfish possession prohibition, authorized gears, and dealer and vessel logbook reporting), the action is not expected to result in significant impacts. Additionally, the number of active vessels in the PLL fleet has declined by nearly 50 percent since 1999. Therefore, modifying swordfish retention limits and upgrading provisions is not likely to increase fishing effort to levels that approach historic levels. Because most fishery management measures will remain in place, and the number of active PLL vessels is not expected to significantly increase, any uncertainty regarding the impacts of the final measures, or their significance, is greatly reduced.

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

No. The final measures are related to, and consistent with, the management recommendations derived from the 2002 ICCAT meeting regarding North and South Atlantic swordfish stocks, and the 2006 ICCAT TAC recommendation for North Atlantic swordfish. The final management measures are also related to other measures implemented through the 1999 HMS FMP, the August 2000 bycatch and time/area rule, the July 2004 rule implementing measures required of the PLL Biological Opinion, and the 2006 Consolidated HMS FMP. The cumulative impacts associated with these actions were recently analyzed in the Environmental Impact Statement prepared for the 2006 Consolidated HMS FMP. The intent of this final action is to provide additional opportunities for domestic vessels to harvest the U.S. swordfish quota, while continuing to conserve target, non-target, and protected species. This action, when considered in combination with previous and reasonably foreseeable actions, is not expected to result in cumulatively significant impacts.

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 final actions are not expected to adversely affect, or cause loss or destruction of, any of the locations listed. Swordfish fishing occurs mostly in offshore waters, within the oceanic water column. There are no sites listed, or eligible for listing, in the National Register of Historic Places within the action area. The North Atlantic swordfish stock is almost fully rebuilt, and the final action is not expected to cause the loss of this resource.

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

No. These final actions will modify swordfish retention limits and vessel upgrading restrictions. These actions are not expected to result in the introduction or spread of any non-indigenous species.

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

No. This action balances the economic needs of the swordfish fishery with the conservation needs of the environment. It provides a short-term remedy to address persistent underharvests of the domestic swordfish quota, while longer-term measures may be considered and additional information can be obtained. Although swordfish landings and fishing effort may modestly increase, landings are expected to remain well within the ICCAT-recommended U.S. swordfish quota, and other management measures to mitigate fishing effort will remain in effect. Balancing ecological needs with economic needs is an integral part of fishery management considerations, and is therefore not precedent setting. The decision to implement the final management measures is based upon the best available scientific information and the analysis contained within the Environmental Assessment. It is not based on principle about a future consideration, because each action is evaluated upon its own merits.

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

No. NMFS has determined that these final regulations would be implemented in a manner consistent to the maximum extent practicable with the enforceable policies of those coastal states on the Atlantic including the Gulf of Mexico and Caribbean that have approved coastal zone management programs. Letters were sent to the relevant states asking for their concurrence and whether this rule is consistent with their respective coastal zone management programs. Connecticut, Delaware, Florida, Georgia, Louisiana, Mississippi, New Hampshire, New Jersey, North Carolina, Rhode Island, and Virginia concur with the Agency's consistency determination. The remaining states have provided no response; therefore, consistency has been presumed.

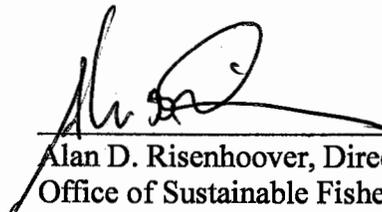
16. Can the action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

No. Cumulative adverse effects on the target or non-target species are not expected because the pelagic longline fleet and the buoy gear fishery have several management measures in place that will continue to control fishing effort and bycatch. A large increase in additional fishing effort is not anticipated. Overall, a domestic quota controls catches in the swordfish fishery. For the PLL fishery, restrictions include limited access permits, time/area closures, circle hook requirements, bait restrictions, careful release protocols, VMS requirements, quotas, retention limits, minimum size limits, landing restrictions, commercial billfish possession prohibition, authorized gears, and dealer and vessel logbook reporting. The buoy gear fishery is governed by gear and permit restrictions, and other measures listed earlier.

#### DETERMINATION

In view of the information presented in this document and the analysis contained in the attached Environmental Assessment for a final rule to revise North Atlantic swordfish retention limits and modify HMS limited access vessel upgrading restrictions to facilitate the ability of U.S. vessels to fully harvest the ICCAT-recommended domestic swordfish quota, in recognition of the improved stock status of North Atlantic swordfish, it is hereby determined that this action will not significantly impact the quality of the human environment as described above and in the Environmental Assessment. In addition, all impacts to potentially affected areas, including national, regional and local, have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

Approved:

  
Alan D. Risenhoover, Director  
Office of Sustainable Fisheries

MAY 14 2007

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Date

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## **1.0 PURPOSE AND NEED FOR ACTION**

### **1.1. Management History**

The National Marine Fisheries Service (NMFS) under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and the Atlantic Tunas Convention Act (ATCA) manages the U.S. fishery for North and South Atlantic swordfish. Under ATCA, the United States is obligated to implement recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT), including Atlantic swordfish quotas. ICCAT is an inter-governmental fishery organization, currently consisting of 43 contracting parties, which is responsible for the conservation of tunas and tuna-like species (including swordfish) in the Atlantic Ocean and its adjacent seas. ICCAT meetings are held annually. In addition to being consistent with ICCAT recommendations, swordfish management measures must also comply with the Magnuson-Stevens Act, the Endangered Species Act (ESA), and other domestic laws. For additional information about the management history of the North and South Atlantic swordfish stocks, please refer to Section 1.2 below (Need for Action and Objectives) and the Final Consolidated Atlantic Highly Migratory Species Fishery Management Plan (Consolidated HMS FMP) (NMFS, 2006).

### **1.2. Need for Action and Objectives**

The Magnuson-Stevens Act specifies that NMFS shall provide a reasonable opportunity for U.S. vessels to harvest the quota allocation for species, such as swordfish, that are managed under an international agreement. Therefore, this action is necessary to implement management measures that will provide additional short-term opportunities for U.S. vessels to more fully harvest the ICCAT-recommended domestic swordfish quota, in recognition of the improved stock status of North Atlantic swordfish. The final management measures will increase swordfish incidental and recreational retention limits, and modify certain HMS limited access vessel upgrading restrictions, consistent with the 2006 Consolidated HMS FMP, Magnuson-Stevens Act, ATCA, and other domestic regulations.

In 2001, ICCAT established its “Criteria for the Allocation of Fishing Possibilities” (ICCAT Recommendation 01-25) that included 15 separate criteria to be considered when allocating quota within the ICCAT framework. The first two criteria relate to the past and present fishing activity of qualifying participants. These criteria specify that “historical catches” and “the interests, fishing patterns and fishing practices” of qualifying participants are to be considered when making allocation recommendations. Other criteria, including conservation measures, economic importance of the fishery, geographical occurrence of the stock, compliance with ICCAT management measures, and dependence on the stocks, must also be considered when allocating quota.

In October 2006, the ICCAT Standing Committee on Research and Statistics (SCRS) conducted a stock assessment for North Atlantic swordfish. It indicated that North Atlantic swordfish biomass had improved, possibly due to strong recruitment in the late 1990’s combined with reductions in reported catch since then. The SCRS estimated the

biomass of North Atlantic swordfish at the beginning of 2006 ( $B_{2006}$ ) to be at 99 percent of the biomass necessary to produce maximum sustainable yield ( $B_{msy}$ ). The 2005 fishing mortality rate ( $F_{2005}$ ) was estimated to be 0.86 times the fishing mortality rate at maximum sustainable yield ( $F_{msy}$ ). In other words, in 2006, the North Atlantic swordfish stock is almost fully rebuilt and fishing mortality is low.

At its 2002 meeting, ICCAT established an annual Total Allowable Catch (TAC) for North Atlantic swordfish of 14,000 mt (ww) for the years 2003, 2004, and 2005 (ICCAT Recommendation 02-02). A 14,000 mt (ww) TAC was later established for 2006 (ICCAT Recommendation 04-02). 1,185 mt (ww) of the TAC was allocated to “other contracting parties and others,” with the remainder being distributed to the European Community (52.42 percent), United States (30.49 percent), Canada (10.52 percent), and Japan (6.57 percent), using the allocation criteria described above. This resulted in a baseline U.S. North Atlantic swordfish quota of 3,907 mt (ww) for the period 2004 – 2006. In November 2006, ICCAT reviewed swordfish management measures and quota allocations at its annual meeting. Again, for 2007 and 2008, ICCAT recommended a baseline U.S. North Atlantic swordfish quota of 3,907 mt (ww). The next swordfish quota allocation will be discussed at the 2008 ICCAT meeting. ICCAT may consider, among other factors, historical catches and fishing patterns when discussing the allocation of the North Atlantic swordfish TAC for 2009 and beyond.

U.S. North Atlantic swordfish catches, as reported to ICCAT, have declined by approximately 40 percent from 4,026 mt (ww) in 1995 to 2,424 mt (ww) in 2005<sup>1</sup>, although they have stabilized since 2001. As a percent of the ICCAT-recommended U.S. quota, the decline in U.S. North Atlantic swordfish landings is even more apparent. The United States has landed less than its ICCAT-recommended “baseline” and “adjusted” swordfish quota since 1997. Because landings below the baseline quota (an “underage”) in one year may be carried over to the subsequent year’s baseline quota, the “adjusted” U.S. North Atlantic swordfish quota has continued to increase. Based on reported landings to ICCAT, the United States went from exceeding its “baseline” quota in 1996 to landing only 29 percent of its “adjusted” quota in 2005. As indicated above, reported catches in 2005 were 2,424 mt (ww) versus a 2005 “adjusted” quota of 8,319 mt (ww). This trend is likely to continue in 2006 because the “adjusted” quota is significantly higher (9,803 mt (ww)). After completing the first half of the 2006 fishing year (June 1, 2006 - November 30, 2006), the United States had landed approximately 913.7 mt (ww) of North Atlantic swordfish, which equates to 9.3 percent of the “adjusted” quota, or 23 percent of the annual “baseline” quota. For 2007 and 2008, the “baseline” U.S. swordfish quota is again 3,907 mt (ww). However, ICCAT has indicated that the maximum underage that a contracting party may carryover in any given year may not exceed 50 percent of the original quota. Therefore, the “adjusted” 2007 North Atlantic quota will likely be much lower than previous “adjusted” quotas. NMFS has not yet published the 2007 swordfish specifications with the “adjusted” quota.

NMFS has implemented several important management measures in recent years, primarily to reduce the bycatch of undersized swordfish, non-target species, and

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<sup>1</sup> 2005 catch statistic also includes dead discards.

protected species. These actions have been effective at reducing bycatch, but they may also have had the unintended consequence of contributing to persistent underharvests of the U.S. swordfish quota, and a precipitous decline in the number of active PLL vessels (“active” is defined as vessels that report landings in the HMS logbook). Some of these measures include: Year-round closures in the Desoto Canyon and East Florida Coast areas; seasonal closures in the Charleston Bump and Northeastern areas; limited access vessel permits; mandatory utilization of Vessel Monitoring Systems (VMS); mandatory circle hook and bait requirements; possession and utilization of release and disentanglement gear; utilization of non-stainless hooks; and a live bait prohibition in the Gulf of Mexico (GOM). In this action, NMFS has selected final alternatives to modify other management measures (swordfish retention limits and vessel upgrading provisions) to increase domestic swordfish landings and revenues, but retain the most critical bycatch reduction provisions. This action will demonstrate that the United States is committed to revitalizing its historical swordfish fishery, and help to maintain or increase the historical U.S. North Atlantic swordfish quota allocation.

Among other requirements, the Magnuson-Stevens Act specifies that NMFS shall provide a “reasonable opportunity” for U.S. vessels to harvest HMS quotas that are managed under international agreements, such as ICCAT. For many years, the United States has been at the international forefront in implementing measures that have effectively reduced bycatch in pelagic longline fisheries. U.S. fishing operations have shouldered the economic impacts associated with these conservation measures without fully realizing the benefits that can be achieved from a nearly rebuilt swordfish stock and continued low bycatch rates. For these reasons, it is necessary to improve the ability of U.S. vessels to fully harvest the ICCAT-recommended domestic swordfish quota. The anticipated near-term increase in fishing effort for North Atlantic swordfish, which are at 99 percent of Bmsy, is expected to be mitigated by management measures that will continue to conserve undersized swordfish, non-target, and protected species. The objective of this rulemaking, therefore, is to demonstrate in the short-term that conservation measures can occur simultaneously with an economically viable PLL fishery. This will ultimately yield long-term benefits to the domestic swordfish fishery, and possibly to populations of sea turtles, billfish, and other protected or overfished species throughout the Atlantic basin, if foreign nations adopt conservation measures similar to those required of the U.S. fishery.

In this EA/RIR/FRFA, NMFS considers the biological, social, and economic impacts of modifying the current swordfish retention limits and HMS limited access vessel upgrading restrictions. On November 28, 2006, NMFS published a proposed rule (71 FR 68784) for this rulemaking. The public comment period for the proposed rule was open from November 28, 2006, to January 31, 2007. During that time, NMFS held seven public hearings. The Agency received approximately 33 e-mailed comments, 17 letters submitted via mail, fax, or hand-delivery, and numerous verbal comments. Some of the comments directly discussed swordfish retention limits and vessel upgrading restrictions, while many others addressed other swordfish management measures. A summary of the comments received and NMFS responses are provided in the final rule and in Appendix A. No changes were made in the final rule as a result of the comments. The final

management measures have been selected due to consistency with the objectives of the 2006 Consolidated HMS FMP, the Magnuson-Stevens Act, ATCA, and other domestic regulations.

This action is intended to provide a short-term remedy to assist in increasing domestic swordfish landings, with only minor environmental impacts. A comprehensive longer-term strategy may be necessary to address more far-reaching obstacles that may have contributed to persistent underharvests of the ICCAT recommended, U.S. North Atlantic swordfish quota. Therefore, additional swordfish management measures will be considered in the future. A precautionary, yet realistic and effective, approach is needed to significantly increase U.S. swordfish landings without undoing the gains that have resulted in a nearly rebuilt swordfish stock, and to prevent unacceptable increases in bycatch from occurring. For this reason, it is possible that implementation of future, long-term measures could require the development of an FMP amendment.

## **2.0 SUMMARY OF THE ALTERNATIVES**

This section provides a summary and a basis for the alternatives considered in this rulemaking. The ecological, economic, and social impacts of these alternatives are discussed in later chapters. The alternatives are divided into two topics; swordfish retention limits, and HMS limited access vessel upgrading restrictions. Within these two topics, the alternatives are not mutually exclusive and may be combined with other alternatives. The objective is to select one or more alternatives within each topic to facilitate the ability of U.S. vessels to fully harvest the domestic swordfish quota allocation, in recognition of the improved stock status of North Atlantic swordfish. The bases for the selected alternatives is to provide a reasonable opportunity for U.S. vessels to harvest the ICCAT-recommended U.S. swordfish quota allocation, as specified in the Magnuson-Stevens Act, while maintaining compliance with other provisions in the Magnuson-Stevens Act, the Endangered Species Act (ESA), and other domestic laws. The No Action alternatives address the impacts if no regulatory changes were implemented.

### **Topic 1 – North Atlantic Swordfish Retention Limits**

Alternative 1a: No Action

This alternative would maintain the status quo. Vessels issued valid Incidental swordfish limited access permits, other than those in the squid trawl fishery, would continue to be allowed to retain, possess or land no more than two swordfish per vessel per trip in or from the Atlantic Ocean north of 5° N. lat. Vessels issued valid Incidental swordfish limited access permits and participating in the squid trawl fishery would continue to be allowed to retain, possess, or land no more than five swordfish per trip from the same area. HMS Angling and Charter/headboat (CHB) vessel permit holders would continue to be allowed to retain one North Atlantic swordfish per person, up to three per vessel per trip.

Alternative 1b: Remove the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits, except that vessels issued valid Incidental swordfish permits and participating in the squid trawl fishery would be increased to ten, until 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota is projected to be landed, after which the Incidental swordfish retention limit will revert back to two swordfish per trip, and five swordfish per trip for squid trawl vessels, for the remainder of the semi-annual period

This alternative would remove the current two-fish incidental swordfish retention limit for vessels issued valid Incidental swordfish limited access permits, except that the incidental limit would be increased to ten for vessels issued valid Incidental swordfish limited access permits which participate in the squid trawl fishery, until the date at which 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota is projected to be landed. From the projected date until the end of the semi-annual period, the incidental swordfish retention limit would revert back to two swordfish per vessel per trip, and five swordfish per trip for squid trawl vessels. For the period of time during which there is no incidental retention limit, landings from swordfish Incidental permit holders would be counted against the semi-annual directed fishery quota. This alternative would allow vessels issued valid Incidental swordfish limited access permits, other than those participating in the squid trawl fishery, to direct effort on swordfish, but would provide a buffer to help ensure that the adjusted semi-annual domestic North Atlantic swordfish quota is not exceeded. NMFS would monitor North Atlantic swordfish landings, publish a notice in the *Federal Register*, and notify permit holders at least two weeks prior to the projected date at which the incidental swordfish retention limit would revert back to two swordfish per vessel per trip, and five swordfish for vessels issued valid Incidental swordfish limited access permits and participating in the squid trawl fishery.

Alternative 1c: *Increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 30 fish per vessel per trip, and increase the limit for vessels issued valid Incidental swordfish limited access permits which participate in the squid trawl fishery to 15 swordfish per vessel per trip – Preferred Alternative*

This alternative would increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 30 fish per vessel per trip, and increase the limit for vessels issued valid Incidental swordfish limited access permits that participate in the squid trawl fishery to 15 fish per vessel per trip. This alternative would allow vessels issued valid Incidental swordfish limited access permits to land incidentally caught swordfish that might otherwise be discarded under the current two-fish limit. It would retain the incidental characteristic associated with the permit, but potentially provide additional economic opportunities and reduce regulatory discards associated with the current retention limit. Landings by Incidental permit holders would continue to be counted against the Incidental North Atlantic swordfish quota. Therefore, if this

alternative were selected, NMFS may need to increase the Incidental swordfish quota allocation from the current 300 mt (dw) allocation to accommodate increased landings under this category. Any adjustment to the Incidental swordfish category quota, if necessary, would be performed in conjunction with the implementation of future swordfish quotas.

Alternative 1d: Increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 15 fish per vessel per trip, and increase the limit for vessels issued valid Incidental swordfish limited access permits which participate in the squid trawl fishery to ten swordfish per vessel per trip

This alternative would increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 15 fish per vessel per trip, and increase the limit for vessels issued valid Incidental swordfish limited access permits and participating in the squid trawl fishery to ten fish per vessel per trip. This alternative would allow Incidental swordfish permit holders to land incidentally caught swordfish that might otherwise be discarded under the current two-fish limit. It would retain the incidental characteristic associated with the permit, but potentially provide additional economic opportunities and reduce regulatory discards associated with the current retention limit. Landings by Incidental permit holders would continue to be counted against the Incidental North Atlantic swordfish quota. Therefore, if this alternative were selected, NMFS may need to increase the Incidental swordfish quota allocation to accommodate increased landings under this category. Any adjustment to the Incidental swordfish category quota, if necessary, would be performed in conjunction with the implementation of future swordfish quotas.

Alternative 1e: *Implement a North Atlantic swordfish retention limit for HMS Charter/headboat (CHB) vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels – Preferred Alternative*

This alternative would implement a swordfish retention limit for HMS CHB vessels of one fish per paying passenger (*i.e.*, not including the captain or crew), up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels. This alternative would maintain the current recreational limit of one swordfish per person, but increase the allowable upper retention limit (from three fish per vessel). Therefore, a charter vessel possessing an HMS CHB permit with six paying passengers onboard would be limited to possessing or retaining no more than six swordfish. An HMS headboat vessel with 15 paying passengers onboard would be limited to possessing or retaining no more than 15 swordfish. However, if either of these types of vessels had, for example, five paying passengers onboard, the vessel would be limited to possessing or retaining no more than five swordfish.

Alternative 1f: *Implement a North Atlantic swordfish recreational retention limit for HMS Angling category vessels of one fish per person per trip, up to four swordfish per vessel per trip – Preferred Alternative*

This alternative would implement a swordfish retention limit for HMS Angling category vessels of one fish per person, up to four swordfish per vessel per trip. This alternative maintains the current recreational limit of one swordfish per person, but increases the upper retention limit from three fish to four fish per vessel per trip. Thus, a vessel possessing an HMS Angling category permit with three persons onboard would be limited to possessing or retaining no more than three swordfish, a vessel with four persons onboard would be limited to no more than four swordfish, and a vessel with five or more persons onboard would also be limited to no more than four swordfish.

#### Alternatives Considered but not Further Analyzed

Alternative 1g: Allow HMS General category tuna vessels to retain and sell North Atlantic swordfish

This alternative would allow General category tuna vessels to retain and sell North Atlantic swordfish. This alternative is not further analyzed because, currently, the commercial swordfish fishery is a limited access fishery, whereas the General category tunas permit is not. At the present time, the Agency is concerned that an unrestricted expansion of the number of vessels that are eligible to sell swordfish could result in unanticipated short-term economic and ecological consequences. NMFS may consider modification of the current HMS permitting structure in its longer-term strategy to revitalize the swordfish fishery.

#### **Topic 2 – HMS Limited Access Vessel Upgrading Restrictions**

Alternative 2a: No Action

This alternative would maintain the status quo. Vessels possessing a limited access shark, limited access swordfish, or Atlantic tunas longline permit would continue to be subject to the current vessel upgrading and permit transfer upgrading restrictions. These restrictions specify that owners may upgrade vessels or transfer permits to another vessel only if the vessel upgrade or permit transfer does not result in an increase in horsepower (HP) of more than 20 percent, or an increase of more than 10 percent in length overall (LOA), gross registered tonnage (GRT), or net tonnage (NT) relative to the respective specifications of the first vessel issued the initial limited access permit (the baseline vessel). If any of the three vessel size specifications is increased, any increase in the other two must be performed at the same time. The regulations also specify that vessel horsepower and vessel size may be increased only once. However, an increase in vessel size may be performed separately from an increase in vessel horsepower. These regulations have been in effect since 1999 when HMS limited permits were first issued. The current HMS limited access vessel upgrading restrictions at 50 CFR Part 635 are

largely consistent with the current vessel upgrading restrictions at 50 CFR Part 648 for vessels issued Northeastern U.S. limited access fishery permits.

Alternative 2b: Waive HMS limited access vessel upgrading and permit transfer upgrading restrictions for all vessels that are authorized to fish with pelagic longline gear for swordfish and tunas for 10 years, after which a new vessel baseline will be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect

This alternative would remove, for a period of 10 years, the current vessel upgrading and permit transfer upgrading restrictions only for those vessels that are allowed to fish for swordfish and tunas with pelagic longline gear (*i.e.*, vessels that possess an Atlantic tunas longline permit, as well as limited access permits for swordfish and sharks). A period of ten years was selected for this alternative because it provides a realistic timeframe for owners to upgrade their vessels, and would accommodate a change in stock status if future management measures are deemed necessary. After 10 years (approximately 2017), a new vessel baseline would be established and the current upgrading and permit transfer upgrading restrictions would go back into effect. This alternative would allow owners of vessels that are authorized to fish with pelagic longline for swordfish and tunas (*i.e.*, vessels that possess an Atlantic tunas longline permit, as well as limited access permits for swordfish and sharks) to upgrade their vessels or to transfer permits without any upgrading restrictions for a 10-year period, according to their needs and abilities. After 10 years, vessels possessing all three permits (limited access shark, limited access swordfish, and Atlantic tunas longline permits) would again be subject to the current vessel upgrading and permit transfer restrictions which specify that owners may upgrade vessels or transfer permits to another vessel only if the vessel upgrade or permit transfer does not result in an increase in horsepower (HP) of more than 20 percent, or an increase of more than 10 percent in length overall (LOA), gross registered tonnage (GRT), or net tonnage (NT) relative to the newly-established baseline vessel.

Alternative 2c: Waive HMS limited access swordfish Handgear vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new baseline will be established and the 10% LOA, GRT, NT and 20% HP restrictions would go back into effect

This alternative would remove, for a period of 10 years, the current vessel upgrading and permit transfer upgrading restrictions only for vessels that have been issued HMS limited access swordfish Handgear permits. A period of ten years was selected for this alternative because it provides a realistic timeframe for owners to upgrade their vessels, and would accommodate a change in stock status if future management measures are deemed necessary. After 10 years (approximately 2017), a new vessel baseline would be established and the current vessel upgrading and permit transfer upgrading restrictions would go back into effect. This alternative would allow swordfish handgear vessel owners to upgrade their vessels or transfer permits without any upgrading restrictions for a 10-year period, according to their needs and abilities. After 10 years, vessels

possessing swordfish Handgear permits would again be subject to the current vessel upgrading restrictions which specify that owners may upgrade vessels or transfer permits to another vessel only if the vessel upgrade or permit transfer does not result in an increase in horsepower (HP) of more than 20 percent, or an increase of more than 10 percent in length overall (LOA), gross registered tonnage (GRT), or net tonnage (NT) relative to the respective specifications of the newly-established baseline vessel.

Alternative 2d: Waive all HMS limited access vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new vessel baseline will be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect.

This alternative would remove the current vessel upgrading and permit transfer upgrading restrictions for all vessels that have been issued an HMS limited access shark, swordfish or Atlantic Tunas longline permit. A period of ten years was selected for this alternative because it provides a realistic timeframe for owners to upgrade their vessels, and would accommodate a change in stock status if future management measures are deemed necessary. After 10 years (approximately 2017), a new vessel baseline would be established and the current vessel upgrading and permit transfer upgrading restrictions would go back into effect. This alternative would allow all HMS limited access permit holders to upgrade their vessels or transfer permits without any upgrading restrictions for a 10-year period, according to their needs and abilities. After 10 years, all HMS limited access vessels would again be subject to the current vessel upgrading restrictions which specify that owners may upgrade vessels or transfer permits to another vessel only if the vessel upgrade or permit transfer does not result in an increase in horsepower (HP) of more than 20 percent, or an increase of more than 10 percent in length overall (LOA), gross registered tonnage (GRT), or net tonnage (NT) relative to the respective specifications of the newly-established baseline vessel. If any of the three vessel size specifications is increased, any increase in the other two must be performed at the same time. The regulations that would go back into effect after 2017 also specify that vessel horsepower and vessel size may be increased only once. However, an increase in vessel size may be performed separately from an increase in vessel horsepower.

Alternative 2e: *Establish new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for HMS vessels that are authorized to fish with pelagic longline gear for swordfish and tunas, equivalent to 35 percent LOA, GRT, and NT, as measured relative to the baseline vessel specifications (i.e., the specifications of the vessel first issued an HMS limited access permit), remove HP upgrading and permit transfer upgrading restrictions for these vessels, and remove the “one time only” upgrading restriction for all HMS limited access vessels – Preferred Alternative*

This alternative would establish new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for vessels that are authorized to fish for HMS with pelagic longline gear (i.e., vessels that concurrently possess an Atlantic Tunas Longline

category permit, as well as Incidental or Directed limited access permits for swordfish and sharks), and remove HP upgrading and permit transfer upgrading restrictions for these vessels. The new restrictions would specify that owners may upgrade their vessels or transfer permits to another vessel only if the vessel upgrade or permit transfer does not result in an increase of more than 35 percent in length overall (LOA), gross registered tonnage (GRT), or net tonnage (NT) relative to the baseline vessel (*i.e.*, the vessel first issued an HMS limited access permit). Therefore, if a vessel has already been upgraded in LOA by 10 percent, any additional upgrade as a result of this rule could not exceed 25 percent. Under this alternative, there would be no restrictions on increases in vessel horsepower. In addition, this alternative has been modified to remove the restriction on all HMS limited access permit holders of only one upgrade, up to the maximum allowable size and horsepower. Under this alternative, all HMS limited access permit holders would be allowed unlimited incremental upgrades, up to the allowable maximums. Other associated upgrading restrictions would also be modified, including removal of the requirement that if any of the three vessel size specifications is increased, any increase in the other two must be performed at the same time. This preferred alternative would retain, and not modify, current size and HP upgrading restrictions for all other HMS limited access permitted vessels (including swordfish handgear; swordfish-only; and shark-only vessels).

### **3.0 DESCRIPTION OF AFFECTED ENVIRONMENT**

Detailed descriptions of the life histories and population status of the species managed by NMFS are presented in Section 3.2 of the 2006 SAFE Report Final, which is incorporated in the Consolidated HMS FMP (NMFS, 2006), and are not repeated here. Detailed information on catch and bycatch of HMS by fishery are also provided in Sections 3.4 and 3.8, respectively, of the 2006 SAFE Report in the Final Consolidated HMS FMP (NMFS, 2006), and are not repeated here. The “action area” consists of the pelagic environment of the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. These areas are described in the Consolidated HMS FMP (NMFS, 2006) in Section 3.3.2.1 (Atlantic Ocean); Section 3.3.2.2 (Gulf of Mexico); and, Section 3.3.2.3 (U.S. Caribbean).

#### **3.1. Status of the Stocks**

##### *North Atlantic Swordfish*

North Atlantic swordfish are considered overfished, but overfishing is not occurring. A 2006 stock assessment by the SCRS (SCRS, 2006) indicated that North Atlantic swordfish biomass had improved, possibly due to strong recruitment in the late 1990’s combined with reductions in reported catch since then. The SCRS estimated the biomass of North Atlantic swordfish at the beginning of 2006 ( $B_{2006}$ ) to be at 99 percent of the biomass necessary to produce maximum sustainable yield ( $B_{msy}$ ). The 2005 fishing mortality rate ( $F_{2005}$ ) was estimated to be 0.86 times the fishing mortality rate at maximum sustainable yield ( $F_{msy}$ ). In other words, in 2006, the North Atlantic swordfish stock is almost fully rebuilt and fishing mortality is low. Although there is some uncertainty with this conclusion, almost half of the current biomass estimates were greater than or equal to  $B_{msy}$ . The SCRS felt that if the current TAC management

strategy is maintained, the stock is likely to remain near the level that would produce MSY.

### *South Atlantic Swordfish*

The stock status of South Atlantic swordfish is considered to be good. The current estimated fishing mortality rate is likely below that which would produce MSY, and the current biomass is likely above that which would result from fishing at  $F_{msy}$  in the long term. The estimated MSY is 33 percent higher than current reported landings. While the SCRS believes the southern swordfish stock appears to be in a healthy condition at present, it is unclear if substantially higher catches than currently envisioned by ICCAT could be sustained in the long term, due to divergent views of stock status when using targeted and bycatch fisheries indicators in a simple production model.

### **3.2. Fishery Participants, Gear Types, and Affected Area**

Additional information about the operation of U.S. HMS fisheries can be found in the 2006 SAFE Report, which is incorporated in the Final Consolidated HMS FMP (NMFS, 2006). The Final Consolidated HMS FMP provides detailed information about the operation and management of the various commercial swordfish fisheries (pelagic longline, handgear, and other gears), and the recreational HMS fishery, including international and domestic management measures, and permitting and reporting requirements.

### **3.3. Habitat**

The 2006 SAFE Report included in the Final Consolidated HMS FMP address the habitat utilized by the various species targeted by the pelagic longline fishery. Typically, the fisheries targeting swordfish exist offshore in deeper waters within the water column, so there is no interaction with bottom substrate.

### **3.4. Protected Species**

For the most recent information on Biological Opinions (BiOps) for HMS fisheries, and specifically the pelagic longline swordfish fishery, please refer to Section 3.9.9.2 of the Final Consolidated HMS FMP (NMFS, 2006). The Final Consolidated HMS FMP also describes the Reasonable and Prudent Measures and Terms and Conditions implemented pursuant to the BiOps for sea turtles. Additionally, the Final Consolidated HMS FMP discusses marine mammal interactions with HMS fisheries and the impact of the Marine Mammal Protection Act (MMPA) on HMS management.

On December 22, 2006, the HMS Management Division requested reinitiation of the Endangered Species Act (ESA) section 7 consultation process for the PLL fishery. Results of the reinitiated section 7 consultation process have not been completed to date. However, NMFS has determined that the June 1, 2004 BiOp remains valid, and that continuing the PLL fishery during the reinitiation period will not result in jeopardy to

leatherback or loggerhead sea turtles. Once the necessary information has been gathered a determination will be made on whether the current BiOp needs to be revised.

#### **4.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES CONSIDERED**

NMFS, under the authority of the Magnuson-Stevens Act and the Atlantic Tunas Convention Act (ATCA), manages the U.S. fishery for North and South Atlantic swordfish. Under ATCA, the United States is obligated to implement recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT), including Atlantic swordfish quotas. The preferred alternatives discussed below would comply with ICCAT swordfish Total Allowable Catch (TAC) recommendations adopted to achieve by 2009, with greater than 50 percent probability, stock and catch levels consistent with the objectives of the ICCAT Convention. In addition to being consistent with ICCAT recommendations, swordfish management measures must also comply with the Magnuson-Stevens Act, the Endangered Species Act (ESA), and other domestic laws.

The alternatives discussed below are intended to provide U.S. vessels with additional opportunities to harvest the U.S. North Atlantic swordfish quota allocation. The preferred alternatives are consistent with several management objectives contained in the 2006 Final Consolidated HMS FMP. Objective 5 specifies that NMFS should minimize, to the extent practicable, adverse social and economic impacts during the transition from overfished fisheries to healthy ones, consistent with other objectives. Objective 7 specifies that NMFS should manage HMS fisheries for continuing optimum yield so as to provide the greatest overall benefit to the Nation, particularly with respect to providing food production for commercial fisheries, enhancing recreational opportunities, preserving traditional fisheries to the extent practicable, and/or taking into account the protection of marine ecosystems. Finally, Objective 17 indicates that NMFS should create a management system to make fleet capacity commensurate with resource status so as to improve both economic efficiency and biological conservation, and provide access for traditional gears and fishermen, consistent with the other objectives of the FMP. It is within the spirit and intent of these HMS FMP management objectives, and the Magnuson-Stevens Act, that the following alternatives are being considered. The environmental and economic consequences of these alternatives are evaluated below.

##### **4.1. North Atlantic Swordfish Retention Limits**

As described in Section 2, the alternatives being considered for North Atlantic swordfish retention limits include:

- 1a No Action
- 1b Remove the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits, except that vessels issued valid Incidental swordfish permits which participate in the squid trawl fishery would be increased to ten, until 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota is projected to be landed, after which the Incidental

swordfish retention limit would revert back to two swordfish per trip, and five swordfish per trip for squid trawl vessels, for the remainder of the semi-annual period

- 1c *Increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 30 fish per vessel per trip, and increase the limit for vessels issued valid Incidental swordfish limited access permits which participate in the squid trawl fishery to 15 fish per vessel per trip – Preferred Alternative*
- 1d Increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 15 fish per vessel per trip, and increase the limit for vessels issued valid Incidental swordfish limited access permits which participate in the squid trawl fishery to ten fish per vessel per trip
- 1e *Implement a North Atlantic swordfish retention limit for HMS CHB vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels – Preferred Alternative*
- 1f *Implement a North Atlantic swordfish recreational retention limit for HMS Angling category vessels of one fish per person per trip, up to four swordfish per vessel per trip – Preferred Alternative*

### ***Ecological Impacts***

NMFS would be implementing all of the alternatives that are identified as preferred. The cumulative and combined impacts associated with implementing all of these preferred alternatives are described in Section 4.9 of this document.

Under Alternative 1a (No Action), NMFS would maintain the status quo. Incidental swordfish limited access permit holders with valid permits (*i.e.*, vessels that also possess a limited access shark permit and an Atlantic tunas longline permit), other than those in the squid trawl fishery, would continue to be allowed to retain, possess or land no more than two swordfish per trip in or from the Atlantic Ocean north of 5° N. lat. Vessels issued valid Incidental swordfish limited access permits and participating in the squid trawl fishery would continue to be allowed to retain, possess, or land no more than five swordfish per trip from the same area. HMS Angling and Charter/headboat (CHB) vessel permit holders would continue to be allowed to retain one North Atlantic swordfish per person, up to three per vessel per trip.

The No Action alternative is not expected to significantly change the current abundance of North Atlantic swordfish, domestic swordfish landings, swordfish discards, and current bycatch levels of protected and non-target species. When compared to the other alternatives which increase swordfish retention limits, the No Action alternative would likely result in the most rapid rate of continued stock growth. However, the current retention limits could also be contributing to discards of swordfish.

The ICCAT Standing Committee on Research and Statistics (SCRS) conducted a stock assessment for North Atlantic swordfish in October 2006. The 2006 assessment indicated that North Atlantic swordfish biomass has improved, possibly due to strong recruitment in the late 1990's combined with reductions in reported catch since then. The SCRS estimated the biomass of North Atlantic swordfish at the beginning of 2006 ( $B_{2006}$ ) to be at 99 percent of the biomass necessary to produce maximum sustainable yield ( $B_{msy}$ ). The 2005 fishing mortality rate ( $F_{2005}$ ) was estimated to be 0.86 times the fishing mortality rate at maximum sustainable yield ( $F_{msy}$ ). In other words, in 2006, the North Atlantic swordfish stock is almost fully rebuilt and fishing mortality is low. The No Action alternative would be consistent with the current rebuilding plan, and would likely keep the United States well within, or below, its ICCAT-recommended North Atlantic swordfish quota during the rebuilding period. Domestic swordfish landings would not be expected to change appreciably under this alternative.

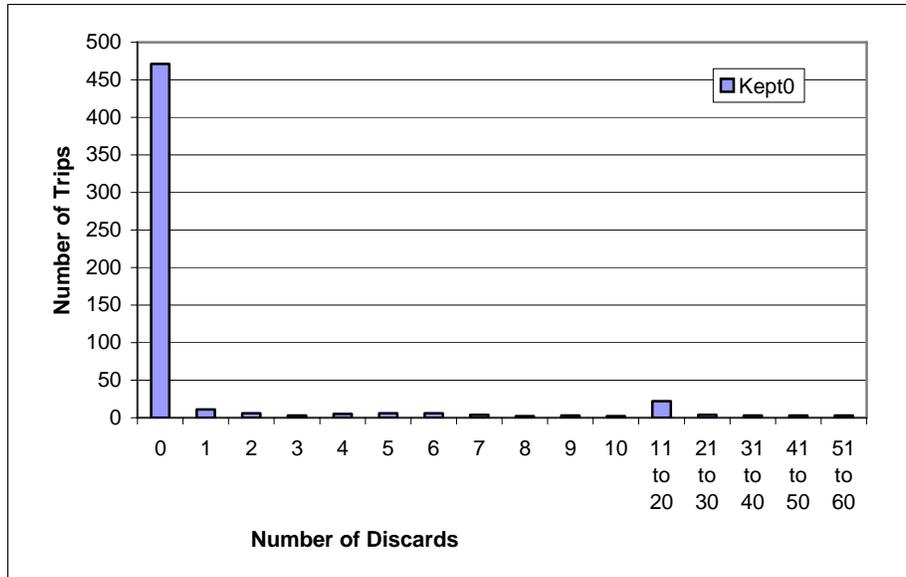
The No Action alternative is not expected to appreciably change current levels of PLL fishing effort, landings, and bycatch in HMS fisheries, of which all have generally declined in recent years. The 2006 Consolidated HMS FMP showed that North and South Atlantic swordfish, and bigeye, albacore, yellowfin, and skipjack (BAYS) tunas experienced sizeable reductions in landings from 1999 – 2004, with bluefin tuna (BFT) being the exception. These declines may be the cumulative result of many HMS management measures that have been implemented since 1999 including, but not limited to, limited access permits, quotas, minimum size restrictions, vessel monitoring system (VMS) requirements, gear restrictions (large circle hooks, gangion length specifications, non-stainless hooks, etc.), dealer and vessel logbook reporting, a live bait prohibition in the GOM, landing restrictions, and large closed areas for PLL and BLL gear. An analysis prepared for the 2006 Consolidated HMS FMP indicates that the PLL time/area closures have resulted in large declines in fishing effort and bycatch from the 1997 – 1999 period to the 2001 – 2003 period. Overall effort, expressed as the number of hooks set, declined by 15 percent between the two time periods. Declines in discards attributable to the closures are even more sizeable. For example, the overall number of reported discards of swordfish, bluefin tuna, bigeye tuna, pelagic sharks, blue marlin, white marlin, sailfish and spearfish have all declined by more than 30 percent. Discards of blue and white marlin declined by more than 50 percent, and sailfish discards declined by almost 75 percent. Also, the reported number of sea turtles caught and released declined by almost 28 percent, due to the time/area closures. In addition to the time/area closures, NMFS implemented mandatory circle hook requirements for all PLL vessels in 2004. The mandatory circle hook requirements were estimated to provide significant conservation benefits to sea turtles, including a 50 percent reduction in leatherback sea turtle interactions outside the Northeast Distant Gear Restricted Area (approximately the Grand Banks). Circle hooks also contribute to a reduction in post-hooking release mortality for sea turtles. For these reasons, the No Action alternative would be expected to continue having positive ecological impacts on undersized, target, non-target and protected species. However, several species including bluefin tuna, white marlin, blue marlin, sandbar sharks, and dusky sharks are still in need of rebuilding. In addition, bycatch and bycatch mortality of endangered leatherback and threatened loggerhead sea turtles in PLL fisheries remains a concern.

It is important to emphasize that all of the current management measures described above, which have produced positive ecological benefits under the No Action alternative, including time/area closures and circle hooks, would also remain in effect under each of the other alternatives discussed in this document. The remainder of this discussion on the No Action alternative focuses specifically on the impacts associated with discards under current HMS retention limits.

Current HMS regulations at 50 CFR 635.4(f)(4) state that “Unless the owner has been issued a swordfish handgear permit, a limited access permit for swordfish is valid only when the vessel has on board a valid limited access permit for shark and a valid Atlantic Tunas Longline category issued for such vessel.” Approximately 56 percent (48 vessels) of the 86 vessels issued Incidental swordfish limited access permits hold a “valid” swordfish permit because they also possess the necessary Atlantic Tunas Longline category permit and shark limited access permit (as of September 29, 2006). The remaining 39 vessels with Incidental swordfish limited access permits hold some combination of shark, king mackerel, Spanish mackerel, dolphin/wahoo, reef fish, and snapper/grouper permits. Thus, without the appropriate combination of HMS permits, the Incidental swordfish permits that these vessels have been issued are not valid.

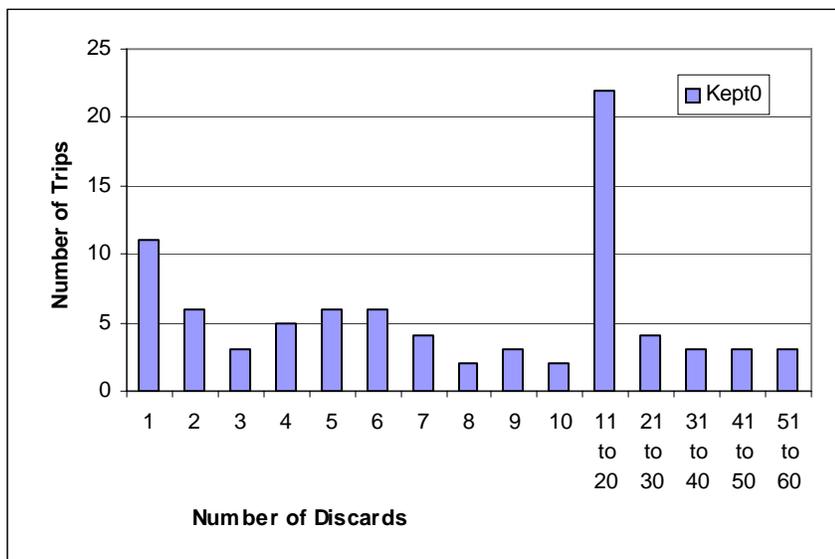
Under Alternative 1a (No Action), swordfish landings and swordfish discards by Incidental swordfish permit holders would likely remain similar to the patterns reported in recent years. From 2002 – 2005, there were a total of 865 trips reported from Incidental swordfish permit holders in the HMS logbook. The HMS logbook data indicates that the majority of these trips (54% or 471 trips) did not land any swordfish and did not report any swordfish discards. Overall, 703 trips (81%) reported no swordfish discards, and 554 trips (64%) reported no swordfish landings. In total, 162 trips out of 865 trips (19%) by Incidental swordfish permit holders reported discarding swordfish.

Figure 1 below indicates the number of swordfish discards reported by Incidental swordfish permit holders for the 554 trips in which no swordfish were reported as landed. The graph shows that 471 of these trips reported no discards. 15 percent of trips that did not land swordfish reported discards (83 trips).



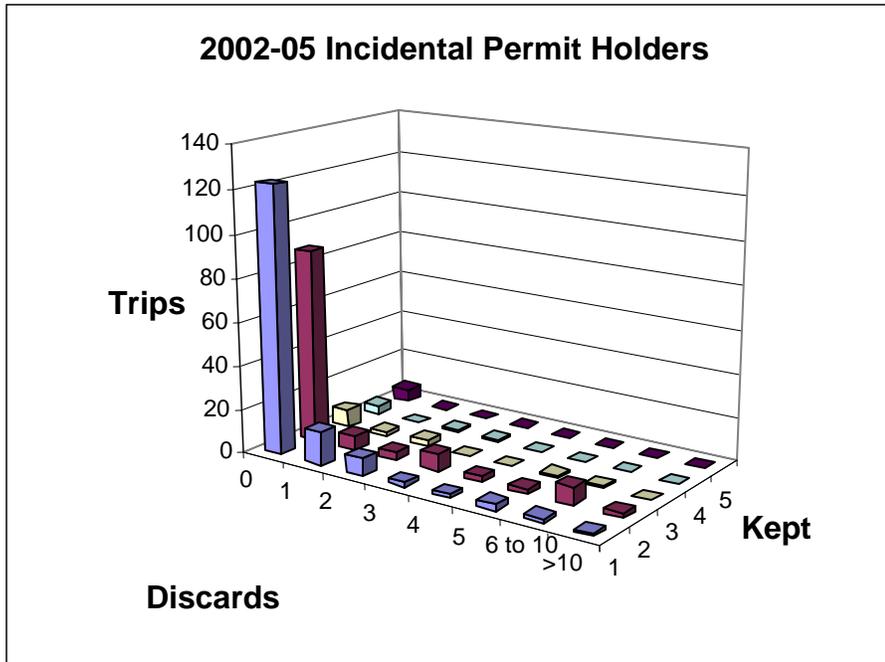
**Figure 1. Number of Incidental Trips and Number of Swordfish Discards for Trips Reporting No Swordfish Kept from 2002 – 2005.** Source: NMFS HMS Logbook.

Figure 2 below shows the same data as Figure 1, however the trips reporting no discards have been removed. This graph indicates that, of those trips in the HMS logbook, 2002 – 2005, 83 trips (15%) reported discards of swordfish but no landings. 48 trips reported from 1 – 10 discards, 22 trips reported from 11 – 20 discards, 4 trips reported from 21 – 30 discards, and 9 trips reported from 30 – 60 discards. The maximum number of reported discards was 52 swordfish.



**Figure 2. Number of Incidental Trips and Number of Swordfish Discards for Trips Reporting No Swordfish Kept from 2002 – 2005 (with trips reporting 0 discards removed).** Source: NMFS HMS Logbook.

Figure 3 below shows the numbers of Incidental swordfish trips from vessels reporting swordfish landings, along with the associated number of swordfish reported kept and discarded. It indicates that 281 trips (32%) reported landing one or two swordfish, while 30 trips (4%) reported landing more than three swordfish. Figure 3 further indicates that, among trips reporting swordfish landings, 233 trips out of 311 trips (75%) reported discarding no swordfish. The majority (68%) of Incidental trips landing swordfish kept 1-2 swordfish and reported no discards. Of the 25% of Incidental trips that landed swordfish and had reported discards, the maximum number of discards was 12 swordfish.



**Figure 3. Numbers of Incidental Trips from Vessels Reporting Landings Showing the Numbers of Reported Swordfish Kept and Discarded from 2002 – 2005.** Source: NMFS HMS Logbook.

With regards to vessels possessing valid Incidental swordfish permits and participating in the squid/mackerel/butterfish trawl fishery, an examination of the HMS logbook from 2002 – 2005 indicates that approximately 83 percent of these trips reported no swordfish discards. Out of 60 reported trips in the HMS logbook, 33 trips (55%) reported keeping one or two swordfish and no discards. 15 trips (25%) reported keeping between three to five swordfish and no discards. The highest level of reported discards in the squid trawl fishery was two swordfish. Table 1 indicates the amount of swordfish landed by U.S. squid trawl vessels from 1998 – 2004. This table shows that squid trawl vessels landed, on average, 6.3 mt (ww) of swordfish per year or approximately two percent of the 300 mt Incidental swordfish quota, and less than one percent of the overall U.S. swordfish quota. It is not known if, or to what extent, underreporting in the HMS logbook may be occurring by vessels participating in this fishery.

**Table 1**                      **Incidental Swordfish Landings (mt ww) for Squid Trawl Vessels, 1998 – 2004.**  
 Source: NMFS 2006.

	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Swordfish	5.9	7.5	10.9	2.5	3.9	6.0	7.6

To summarize, the above data indicates that, under the No Action alternative, the majority of trips (54%) taken by vessels with Incidental swordfish permits do not land swordfish and do not report any swordfish discards. The majority of incidental trips (75 %) that reported landing swordfish did not report any discards. However, 162 trips out of 865 trips (19%) taken by Incidental swordfish permit holders from 2002 – 2005 reported swordfish discards. The highest number of reported discards (52) came from a vessel that did not land swordfish, whereas vessels that landed swordfish reported significantly fewer discards (a maximum of 12). It is not possible to accurately determine if these swordfish discards were attributable to exceeding the current incidental retention limits, minimum size limits, or to other factors. Also, it is not known if, or to what extent, underreporting of swordfish discards may be occurring in the HMS logbook.

With regards to landings from HMS Charter/Headboat and Angling category permit holders, an examination of the HMS Non-Tournament Recreational Reporting Database indicates that it is not uncommon for these permit holders to land more than one swordfish per trip. Approximately 25 percent of the swordfish reported landed by CHB vessels, and approximately seven percent of the swordfish reported landed by HMS Angling category vessels, were in groups of three fish that were landed on the same date. Because the number of anglers onboard is not recorded, it is not possible to determine the precise number of trips that achieved the recreational retention limit of one swordfish per person, up to three per vessel per trip. Also, discards and releases have not been reported until very recently, so this information is not available. Nevertheless, the available information indicates that about 25 percent of CHB vessel permit holders have reported landing up to three swordfish on a trip. A few HMS Angling category permit holders also regularly land more than one swordfish per trip, as well. In 2005, landings by HMS CHB vessels accounted for approximately 32 percent of all the swordfish reported landed in the HMS non-tournament recreational reporting database, with HMS Angling category permit holders landing the remaining 68 percent. Anecdotal information suggests that the level of recreational swordfishing has increased in recent years, as the stock has rebuilt.

In conclusion, the overall suite of HMS management measures that have been implemented in recent years have had a positive ecological impact on many target, non-target and protected species. This pattern would be expected to continue under the No Action alternative. However, the No Action alternative for swordfish retention limits may be contributing to unnecessary swordfish discards. Approximately 19 percent of Incidental trips have reported at least one discard. A small number of owners of vessels holding valid Incidental swordfish permits have reported discarding as many as 10 to 52 swordfish on a single trip. Information on swordfish discards in recreational fisheries is not available. Although excessive discarding as a result of the current retention limits does not appear to be widespread, regulatory swordfish discards resulting from overly restrictive retention limits should be minimized, to the extent practicable, especially given the persistent underharvest of the ICCAT recommended U.S. North Atlantic

swordfish quota and the Magnuson-Stevens Act requirement to provide U.S. fishing vessels with a reasonable opportunity to harvest such quota.

NMFS received comments supporting No Action alternative 1A. The comments stated that the Agency should conserve fish, and let the current retention limits continue to strengthen the swordfish population. In response to this comment, the Agency believes that it is appropriate to increase incidental and recreational swordfish retention limits to provide additional opportunities to land the U.S. swordfish quota and to reduce regulatory discards, especially as the stock is almost fully rebuilt, projections indicate that the preferred alternatives will not jeopardize rebuilding, and the overall swordfish TAC will not be exceeded.

Under Alternative 1b, NMFS would remove the North Atlantic swordfish retention limit for vessels possessing valid Incidental swordfish limited access permits, except that the Incidental limit for such vessels participating in the squid trawl fishery would be increased to ten, until 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota is projected to be landed, after which the Incidental swordfish retention limit would revert back to current limits for the remainder of the semi-annual period. This alternative could potentially have the most severe adverse ecological impacts compared to the other alternatives or, conversely, it could produce negligible ecological impacts, depending upon whether owners of vessels possessing valid Incidental swordfish permits choose to fish for swordfish instead of their current target species, or to augment their existing fishing effort with additional effort on swordfish.

As mentioned under the analysis for Alternative 1a, approximately 56 percent (48 vessels) of the 86 vessels issued Incidental swordfish limited access permits hold valid permits because they also possess the necessary Atlantic Tunas Longline category permit and a shark limited access permit (as of September 29, 2006). It is presumed that these 48 vessels fish primarily for yellowfin tuna with PLL gear, because that is the other primary target species in the PLL fishery. By removing the incidental swordfish retention limit, these vessel owners would likely have to decide whether to continue fishing primarily for tunas with possibly a few additional swordfish sets, or to switch entirely to directed swordfish fishing. If they choose to exert additional fishing effort on swordfish beyond their current tuna fishing effort, some adverse ecological impacts could result on non-target and protected species. Conversely, if they substitute swordfish fishing for tuna fishing, there would likely be few additional ecological impacts as the overall level of fishing effort would be expected to remain constant. The decision to continue to fish for tuna or to switch to swordfish fishing would vary by vessel, and would be dependent upon ex-vessel prices for the two species, distance to the fishing grounds, the amount of hold space in the vessel to carry additional swordfish, and any costs associated with refitting the vessel.

In effect, Alternative 1b would allow vessels issued valid Incidental swordfish permits to direct fishing effort onto swordfish, because there would be no retention limit. Table 2 presents information regarding trips by vessels issued Swordfish Directed limited access permits from 2002 - 2005. It shows that swordfish landings by these vessels ranged from

zero fish up to 605 swordfish landed on a single trip in 2003. During that period, approximately half of the vessels issued Swordfish Directed limited access permits landed less than 36 fish on a single trip. The average number of swordfish kept during this period by vessels issued Swordfish Directed permits ranged from 60 fish to 77 fish. This indicates that there is a large degree of variability of landings among these vessels. Some vessels land hundreds of swordfish per trip, but just over half of these Directed vessels land less than 50 swordfish per trip.

**Table 2** **Swordfish Landings by U.S. Vessels Issued Limited Access Directed Swordfish Permits, 2002 – 2005.** Source: NMFS HMS Logbook.

<b>YEAR</b>	<b>Total Number SWO Kept</b>	<b>Total Lb. SWO Kept</b>	<b>Average Number of SWO Kept/Trip</b>	<b>Median* SWO Kept/Trip</b>	<b>Min. SWO Kept/Trip</b>	<b>Max. SWO Kept/Trip</b>	<b>Mean wt. (lb) of SWO Kept</b>
2002	18,293	617,020	72	40	0	545	68.6
2003	24,406	961,798	77	45	0	605	65.7
2004	25,604	901,267	65	33	0	557	68.9
2005	21,196	745,463	60	28	0	394	75.7

\* Median refers to level at which 50% of trips reported landing more and 50% of trips reported landing less.

If owners of tuna PLL vessels issued valid Incidental swordfish permits choose to augment their current fishing effort with additional swordfish sets under Alternative 1b, any adverse ecological impacts on non-target and protected species are expected to be more significant than the other alternatives, but still be relatively minor. Although additional fishing hooks could be deployed, all 48 of these PLL vessels are required to utilize circle hooks and to carry release and disentanglement gear to reduce sea turtle interactions and mortalities. In addition, PLL vessels in the Gulf of Mexico are prohibited from using live bait to reduce billfish bycatch. Furthermore, large portions of the Gulf of Mexico and the Atlantic coast would remain closed to PLL gear under this alternative, which further reduces the likelihood of significant increases in bycatch or other adverse ecological impacts associated with this alternative.

Alternative 1b would also increase the swordfish retention limit to 10 fish for vessels issued valid Incidental swordfish limited access permits and participating in the squid trawl fishery, until projections indicate that 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota will be landed. This provision is not expected to cause significant adverse ecological impacts. As discussed above under Alternative 1a, most trips by squid trawl vessels that were reported in the HMS logbook indicated keeping one or two swordfish with no discards. However, it is not known if, or to what extent, underreporting in the HMS logbook may be occurring by squid trawl vessels. It is possible that some squid trawl trips are not being reported in the HMS logbook because they encountered no swordfish. Nevertheless, doubling the retention limit from five to ten swordfish for squid trawl vessels will likely have the effect of enabling these vessels to land additional swordfish that otherwise would have been discarded. From 1998 – 2004, squid trawl vessels landed an average of 6.3 mt (ww) of swordfish per year. Increasing the limit for squid trawl vessels by five swordfish could potentially increase annual landings by squid trawl vessels to 12.6 mt (ww) per year. However, NMFS does

not expect that squid trawl vessels will increase their fishing effort or deliberately target swordfish because the limit has been increased under Alternative 1b. These vessels are primarily designed to fish for, and land, small pelagic species such as squid, mackerel and butterfish. Swordfish catches are incidental to catches of these target species.

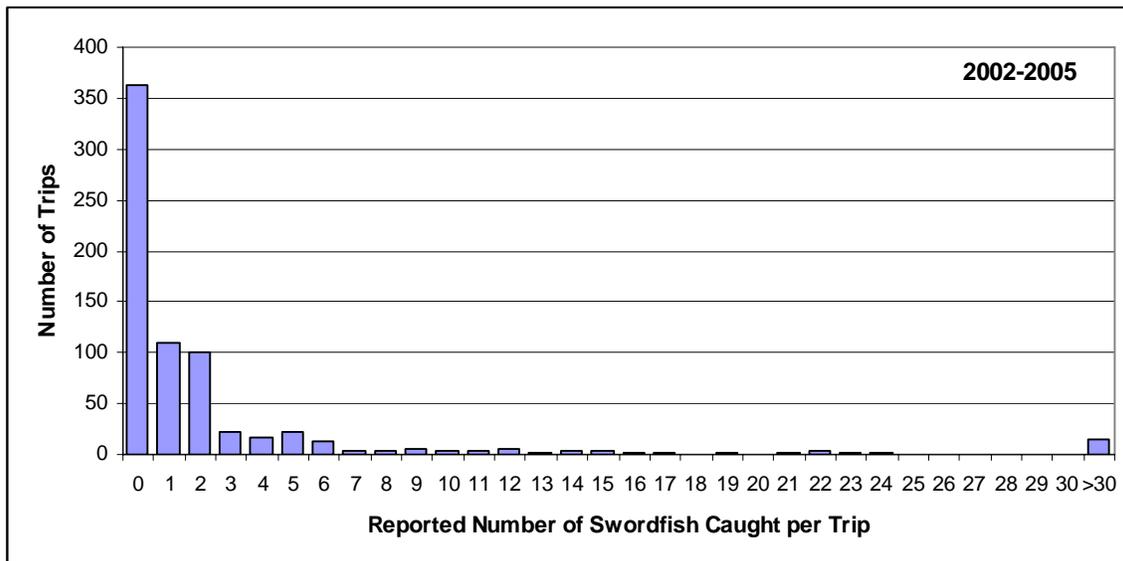
In summary, Alternative 1b would likely have the most sizeable adverse ecological impacts on non-target and protected species when compared to the other alternatives. However, the impacts associated with this alternative are expected to be minor. The alternative would remove the current two-fish incidental swordfish retention limit for vessels issued valid limited access Incidental swordfish permits, and would increase the incidental limit for squid trawl vessels to ten, until the date at which 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota is projected to be landed. For the period of time during which there is no incidental retention limit, landings from swordfish Incidental permit holders would be counted against the semi-annual directed fishery quota. This alternative would allow vessels issued valid Incidental swordfish permits, other than squid trawl vessels, to direct effort on swordfish, but provide a buffer to help ensure that the U.S. North Atlantic swordfish quota is not exceeded. This alternative would affect 48 Incidental swordfish permit holders that also possess Atlantic Tunas longline category permits and shark limited access permits. If these PLL vessel owners choose to exert additional fishing effort onto swordfish beyond their existing effort, increases in bycatch could occur. However, current requirements for PLL vessels to deploy circle hooks, carry release and disentanglement gear, utilize specific baits, and prohibitions on fishing in PLL closed areas are expected to largely mitigate any adverse impacts. Increasing the limit for squid trawl vessels by five swordfish could potentially increase annual landings by squid trawl vessels to 12.6 mt (ww) per year. However, squid trawl vessels are not anticipated to alter their current fishing practices to land a few additional swordfish, but rather will have the opportunity under this alternative to retain fish that otherwise may have been discarded.

Alternative 1c, a preferred alternative, would increase the North Atlantic swordfish retention limit for vessels holding valid Incidental swordfish limited access permits to 30 fish per vessel per trip, except that the incidental limit for those vessels participating in the squid trawl fishery would be increased to 15 fish per vessel per trip. This alternative is intended to provide the opportunity to land swordfish that might otherwise be discarded, but prevent a large increase in additional directed fishing effort on swordfish. While a minor increase in fishing effort and swordfish landings is possible under this alternative, the ecological impacts are expected to be limited. As discussed above, from 2002 – 2005, HMS logbook data indicates that 162 trips out of 865 trips (19%) by Incidental swordfish permit holders reported discarding swordfish. Of the trips that reported discards, the highest numbers have come from vessels that did not report any swordfish landings. Thirty-five of these trips reported landing no swordfish and discarding more than 10 swordfish. In fact, the highest number of reported discards (52) came from a vessel did not land any swordfish, whereas the highest number of reported discards for vessels that did land swordfish was 12. This may indicate that the opportunity to land additional swordfish could reduce the amount and level of swordfish discards, although it is not possible to determine if the reported discards were attributable

to exceeding the current incidental retention limits, minimum size limits, or to other factors. Also, it is not known if, or to what extent, underreporting of swordfish discards may be occurring in the HMS logbook.

In contrast to Alternative 1b, this alternative is not likely to create a situation where Incidental swordfish permit holders could choose between directed swordfish fishing or their current fishing practices. A limit of 30 swordfish was selected for this alternative based on public comment, discussions at the October 2006 HMS Advisory Panel (HMS AP) meeting, and data contained in Figure 2 showing that 90 percent of the swordfish discarded by Incidental swordfish permit holders on trips that did not land swordfish could be retained if the limit were increased to 30 fish. It has also been suggested that an incidental limit of two swordfish does not generate enough volume for vessel operators and dealers to develop reliable marketing channels needed to handle and sell swordfish. Alternative 1c would allow Incidental swordfish vessel permit holders to retain and sell swordfish that otherwise may have been discarded in order to provide a more consistent flow of product to the market. As shown in Table 2 above, a retention limit of 30 swordfish is just below the median amount (½ of all trips reported less and ½ reported more) of swordfish that are landed by vessels possessing a limited access Directed Swordfish permit. As such, this level (30 fish) is expected to provide a viable option for Incidental Swordfish permit holders to supplement their income, while retaining the incidental nature of the permit.

Figure 4 below indicates that the majority of trips reported by incidental swordfish permit holders caught no swordfish from 2002 - 2005. A comparatively small number of trips have been reported that caught (landings and discards) more than the current incidental limit of two swordfish.



**Figure 4. Distribution of the number of reported trips and number of swordfish caught (kept plus discards) by incidental permit holders, 2002-2005.** Source: HMS Logbook data

Assuming that the swordfish discarded are due to the current retention limit and not due to the minimum size limit, these discards could be converted into landings by increasing

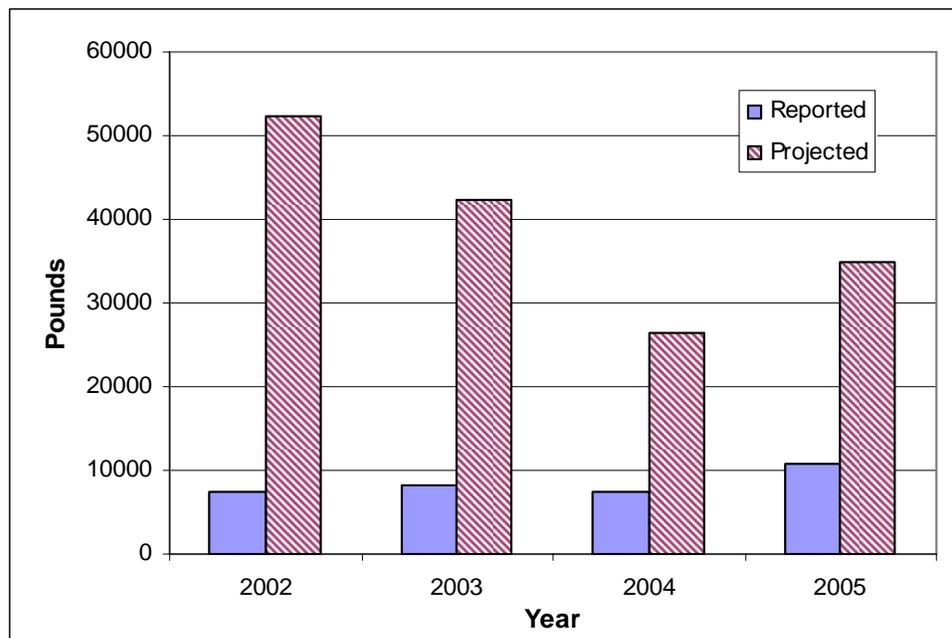
the retention limit. If these discards were converted into landings up to the proposed limit of 30 swordfish, the projected total pounds (dw) landed by incidental permit holders would have increased from 10,787 to 34,879 pounds (dw) in 2005 (Table 3). These projected landings would represent approximately 5.3 percent of the annual 300 mt (dw) Incidental swordfish quota. Figure 5 shows the projected increase in landings that could be achieved by converting the discards reported from 2002 – 2005 into landings, up to a 30 fish limit.

**Table 3. Reported and projected landings (numbers of fish unless otherwise noted) based on an increased retention limit of 30 swordfish for incidental permit holders (assumes that all swordfish caught were of legal size). Source HMS Logbook Data**

Year	Reported landings	Reported discards	Total Reported catch	Projected landings <sup>1</sup>	Projected discards <sup>2</sup>	Reported pounds (dw)	Projected pounds (dw)	Incidental Quota (lbs dw)	% Incidental Quota
2002	113	428	541	461	80	7,432	52,384.4	656,807	8
2003	131	365	496	418	78	8,119	42,190.4	656,807	6.4
2004	123	208	331	331	0	7,510	26,433.6	656,807	4
2005	163	298	461	428	33	10,787	34,878.8	656,807	5.3

<sup>1</sup> Projected landings were estimated by converting the reported discards per trip into landed fish up to the proposed limit (30 fish)

<sup>2</sup> Projected discards represent that portion of the reported catch per trip over the proposed limit.



**Figure 5. Projected landings of swordfish by incidental permit holders under a 30 fish retention limit based on converting reported discards into landings, 2002-2005.**

Given that the North Atlantic swordfish stock has been rebuilding over the last few years, swordfish may be more available to fishermen in the next few years. If that is the case, catches could be different from what has been reported in the recent years. If the

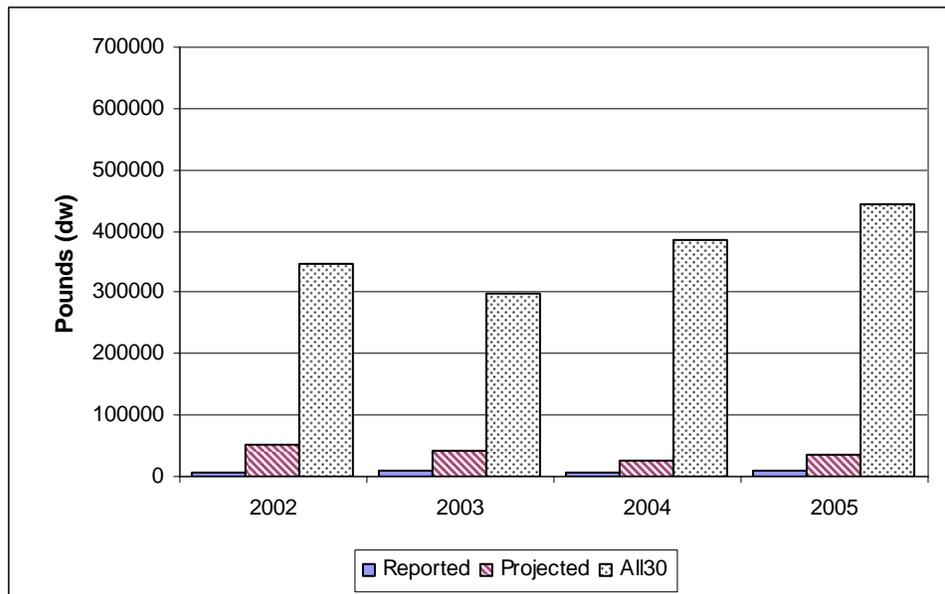
incidental limit were raised to 30 fish per trip and this amount of fish was caught, overall landings could be increased from 10, 787 lb. to 445,116 lb., as shown in Table 4. Based on the number of trips reported by incidental permit holders from 2002-2005, projected swordfish landings could be on the order of one-half to two thirds of the annual incidental quota of 300 mt dw (656,807 lbs) (Table 4).

**Table 4. Number of trips reported by incidental permit holders and projected landings of swordfish based on full retention of 30 fish/trip limit.**

Year	Number of reported trips	Proposed limit	Projected landings (numbers)	Mean wt (directed)	Projected pounds (dw)	Percent of Incidental Quota
2002	169	30	5,070	68.6	347,802	52.9
2003	151	30	4,530	65.7	297,621	45.3
2004	187	30	5,610	68.9	386,529	58.9
2005	196	30	5,880	75.7	445,116	67.8

Mean wt = mean weight (dw lbs) of the reported directed landings for that year

These two scenarios indicate that, with a 30 fish retention limit, Incidental permit holders may catch from approximately five to 70 percent of the 300 mt (dw) Incidental swordfish quota under current fishing effort patterns (Figure 6). The analyses and projections for this alternative are based on the currently reported catch and effort. The increases in projected landings are based on existing effort levels and allowing fishermen to land previously discarded fish. Given the resurgence in the North Atlantic swordfish population, increases in effort by Incidental permit holders in the future are possible.



**Figure 6. Reported and projected swordfish landings by incidental permit holders, 2002-2005, based on the number of reported discards (Projected) and full retention of proposed 30 fish limit (All30).**

As mentioned in the discussion regarding Alternative 1b, approximately 56 percent (48 vessels) of the 86 vessels issued Incidental swordfish limited access permits hold valid swordfish permits because they also possess the requisite Atlantic Tunas Longline category permit and a shark limited access permit. It is presumed that these 48 vessels fish primarily for yellowfin tuna with pelagic longline gear, for the reasons discussed in alternative 1b. Some of these PLL vessel operators may choose to deploy additional sets to capture swordfish. However, the potential additional effort to land 28 more swordfish is not expected to significantly alter fishing practices, and only a minor increase in fishing effort is anticipated for some of the 48 vessels. All of these PLL vessels are required to utilize large circle hooks, possess and utilize release and disentanglement gear, and abide by other gear restrictions to reduce sea turtle interactions and mortalities. In addition, PLL vessels in the Gulf of Mexico are prohibited from using live bait to reduce billfish bycatch. Furthermore, large portions of the Gulf of Mexico and the Atlantic coast would remain closed to PLL gear under this alternative, which further reduces the likelihood of significant increases in bycatch or other adverse ecological impacts associated with Alternative 1c.

Alternative 1c would also increase the retention limit to 15 swordfish for vessels with valid Incidental swordfish permits that are participating in the squid trawl fishery. This is not expected to cause significant adverse ecological impacts. As discussed above, most trips by squid trawl vessels that were reported in the HMS logbook kept one or two swordfish and did not discard any. However, it is not known if, or to what extent, underreporting in the HMS logbook may be occurring by squid trawl vessels. It is possible that some squid trawl trips are erroneously not being reported in the HMS logbook because they encountered no swordfish. Nevertheless, increasing the retention limit from five to 15 swordfish for squid trawl vessels will likely enable these vessels to land additional swordfish that otherwise would have been discarded. From 1998 – 2004, squid trawl vessels landed an average of 6.3 mt (ww) of swordfish per year. Increasing the limit for squid trawl vessels by ten swordfish could potentially increase annual landings by squid trawl vessels to 18.9 mt (ww) per year. However, NMFS does not expect that squid trawl vessels will increase their fishing effort, or deliberately target swordfish, because the limit has been increased to 15 fish under Alternative 1c. 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.

In summary, Alternative 1c could result in a minor increase in fishing effort and swordfish landings for the 48 vessels that hold valid Incidental swordfish limited access permits. This alternative is intended to provide an opportunity to land swordfish that might otherwise be discarded, but prevent a large increase in additional directed swordfish fishing effort. While a small increase in fishing effort is possible, only limited ecological impacts on target, non-target, and protected species are anticipated because PLL vessels are required to deploy only large circle hooks, utilize specific baits, carry and use release and disentanglement gear, comply with quotas, comply with VMS, abide by minimum size restrictions, and comply with large PLL closed area restrictions, among other measures. As described in the No Action alternative, these measures have

significantly reduced bycatch in the PLL fishery since 2000. Available HMS logbook information indicates that swordfish discards occur on approximately 19 percent of all trips taken by incidental swordfish permit holders. As many as 52 swordfish discards have been reported on a single trip. Increasing the incidental retention limit to 30 swordfish will allow 90 percent of all swordfish discards on trips that do not keep swordfish to be converted into landings, if they are above the legal minimum size. This will reduce the amount of wasteful discarding that occurs, and provide an additional opportunity for U.S. fishermen to land the ICCAT recommended U.S. swordfish quota. In 2005, 10,787 lb (dw) of swordfish were reported landed by Incidental permit holders. Increasing the incidental retention limit to 30 fish could increase swordfish landings by Incidental permit holders to between 34, 879 lb. (dw) and 445,116 lb (dw), based on current levels of fishing effort. Increasing the limit for squid trawl vessels by ten swordfish could potentially increase annual landings by squid trawl vessels from 10,443 lb. (dw) (6.3 mt ww) to 31,328 lb. (dw) (18.9 mt ww) per year. However, squid trawl vessels are not expected to alter current fishing practices to land 15 swordfish, but will have the opportunity under this alternative to retain swordfish that otherwise may have been discarded. At a maximum, 476,444 lb (dw) of swordfish is projected to be landed under this alternative, which represents 72.5 percent of the Incidental swordfish quota (656,807 lb (dw)).

Alternative 1d, would increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits, except for squid trawl vessels, to 15 fish per vessel per trip, and increase the incidental limit for these vessels participating in the squid trawl fishery to 10 fish per vessel per trip. Similar to Alternative 1c, this alternative is intended to provide an opportunity to land swordfish that otherwise might be discarded, but prevent a large increase in additional directed fishing effort on swordfish. Under this alternative, the ecological impacts are expected to be limited. A limit of 15 swordfish was selected for this alternative based on public comment, discussions at the October 2006 HMS AP meeting, and data contained in Figure 2 showing that 70 percent of the swordfish discarded by Incidental swordfish permit holders on trips that did not land swordfish could be retained if the limit were increased to 15 fish. A 15 fish limit would not accommodate the larger numbers of discards that have been reported, but this number is expected to be high enough to generate sufficient volume for vessel operators and dealers to develop the marketing channels needed to handle and sell swordfish by providing a more consistent flow of product to the market.

Figure 7 below indicates that the majority of trips reported by incidental swordfish permit holders catch no swordfish. A comparatively small number of trips have been reported that caught (landings and discards) more than the current incidental limit of two swordfish.

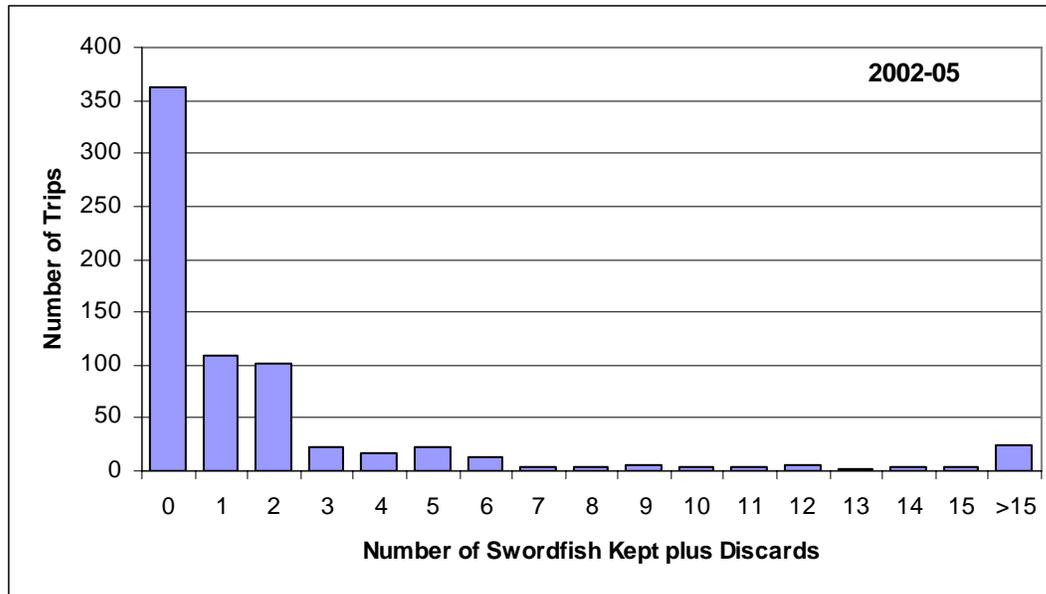


Figure 7. Distribution of the number of reported trips and number of swordfish caught (kept plus discards) by incidental permit holders, 2002-2005. Source: HMS Logbook data

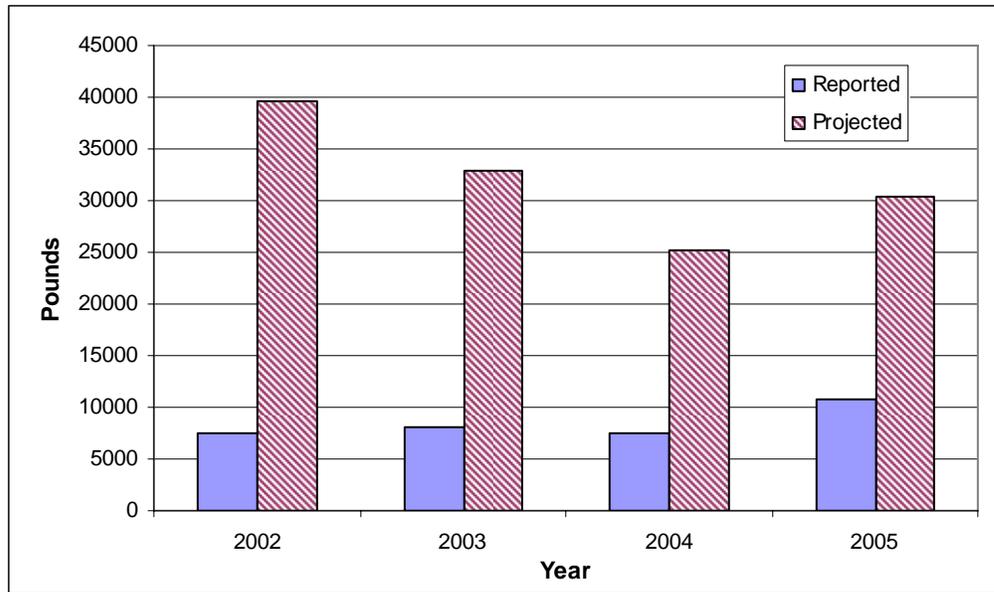
Assuming that the swordfish discarded are due to the current retention limit and not due to the minimum size limit, these discards could be converted into landings by increasing the retention limit. If these discards were converted into landings up to the proposed limit of 15 swordfish, the projected total pounds (dw) landed by incidental permit holders would have increased from 10,787 to 30,350 pounds (dw) in 2005 (Table 5). These projected landings would represent approximately 4.6 percent of the 300 mt (dw) annual Incidental quota. Figure 8 shows the projected increase in landings that could be achieved by converting the discards reported from 2002 – 2005 into landings, up to a 15 fish limit.

Table 5. Reported & projected landings (numbers of fish unless otherwise noted) based on an increased retention limit of 15 swordfish for incidental permit holders (assumes all swordfish caught were of legal size).

Year	Reported landings	Reported discards	Total Reported catch	Projected landings <sup>1</sup>	Projected discards <sup>2</sup>	Reported pounds (dw)	Projected pounds (dw)	Incidental Quota (lbs dw)	% of Incidental Quota
2002	113	428	541	348	193	7,432	39,659.4	656,807	6
2003	131	365	496	326	170	8,119	32,968.8	656,807	5
2004	123	208	331	316	15	7,510	25,247.8	656,807	3.8
2005	163	298	461	373	88	10,787	30,349.9	656,807	4.6

<sup>1</sup> Projected landings estimated by converting reported discards per trip into landed fish up to proposed limit (15 fish)

<sup>2</sup> Projected discards represent that portion of the reported catch per trip over the proposed limit.



**Figure 8. Projected landings of swordfish by incidental permit holders under a 15 fish retention limit based on converting reported discards into landings, 2002-2005.**

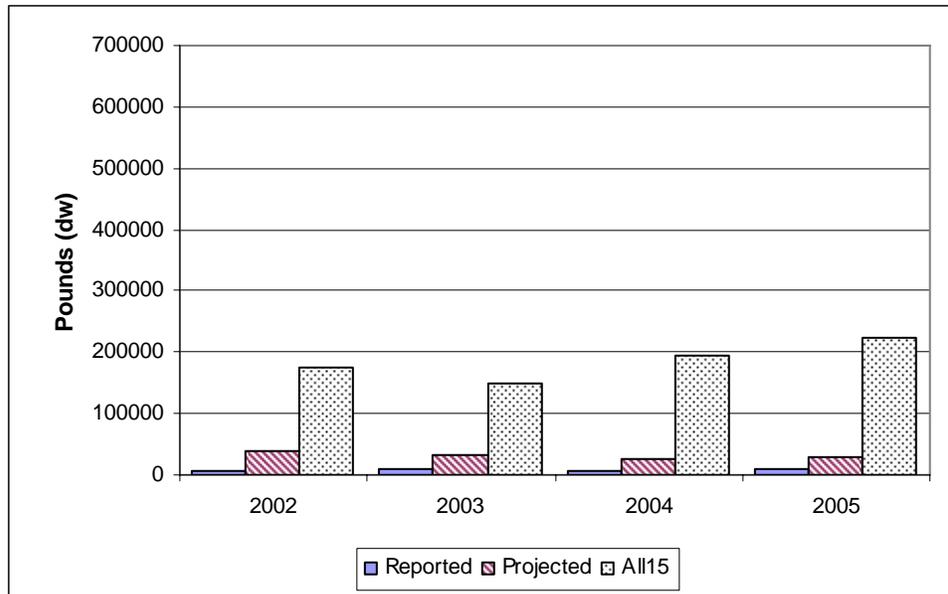
Given that the North Atlantic swordfish stock has been rebuilding over the last few years, swordfish may be more available to fishermen in the next few years. If that is the case, catches could be different from what has been reported in the recent years. If the incidental limit were raised to 15 fish per trip and this amount of fish was caught, overall landings could be greater than the projected landings in Table 5. Based on the number of trips reported by incidental permit holders from 2002-2005, projected swordfish landings could be on the order of one-quarter to one-third of the annual incidental quota of 300 mt dw (656,807 lbs) (Table 6).

**Table 6. Number of trips reported by incidental permit holders and projected landings of swordfish based on full retention of 15 fish/trip limit.**

Year	Number of reported trips	Proposed limit	Projected landings (numbers)	Mean wt (directed)	Projected pounds (dw)	% Incidental Quota
2002	169	15	2,535	68.6	173,901	26.5
2003	151	15	2,265	65.7	148,811	22.7
2004	187	15	2,805	68.9	193,265	29.4
2005	196	15	2,940	75.7	222,558	33.9

Mean wt = mean weight (dw lbs) of the reported directed landings for that year

These two scenarios indicate that, with a 15 fish retention limit, Incidental permit holders may catch from approximately four to 34 percent of the 300 mt (dw) Incidental swordfish quota under current fishing effort patterns (Figure 9). The analyses and projections for this alternative are based on the currently reported catch and effort. Given the resurgence in the North Atlantic swordfish population, increases in effort by Incidental permit holders in the future are possible.



**Figure 9. Reported and projected swordfish landings by incidental permit holders, 2002-2005 based on reported discards (projected) and full retention of proposed 15 fish limit (All15).**

The ecological impacts associated with Alternative 1d would be similar, but somewhat less, than those described above for Alternative 1c. While a small increase in fishing effort by PLL vessels is possible, only limited ecological impacts on target, non-target, and protected species are anticipated because PLL vessels are required to deploy circle hooks, utilize release and disentanglement gear, utilize specific baits, and may not fish in PLL closed areas. As described in the No Action alternative, these measures have significantly reduced bycatch in the PLL fishery since 2000. In 2005, 10,787 lb (dw) of swordfish were reported landed by Incidental permit holders. Increasing the incidental retention limit to 15 fish could increase swordfish landings by Incidental permit holders to between 30,350 lb and 222,558 lb (dw), based on current levels of fishing effort. Increasing the limit for squid trawl vessels by five swordfish could potentially increase annual landings by squid trawl vessels from 10,443 lb (dw) (6.3 mt ww) to 20,886 lb (dw) (12.6 mt ww) per year. However, squid trawl vessels are not anticipated to alter their current fishing practices. These vessels are primarily designed to fish for, and land, small pelagic species such as squid, mackerel and butterfish. At a maximum, 243,444 lb (dw) of swordfish is projected to be landed under this alternative, which represents 37.1 percent of the Incidental swordfish quota (656,807 lb (dw)).

Alternative 1e, a preferred alternative, would implement a North Atlantic swordfish retention limit for HMS CHB vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels. This alternative would maintain the current recreational limit of one swordfish per person, but increase the allowable vessel upper retention limit (from three fish per vessel). Therefore, a charter vessel possessing a HMS CHB permit with six paying passengers onboard would be limited to possessing or retaining no more than six swordfish. An HMS headboat vessel with 15 paying passengers onboard would be limited to possessing or retaining no more than 15 swordfish. However, if either of these types of vessels had,

for example, five paying passengers onboard, the vessel would be limited to possessing or retaining no more than five swordfish.

This alternative recognizes that charter and headboat vessels may carry many paying passengers. A six-fish upper vessel retention limit for charter vessels was the only alternative analyzed for this sector, besides the no action alternative, because these vessels are licensed to carry a maximum of six passengers per trip. Although headboats can carry upwards of 50 passengers, a 15-fish retention limit was analyzed because it would provide a better opportunity for anglers on headboats to land a swordfish while maintaining a recreational aspect to the charter/headboat fishery. In addition, given the lack of data for swordfish retention by anglers, a 15 fish limit is in keeping with a precautionary approach in that this limit is five times the limit now allowed, but is still conservative enough so as to preclude potential negative effects on the swordfish stock.

Impacts on protected species are expected to be minor under this alternative. HMS CHB permit holders may fish for swordfish only with rod & reel and handline. Under the Marine Mammal Protection Act (MMPA), NMFS produces an annual list of fisheries (LOF) that classifies domestic commercial fisheries by gear type, relative to their rates of incidental mortality or serious injury of marine mammals. The final 2006 MMPA LOF, published on August 26, 2006 (71 FR 48802), indicated that the Atlantic, Gulf of Mexico, and Caribbean commercial passenger fishery (CHB fishery) was a Category III fishery, meaning that it has a remote likelihood of serious injury or mortality to marine mammals. Under the Endangered Species Act (ESA), a 2001 Biological Opinion that included handgear found that the potential for takes of threatened or endangered species in the handgear fishery was low. Increasing the allowable upper limit on the amount of swordfish that may be retained by charter and headboat vessels is not expected to change these findings regarding protected species.

Using the best available information obtained from the HMS recreational reporting database, this alternative is projected to have only limited impacts on the swordfish stock. As of February 1, 2006, there were 4,173 HMS CHB permits issued. During fishing year 2005 (June 1, 2005 – May 31, 2006), approximately 80 charter and 3 headboat trips reported landing at least one swordfish. Charter trips were reported as landing approximately 127 swordfish (32%) out of 394 swordfish reported in the HMS non-tournament recreational database. Four swordfish (1%) were landed on headboat trips, of which two came from the same trip. As described in Alternative 1a, approximately 25 percent of the swordfish reported landed by CHB vessels in the HMS non-tournament recreational reporting database were in groups of three fish on the same date. Because the number of anglers onboard is not recorded, it is not possible to determine the actual number of trips that achieved the recreational retention limit. However, at a minimum, 32 swordfish ( $127 \times 0.25$ ) equating to approximately ten charter trips (at three per trip) landed the current three-fish limit during the 2005 fishing year, and no headboats reported landing the limit. At a lower range, assuming that charter vessels continue these patterns of landing the retention limit, an additional 32 swordfish landed on ten trips would be expected if the limit is doubled to six fish for charter vessels. Because no headboats reported landing the current three fish limit during fishing year 2005, it is

projected that no headboats will approach a 15 fish limit. These projections assume that the same numbers of vessels will continue to land the retention limit. At the upper range, assuming that all 80 reporting charter trips and all reporting headboat trips land the new limits of 6 and 15 fish, respectively, a total of 409 additional swordfish could be landed (80 charter trips x 6 fish + 4 headboat vessels x 15 fish – 131 fish landed in 2005). Both of these projections, 32 and 409 additional swordfish, assume that all CHB vessels reported all of their swordfish landings during fishing year 2005. It is not known if, or how many, charter and headboat vessel operators did not report. Also, although the per person limit would not change under this alternative, it is possible that the opportunity to land more swordfish per vessel could increase the total number of CHB trips targeting swordfish. This could increase swordfish landings by an unknown amount.

In summary, Alternative 1e is not expected to have significant adverse ecological impacts on target, non-target, and protected species. The Atlantic CHB fishery is a Category III fishery that has only a remote likelihood of serious injury or mortality to marine mammals. The 2001 Biological Opinion issued for this fishery determined that there would be no jeopardy from its continued operation. Projected swordfish landings are expected to range from 32 to 409 additional fish, based on reported landings during the 2005 fishing year. It is not known if, or how many, charter and headboat permit holders did not report swordfish landings in the 2005 fishing year. If the number of CHB trips targeting swordfish were to increase as a result of this alternative, swordfish landings could similarly increase by an unknown amount. This alternative is preferred because it will provide increased opportunities for U.S. vessels to harvest the domestic swordfish quota, with no significant adverse impacts on target, non-target, and protected species.

Alternative 1f, a preferred alternative, would implement a North Atlantic swordfish recreational retention limit for HMS Angling category vessels of one fish per person per trip, up to four swordfish per vessel per trip. It would maintain the current recreational limit of one swordfish per person, but increase the upper vessel retention limit from three fish to four fish per vessel per trip. Thus, a vessel possessing an HMS Angling category permit with three persons onboard would be limited to possessing or retaining no more than three swordfish, a vessel with four persons onboard would be limited to no more than four swordfish, and a vessel with five or more persons onboard would also be limited to four swordfish.

A four-fish upper vessel retention limit for angling vessels was the only alternative analyzed for this sector, besides the no action alternative, because it would provide a modest increase in the opportunity to land a swordfish, while maintaining a recreational aspect to the fishery. Because there were 25,238 vessels issued HMS Angling category permits, as of February 1, 2006, an increase in the upper retention limit of more than one fish per angling vessel was considered but rejected, due to concerns about potential ecological impacts of very large amounts of recreational swordfish landings, including the bycatch of undersized swordfish. HMS Angling category vessels do not carry paying passengers, so a higher limit based on the number of paying passengers onboard was not considered.

Impacts on protected species are expected to be minor under this alternative. HMS Angling category permit holders may fish for swordfish only with rod & reel and handline. This fishery is not categorized under the MMPA, because it is not a commercial fishery. The 2001 Biological Opinion issued for the HMS angling fishery found that it may have adverse impacts on threatened and endangered species, but there was no jeopardy from its continued operation. Increasing the allowable upper limit on the amount of swordfish that may be retained by HMS Angling category permit holders is not expected to change these findings.

Using the best available information obtained from the HMS recreational reporting database, alternative 1f is projected to have only limited impacts on the swordfish stock. As of February 1, 2006, there were 25,238 HMS Angling category permits issued. During fishing year 2005 (June 1, 2005 – May 31, 2006), approximately 209 HMS Angling trips reported landing at least one swordfish. Angling category trips were reported as landing approximately 267 swordfish (68%) out of 394 swordfish reported in the HMS non-tournament recreational database. As described in Alternative 1a, approximately 7 percent of the swordfish reported landed by Angling category vessels in the HMS non-tournament recreational reporting database were in groups of three fish on the same date. Because the number of anglers onboard is not recorded, it is not possible to precisely determine the actual number of trips that achieved the recreational retention limit. However, at a minimum, 18 swordfish ( $267 \times 0.07$ ) equating to approximately six angling trips (at three per trip) landed the current three-fish limit during the 2005 fishing year. At the lower range, assuming that HMS Angling category vessels continue these patterns of landing the retention limit, an additional six swordfish landed on six trips would be expected if the limit is increased by one fish for HMS Angling category vessels. This projection assumes that the same numbers of vessels will continue to land the retention limit. At the upper range, assuming that all 209 reporting Angling trips land the new limit of four fish, a total of 569 additional swordfish could be landed ( $209 \text{ Angling trips} \times 4 \text{ fish} - 267 \text{ fish landed in 2005}$ ). Both of these projections, 18 and 569 additional swordfish, assume that all HMS Angling vessels reported all of their swordfish landings during fishing year 2005. It is not known if, or how many, HMS Angling category permit holders did not report. Also, although the per person limit would not change under this alternative, it is possible that the opportunity to land more swordfish per vessel could increase the number of HMS Angling trips targeting swordfish. This could increase swordfish landings by an unknown amount. This alternative is preferred because it will help to provide a reasonable opportunity for U.S. vessels to harvest the domestic swordfish quota, with no significant adverse impacts on target, non-target, and protected species.

### ***Social and Economic Impacts***

NMFS would be implementing all of the alternatives that are identified as preferred. The cumulative and combined impacts associated with implementing all of these preferred alternatives are described in Section 4.9 of this document

Under Alternative 1a (No Action), NMFS would maintain the status quo. Accordingly, there would be no change from the current baseline economic and social impacts associated with the current North Atlantic swordfish retention limit regulations.

The current swordfish incidental retention limits do not seem to be having a substantial economic or social impact, based upon permit and logbook records, because most trip by Incidental permit holders are not reporting any swordfish landings or discards. There are 48 vessels that currently hold valid Incidental Swordfish permits. As indicated previously in the ecological impacts section, 81 percent of incidental trips did not report any discards. Furthermore, 64 percent of trips did not land any swordfish. Therefore, based on this information, Incidental Swordfish permitted vessels do not currently land or discard swordfish.

There may be lost opportunity costs associated with the current 2-fish Incidental limit. The percentage of trips that reported keeping no swordfish generally had the highest swordfish discards. In fact, one trip that did not keep swordfish reported 52 discards. If any discards were attributable to exceeding the current two fish incidental limit, then this could potentially represent lost revenues associated with the current incidental trip limit.

Discards associated with the current incidental trip limit for swordfish may also be contributing to the persistent underharvest of the domestic swordfish quota. This could adversely impact associated shore-side businesses. Federal Atlantic swordfish dealer permits have declined from 321 in 2002 to 285 in 2006. Potential reductions in shore-side business activities associated with domestic swordfish handling and processing may be resulting in additional local economic impacts.

The communities most affected by the current incidental swordfish limit are expected to be located where Incidental Swordfish permit holders are concentrated. Figure 9.7 from the Final Consolidated HMS FMP (2006) depicts the geographic distribution of Swordfish Permit holders as of February 2006. In addition, the Final Consolidated HMS FMP also includes profiles of many of the communities most actively involved in the fishery.

The No Action alternative would also maintain the current HMS Angling and Charter/headboat (CHB) retention limit of one North Atlantic swordfish per person, up to three per vessel per trip. This limit may potentially be lowering the demand for Charter and headboat boat trips, especially on trips with more than three people, since each person on the boat is not afforded the ability to retain a swordfish.

Under Alternative 1b, NMFS would remove the North Atlantic swordfish retention limit for vessels possessing valid Incidental Swordfish limited access permits, except that the Incidental limit for such vessels participating in the squid trawl fishery would be increased to ten, until 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota is projected to be landed, after which the Incidental swordfish retention limit would revert back to current limits for the remainder of the semi-annual period. This alternative would allow incidental permit holders to land unlimited amounts of

swordfish, and thus allow them greater flexibility and profit in their overall operations. However, this alternative could potentially have the most significant adverse ecological impacts if vessel owners with Incidental Swordfish permits alter their strategies and choose to deploy additional sets to target swordfish.

For example, an Incidental Swordfish permit holder fishing for tuna during the day could choose to fish for swordfish at night under Alternative 1b. If they switch to swordfish fishing and abandon tuna fishing, the overall amount of effort is expected to remain relatively constant. The decision to supplement their tuna revenues with swordfish revenues or to switch to swordfish all together would likely depend on prices, location of fishing grounds, the amount of hold space in the vessel to carry additional swordfish, and any costs associated with refitting their vessel. Given the relatively higher ex-vessel prices for tuna, it is not likely that many vessels would switch completely to swordfish if the relative costs associated with targeting either species are similar to the cost of effort associated with swordfish fishing.

The potential economic gain from this alternative (1b) would be associated with increased landings from two swordfish per trip up to as many as 605 swordfish per trip (highest number reported landed by a directed vessel) minus what vessels could make tuna fishing during the same time if they switch entirely to swordfish fishing. Using the mean weight of swordfish landed in 2005 of 75.7 lbs and the mean ex-vessel price of \$3.71 in 2005, the estimated value of potentially retaining up to an additional 603 swordfish could be as high as \$ 169,351 per trip. However, this should only be considered an upper bound, especially since it does not take into account reductions in the retention of other species that might have to occur in order to make room for the swordfish on the vessel. More typically, vessels issued Swordfish Directed permits during the period from 2002 to 2005 averaged 60 to 77 swordfish kept per trip. That would equate to potentially \$16,289 to \$21,064 in additional revenue per trip for Incidental Swordfish permit holders that decide to direct on swordfish, assuming they share a similar capability to harvest swordfish as the Direct Swordfish permit holders. This alternative would affect the 48 Incidental Swordfish permit holders that possess Atlantic Tuna longline category permits and shark limited access permits.

If incidental permit holders choose to supplement their tuna fishing, then any economic returns from swordfish above the previous two fish limit would be positive. If, instead, incidental permit holders make no changes to fishing practices except landing swordfish that were previously discarded, then that level of fish previously discarded would generate economic benefits from additional revenues. Figure 2 shows the levels of discards that have occurred.

Alternative 1b would also increase the swordfish retention limit to 10 swordfish for vessels issued valid Incidental swordfish limited access permits that participate in the squid trawl fishery. This effectively doubles the current retention limit for these vessels. From 1998 – 2004, squid trawl vessels landed an average of 6.3 mt (ww) per year. Increasing the limit for squid trawl vessels by an additional five swordfish per trip could potentially increase annual landings by squid trawl vessels to 12.6 mt (ww) per year.

Overall, this increase of 6.3 mt (ww) of swordfish would be worth \$38,743 per year, distributed amongst all squid trawl vessels, based on the 2005 average ex-vessel price of swordfish of \$3.71 and a ratio of whole weight to dress weight of 1.33.

Alternative 1c, a preferred alternative, would increase the North Atlantic swordfish retention limit for non-squid trawl vessels holding valid Incidental swordfish limited access permits to 30 fish per vessel per trip, and increase the incidental limit for these vessels participating in the squid trawl fishery to 15 fish per vessel per trip. This alternative is intended to provide the opportunity to land swordfish that might otherwise be discarded, but prevent a large increase in additional directed fishing effort on swordfish. As previously indicated, this alternative would have only limited adverse ecological impacts.

The preferred 30 fish limit is just below the median number of swordfish that have been reported landed by directed permit holders (36 fish). The potential economic benefits associated with this alternative are estimated by taking difference between the value of two swordfish and the value of 30 swordfish. Using the mean weight of swordfish landed in 2005 of 75.7 lbs and the mean ex-vessel price of \$3.71 in 2005, the estimated value of potentially retaining an additional 28 swordfish under this alternative is \$7,864 per trip.

Using logbook records from 2005, it is projected that total annual landings of swordfish will increase from 10,787 lb to 34,879 lb under a 30 fish per vessel incidental trip limit, assuming that all fish previously discarded are converted into landings. Using the average ex-vessel price of \$3.71 for 2005, the estimated total value of these additional landings would be \$89,381 per year.

Alternative 1c would allow Incidental Swordfish permit holders to convert discards into landings, and possibly result in some vessels deploying a few additional swordfish sets. However, vessels are not anticipated to switch entirely to swordfish fishing under this alternative for the opportunity to land 28 additional swordfish. This alternative could potentially provide some economic return by allowing the retention of swordfish that otherwise would have been discarded, and because vessel operators could possibly deploy a few additional swordfish sets if prices, costs, swordfish availability, and time make it worthwhile. The economic gain would be from two swordfish per trip up to 30 swordfish per trip minus any costs associated with travel, ice, etc. If they choose to supplement their tuna fishing, then any economic returns from swordfish above two fish would be positive. If they make no changes to fishing practices except for landing swordfish that were previously discarded, then that level of fish previously discarded would be economic benefits. Figure 2 shows the levels of discards that have occurred.

Under Alternative 1c, Incidental Swordfish permit holders participating in the squid trawl fishery would be allowed to retain up to 15 swordfish per vessel per trip. This would triple the current limit. Based on the current average annual landings of 6.3 mt (ww) of swordfish by the squid trawl fishery, it might be reasonable to assume that landings could increase by 12.6 mt (ww) per year under this alternative. That would result in an estimated increase in annual revenues of approximately \$77,487, amongst all squid trawl

vessels, based on 2005 average ex-vessel price of \$3.71 per pound of swordfish and a 1.33 whole weight to dress weight ratio.

NMFS received comments both in support of, and opposed to, preferred alternative 1c. One commenter was concerned that this alternative would provide an incentive for Incidental permit holders to become directed swordfish fishermen. The Agency does not anticipate that large numbers of Incidental permit holders will convert entirely to directed swordfish fishing, because prices for tuna are generally higher than swordfish. Also, the 30 fish limit is just below the median number of swordfish landed by Directed swordfish permit holders. However if some tuna fishermen deploy additional swordfish sets, then additional landings of swordfish could occur, which is a desired outcome of this action. Another commenter indicated that preferred alternative 1c makes “good sense” because it limits regulatory discards, but prevents a large increase in directed fishing effort. Also, a commenter stated that the preferred alternative would help to supplement income for fishermen whose earnings have been reduced by recent shark management regulations. NMFS agrees with these comments, and believes that reducing regulatory discards while providing supplemental income are positive outcomes that could potentially result from this alternative. Finally, a commenter questioned the projected landings provided by NMFS under preferred alternative 1c. The Agency has responded in the Comments and Response section by clarifying the procedures to establish these projections, and by indicating that actual landings will likely fall somewhere within the upper and lower ends of the projected range.

Alternative 1d would increase the North Atlantic swordfish retention limit for non-squid trawl vessels holding valid Incidental swordfish limited access permits to 15 fish per vessel per trip, and increase the incidental limit for these vessels participating in the squid trawl fishery to 10 fish per vessel per trip. This alternative is intended to provide the opportunity to land swordfish that might otherwise be discarded, but prevent a large increase in additional directed fishing effort on the swordfish. As previously indicated, this alternative would have only limited adverse ecological impacts.

A 15 fish limit is much lower than the median number of swordfish landed by directed permit holders (36 fish), but higher than the current limit of 2 fish. The economic benefits associated with this alternative are estimated by taking difference between the value of two swordfish and the value of 15 swordfish. Using the mean weight of swordfish landed in 2005 of 75.7 lbs and the mean ex-vessel price of \$3.71 in 2005, the estimated value of potentially retaining an additional 13 swordfish under this alternative is \$3,651 per trip.

Using logbook records from 2005, it is projected that total annual landings of swordfish will increase from 10,787 lbs. to 30,350 lbs. under a 15 fish per vessel incidental trip limit, assuming that all fish previously discarded are converted into landings. Using the average ex-vessel price of \$3.71 for 2005, the estimated total value of these additional landings would be \$72,579 per year.

This alternative would allow Incidental Swordfish permit holders to convert discards into landings, and possibly result in vessels deploying a few additional swordfish sets. However, vessel operators are not likely to switch entirely to swordfish fishing for the opportunity to land 13 additional swordfish. Alternative 1d could potentially provide some economic return by allowing the retention of swordfish that otherwise would have been discarded, and because they could possibly deploy a few swordfish sets if prices, costs, swordfish availability, and time make it worthwhile. The economic gain would be from two swordfish per trip up to 15 swordfish per trip minus any costs associated with travel, ice, etc. If they choose to supplement their tuna fishing, then any economic returns from swordfish above two fish would be positive. If they make no changes to fishing practices except for landing swordfish that were previously discarded, then that level of fish previously discarded would be economic benefits. Figure 2 shows the levels of discards that have occurred.

Alternative 1d would also increase the swordfish retention limit to 10 swordfish for vessels issued valid Incident Swordfish limited access permits that participate in the squid trawl fishery. This effectively doubles the current retention limit for these vessels. From 1998 – 2004, squid trawl vessels landed an average of 6.3 mt (ww) per year. Increasing the limit for squid trawl vessels by an additional five swordfish per trip could potentially increase annual landings by squid trawl vessels to 12.6 mt (ww) per year. This increase of 6.3 mt (ww) of swordfish would be worth \$38,743 per year, amongst all squid trawl vessels, based on the 2005 average ex-vessel price of swordfish of \$3.71 and a ratio of whole weight to dress weight of 1.33.

Alternative 1e, a preferred alternative, would implement a North Atlantic swordfish retention limit for HMS CHB vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels. This alternative would maintain the current recreational limit of one swordfish per person, but increase the allowable upper retention limit (from three fish per vessel). Therefore, a charter vessel possessing a HMS CHB permit with six paying passengers onboard would be limited to possessing or retaining no more than six swordfish. An HMS headboat vessel with 15 paying passengers onboard would be limited to possessing or retaining no more than 15 swordfish. However, if either of these types of vessels had, for example, five paying passengers onboard, the vessel would be limited to possessing or retaining no more than five swordfish.

Some charter boats landed up to the three-fish limit in 2005. Approximately 25 percent of the swordfish reported landed by CHB vessels in the HMS non-tournament recreational reporting database were landed in a group of three fish on the same date. Even though a quarter of trips may have been limited in the amount of swordfish retained under the existing vessel trip limit, the benefits of raising the limit could extend beyond those trips. The economic benefit would be due to more bookings of charter trips because the perceived value of a trip for an angler is increased due to the ability to land more fish. The 2004 average daily HMS charterboat rates for day trips was \$1,053. The willingness-to-pay for swordfish charterboat and headboat trips could be higher than this value under the preferred alternative. Increased bookings could lead to some positive

economic multiplier impacts to tackle shops, boat dealers, hotels, fuel suppliers, and other associated local and regional businesses.

NMFS received comments both in support of, and opposed to, preferred alternative 1e. Those in support of the alternative indicated that it could provide additional opportunities for HMS CHB vessels to book directed swordfish trips. Those opposed were concerned that it could encourage illegal recreational sales of swordfish. NMFS is similarly concerned about illegal sales of recreationally-caught swordfish by HMS CHB and Angling category permit holders. NMFS has informed its Office of Law Enforcement about this concern, and encourages all citizens to report any illegal fishing activity by calling the Agency's anonymous tip line at (800) 853-1964.

Alternative 1f, a preferred alternative, would implement a North Atlantic swordfish recreational retention limit for HMS Angling category vessels of one fish per person per trip, up to four swordfish per vessel per trip. It would maintain the current recreational limit of one swordfish per person, but increase the upper retention limit from three fish to four fish per vessel per trip. Thus, a vessel possessing an HMS Angling category permit with three persons onboard would be limited to possessing or retaining no more than three swordfish, a vessel with four persons onboard would be limited to no more than four swordfish, and a vessel with five or more persons onboard would also be limited to four swordfish.

Some angling trips have landed up to the three-fish limit in 2005. As discussed previously, approximately seven percent of the swordfish reported landed by Angling category vessels in the HMS non-tournament recreational reporting database were in groups of three fish on the same day. This indicates that few recreational anglers are currently landing the bag limit under the existing regulations. Therefore, the increase from three to four swordfish per vessel per trip under this alternative is projected to affect few trips. Also, the per person limit would remain in effect under this alternative.

There would be some economic benefit associated with Alternative 1f. The economic benefit would be derived from an increased perceived value of a trip for an angler due to the ability to land more fish. Recreational anglers might take more trips, which could lead to some multiplier benefits to tackle shops, boat dealers, hotels, fuel suppliers, and other related businesses. The average expenditure on HMS related trips is estimated to be \$122 per person per day based on the recreational fishing expenditure survey add-on to the National Marine Fisheries Service's Marine Recreational Fisheries Statistical Survey (MRFSS). Swordfish trips may be more expensive if they occur further offshore or are taken overnight. The expenditure data include the costs of tackle, food, lodging, bait, ice, boat, fuel, processing, transportation, party/charter fees, access/boat launching, and equipment rental.

However, some of the potential benefit associated with this alternative could be minimized by an increasing trend in the catch-and-release ethic of many recreational anglers. Anglers may not take advantage of the four fish per vessel limit, and may instead decide to release their catch. Moreover for some recreational anglers, the

proposed increase in the angling category recreational limit could actually decrease their perceived benefits if they are avid catch-and-release fishermen. These catch-and-release fishermen might consider the proposed marginal increase in the recreational trip limit to be diminishing their future angling quality for swordfish.

The Agency received some support for this alternative, if it would help the U.S. land its swordfish quota. However, many commenters were opposed to the alternative because of concerns about encouraging illegal recreational sales. If recreational anglers accurately report their swordfish catches, this alternative could effectively boost United States landings, but by a limited amount. Illegal recreational sales are a concern, and NMFS' Office of Law Enforcement has been informed as noted above.

### ***Conclusion***

In conclusion, NMFS does not expect significant adverse ecological impacts from any of these alternatives. Currently, North Atlantic swordfish are classified as overfished; however, the ICCAT Standing Committee on Research and Statistics' (SCRS) 2006 stock assessment found that the population's biomass has almost fully recovered, and is currently at 99 percent of  $B_{msy}$ . Adjusting the U.S. swordfish incidental and recreational retention limits would be in compliance with the ICCAT rebuilding plan because none of the alternatives are expected to result in an exceedance of either the overall U.S. North Atlantic swordfish quota, or the domestic incidental swordfish quota allocation.

The ecological impacts of adopting Preferred Alternatives 1c, 1e, and 1f will vary, based on the resulting level of fishing effort. However, none of these alternatives are expected to have substantially greater impacts than the others, or the no action alternative. Currently, the U.S. swordfish fleet has been unable to catch the entire U.S. swordfish quota causing significant amounts to be carried over to the subsequent fishing years. As mentioned under the description for Alternative 1a, the decrease in effort might be attributable to several restrictions that have been implemented since 1999, including, but not limited to, limited access permits, quotas, minimum size restrictions, vessel monitoring system (VMS) requirements, gear restrictions (large circle hooks, gangion length specifications, non-stainless hooks, etc.), dealer and vessel logbook reporting, a live bait prohibition in the GOM, landing restrictions, and large closed areas for PLL and BLL gear. These have been effective at reducing bycatch, but they may also have had the consequence of reducing landings of swordfish more than intended. Adjusting incidental and recreational swordfish retention limits will allow swordfish that otherwise may have been discarded to be landed, but is not expected to significantly increase fishing effort because the other restrictions will remain in place.

The social and economic impacts associated with the preferred alternatives will vary based upon the amount of swordfish kept minus any additional costs associated with catching the additional swordfish. The potential economic benefits associated with Alternative 1c are estimated by taking difference between the value of two swordfish and the value of 30 swordfish. Using the mean weight of swordfish landed in 2005 of 75.7 lbs and the mean ex-vessel price of \$3.71 in 2005, the estimated value of potentially retaining an additional 28 swordfish under this alternative is \$7,864 per trip. For

Alternatives 1e and 1f, the economic benefit would be derived from an increased perceived value of a for-hire or private trip for an angler, due to the ability to land more fish. Recreational anglers might take more trips, which could also lead to some multiplier benefits to tackle shops, boat dealers, hotels, fuel suppliers, and other related businesses. It is possible that avid catch-and-release fishermen might consider the proposed marginal increase in the recreational trip limit to be diminishing their future angling quality for swordfish.

#### **4.2. HMS Limited Access Vessel Upgrading Restrictions**

As described in Section 2, the alternatives being considered for HMS Limited Access Vessel Upgrading Restrictions include:

- Alternative 2a: No Action
- Alternative 2b: Waive HMS limited access vessel upgrading and permit transfer upgrading restrictions for all vessels that are authorized to fish with longline gear for swordfish and tunas for 10 years, after which a new vessel baseline would be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect
- Alternative 2c: Waive HMS limited access swordfish handgear vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new baseline would be established and the 10% LOA, GRT, NT and 20% HP restrictions would go back into effect
- Alternative 2d: Waive all HMS limited access vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new vessel baseline would be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect.
- Alternative 2e: *Establish new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for HMS vessels that are authorized to fish with pelagic longline gear for swordfish and tunas, equivalent to 35 percent LOA, GRT, and NT, as measured relative to the baseline vessel specifications (i.e., the specifications of the vessel first issued an HMS limited access permit), remove HP upgrading and permit transfer upgrading restrictions for these vessels, and remove the “one time only” upgrading restriction for all HMS limited access vessels – Preferred Alternative*

### ***Ecological Impacts***

NMFS would be implementing all of the alternatives that are identified as preferred. The cumulative and combined impacts associated with implementing all of these preferred alternatives are described in Section 4.9 of this document

Alternative 2a (No Action) would maintain the status quo. Current regulations specify that owners of vessels issued HMS limited access permits may upgrade vessels or transfer permits to another vessel only if the vessel upgrade or permit transfer does not result in an increase in horsepower (HP) of more than 20 percent, or an increase of more than 10 percent in length overall (LOA), gross registered tonnage (GRT), or net tonnage (NT) relative to the respective specifications of the first vessel issued the initial limited access permit (the baseline vessel). If any of the three vessel size specifications is increased, any increase in the other two must be performed at the same time. The regulations also specify that vessel horsepower and vessel size may be increased only once. However, an increase in vessel size may be performed separately from an increase in vessel horsepower. These regulations have been in effect since 1999.

There are six different HMS limited access permits: 1) directed swordfish; 2) incidental swordfish; 3) swordfish handgear; 4) directed shark; 5) incidental shark; and, 6) tuna longline. Swordfish directed and incidental permits are valid only if the permit holder also holds both a tuna longline and a shark permit. Similarly, the tuna longline permit is valid only if the permit holder also holds both a limited access swordfish (directed or incidental, not handgear) and a shark permit. Swordfish handgear and shark permits are valid without another limited access permit. As of February 2006, there were 1,131 total HMS commercial fishing permits (191 directed swordfish, 86 incidental swordfish, 88 swordfish handgear, 240 directed shark, 312 incidental shark, and 214 tuna longline). However, there were only 604 permit holders since permit holders may hold more than one permit.

As of September 26, 2006, there were 176 vessels that were authorized to fish with longline gear for swordfish and tunas (*i.e.*, the vessel possessed a tuna longline permit and the appropriate limited access permits for swordfish and sharks). However the number of “active” PLL vessels in 2005 was 110. An “active” PLL vessel is considered to be a vessel that reported PLL activity in the HMS logbook. The number of active HMS PLL vessels has been precipitously decreasing since 1994. Table 7 lists the number of active PLL vessels from 1990 to 2005.

**Table 7. The Number of Vessels that Reported Fishing with Pelagic Longline Gear in the HMS Logbook. Source HMS Logbook.**

<b>Year</b>	<b>Number of Active Vessels</b>
1990	416
1991	333
1992	337
1993	434

<b>Year</b>	<b>Number of Active Vessels</b>
1994	501
1995	489
1996	367
1997	350
1998	268
1999	224
2000	199
2001	161
2002	148
2003	126
2004	116
2005	110

The No Action alternative (2a) would maintain the current HMS limited access vessel upgrading restrictions. Aside from limiting overall fleet capacity, the rationale for selecting the current restrictions (10 percent LOA, GRT, & NT; and 20 percent HP) in 1999 was based, in part, on maintaining consistency with existing limited access upgrading restrictions that were, and still are, in place for vessels issued limited access permits for fisheries of the Northeastern United States. As of September 25, 2006, 25 percent of vessels issued limited access Incidental or Directed swordfish permits, and 45 percent of vessels issued limited access swordfish Handgear permits, also possessed a limited access permit for fisheries of the Northeastern United States.

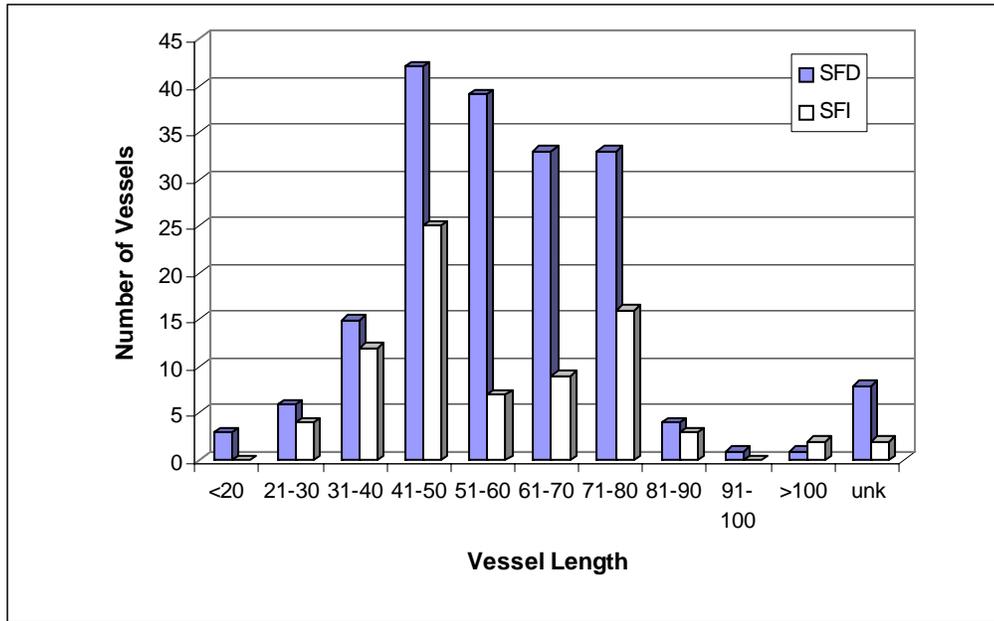
As discussed under Alternative 1a and above, the ecological impacts associated with the No Action alternative have been positive due to the cumulative effects of the many HMS management measures that have been implemented since 2000. These measures include, but are not limited to, limited access permits, quotas, minimum size restrictions, vessel monitoring system (VMS) requirements, gear restrictions (large circle hooks, gangion length, non-stainless hooks, etc.), dealer and vessel logbook reporting, a live bait prohibition in the GOM, a shark finning prohibition (implemented in 1993), landing restrictions, and large closed areas for PLL and BLL gear. As a result, PLL landings of most target species have been in decline since 1999. The North Atlantic swordfish stock is 99 percent rebuilt, and bycatch and bycatch mortality of protected and non-target species have been reduced. In addition, the number of active PLL vessels has steadily declined. However, several HMS species including bluefin tuna, white marlin, blue marlin, sandbar sharks, and dusky sharks are still in need of rebuilding. In addition, bycatch and bycatch mortality of endangered leatherback and threatened loggerhead sea turtles in PLL fisheries remains a concern.

Similar to Topic 1, all of the management measures described above which have produced positive ecological benefits under the No Action alternative, including

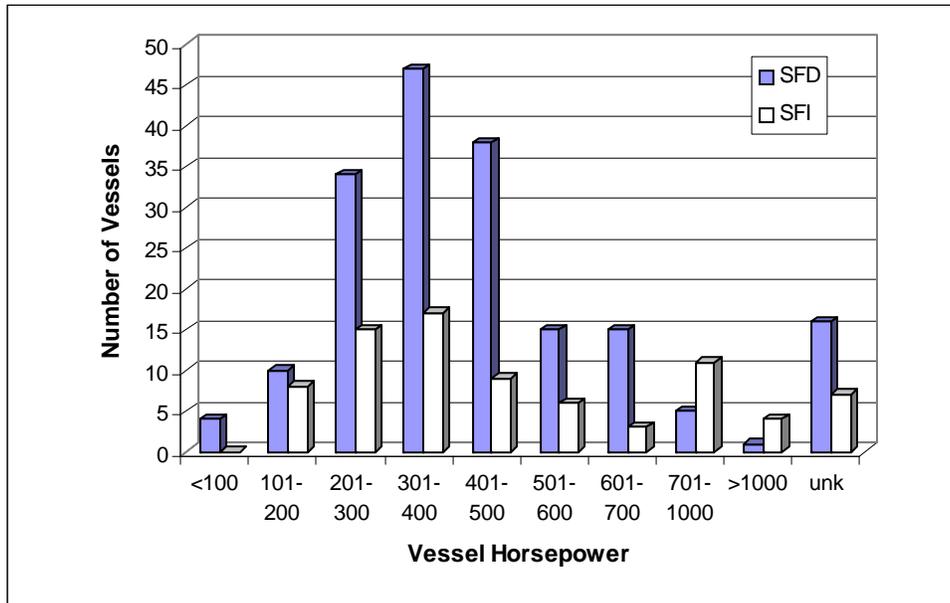
time/area closures and circle hooks for PLL vessels, would remain in effect under all of the other alternatives considered. The remainder of this section focuses specifically on HMS limited access vessel-upgrading restrictions.

Figures 10 and 11, below, show the length and horsepower distribution of vessels issued Directed and Incidental limited access swordfish permits. Figures 12 and 13, below, show the same information for vessels issued limited access swordfish Handgear permits. Under No Action alternative 2a, these vessel specifications are expected to remain relatively static (although vessels that have not already been upgraded could increase by 10 percent in LOA, GRT & NT; and 20 percent in HP). These figures indicate that the preponderance of vessels possessing either an Incidental or Directed swordfish limited access permit are between 40 – 80 feet in length and between 200 – 500 horsepower. Eleven vessels are greater than 80 feet in length, and 36 vessels are greater than 500 horsepower. The preponderance of vessels possessing a limited access swordfish Handgear permit are between 20 – 40 feet in length and between 200 – 500 horsepower. Thirty-five of these vessels are greater than 40 feet in length, and 29 of these vessels are greater than 500 horsepower. The number of vessels that have been upgraded since 1999 was not available for inclusion in this document.

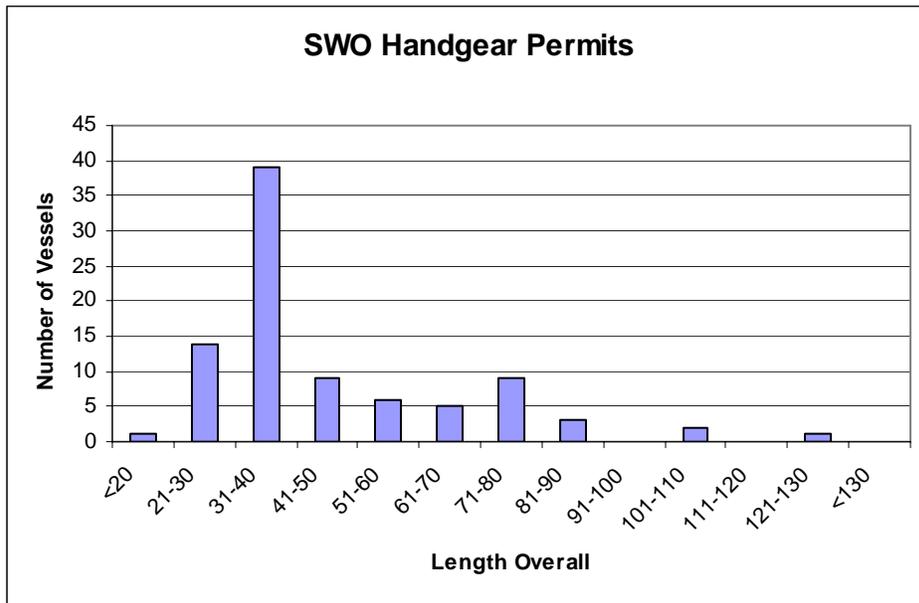
Based on the data in Figures 10 – 13, it is difficult to characterize an “average” swordfish vessel. However, for purposes of analysis, an “average” Directed or Incidental swordfish limited access vessels may be approximately 55 feet in length and 425 horsepower. Similarly, an “average” swordfish Handgear vessel may be approximately 35 feet in length and 400 horsepower. The No Action alternative would be expected to maintain these specifications. Fleet capacity would remain at approximately the same level as in 1999, when the upgrading restrictions were first implemented.



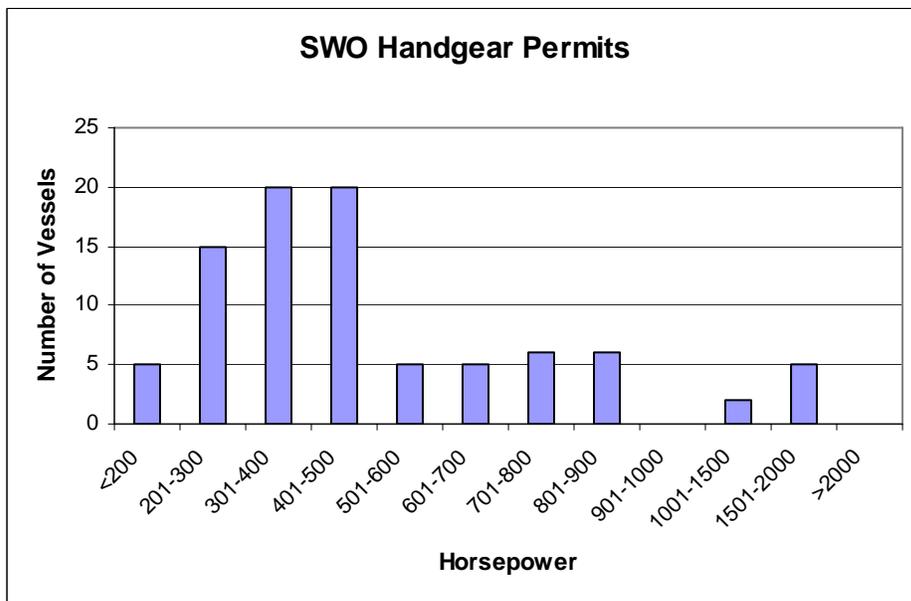
**Figure 10. Range of Lengths (LOA) for Vessels Possessing Limited Access Directed and Incidental Swordfish Permits as of September 19, 2006.** Source: NMFS Southeast Regional Office Permits Database.



**Figure 11. Range of Horsepower for Vessels Possessing Limited Access Directed and Incidental Swordfish Permits as of September 19, 2006.** Source: NMFS Southeast Regional Office Permits Database.



**Figure 12. Range of Lengths (LOA) for Vessels Possessing Limited Access Swordfish Handgear Permits as of September 19, 2006.** Source: NMFS Southeast Regional Office Permits Database



**Figure 13. Range of Horsepower for Vessels Possessing Limited Access Swordfish Handgear Permits as of September 19, 2006.** Source: NMFS Southeast Regional Office Permits Database.

The No Action alternative may cause some indirect adverse ecological impacts that are not readily apparent. During public meetings addressing the domestic swordfish fishery conducted in September 2006, it was mentioned that the current upgrading restrictions

might affect the ability to carry observers onboard vessels, due to inadequate bunk or berthing space. The current regulations specify that NMFS may select any vessel issued a commercial HMS permit for at-sea observer coverage. Vessels that would otherwise be required to carry an observer, but are inadequate for purposes of carrying an observer and allowing for operation of normal observer functions, are prohibited from fishing without observer coverage. The HMS regulations require the owner or operator of a vessel on which an NMFS-approved observer is embarked to provide accommodations for observers that are equivalent to those provided the crew. Observers are not required to board, or stay aboard, a vessel that is unsafe or inadequate. In some situations, the HMS vessel upgrading restrictions may be inadvertently preventing vessel owners from enlarging their vessels so that they can carry observers. Valuable Agency resources may be expended selecting vessels, deploying observers, and then later determining that the vessel's accommodations are not adequate. This process may impact the collection and analysis of important observer data. It may also affect the ability of some vessels to go fishing.

During public meetings conducted in September 2006, it was also mentioned that the current vessel upgrading restrictions might prevent operators from fishing further offshore. Smaller vessels are limited in the distances they can travel offshore due to concerns about safety, comfort, fuel capacity, and hold capacity. This can result in excessive fishing effort in nearshore nursery areas, and potential gear conflicts. Larger vessels have the ability to travel further offshore and may be more adept at targeting larger swordfish, avoiding other users, and dispersing their fishing effort.

To summarize, the No Action alternative has been effective at limiting capacity in HMS fisheries. In addition to the suite of other HMS management measures that have been implemented in recent years, the vessel upgrading restrictions have contributed to reductions in fishing effort, bycatch, and landings of target species. However, the vessel upgrading restrictions may also have unintentionally affected the collection of observer data and prevented vessels from accessing offshore fishing grounds. Finally, the current upgrading restrictions may adversely affect the ability of the U.S. to fully harvest its swordfish quota.

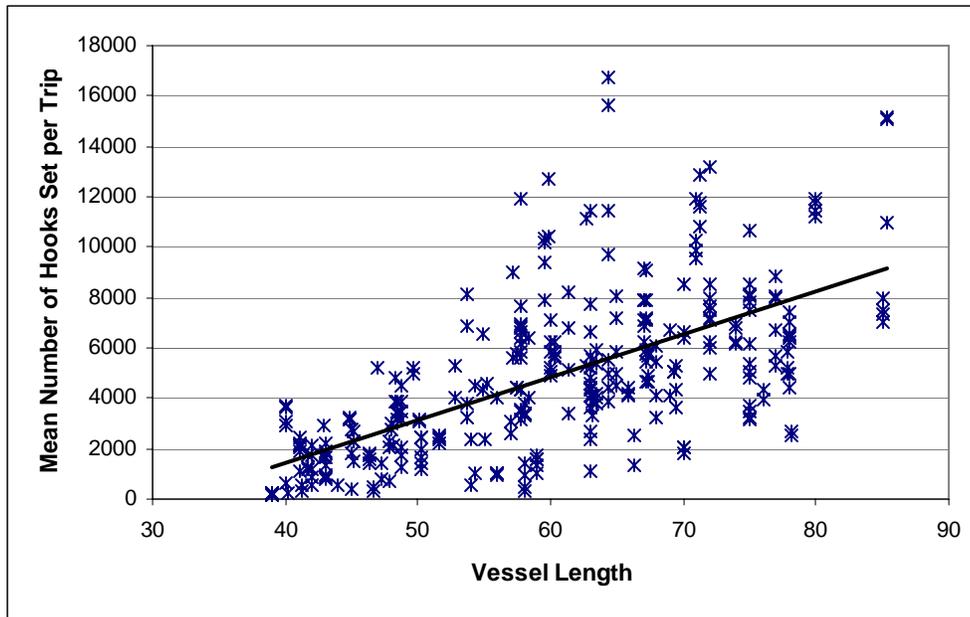
Alternative 2b would waive all vessel upgrading and permit transfer upgrading restrictions for PLL vessels (*i.e.*, vessels that possess an Atlantic tunas longline permit, as well as limited access permits for swordfish and sharks) for 10 years, after which a new vessel baseline would be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect. This alternative could potentially have adverse ecological impacts, although it is not possible to quantify the magnitude of impacts.

The decision to upgrade a fishing vessel, or to purchase a new vessel and transfer the permits, is personal. Similarly, the desired size and capacity of the new or upgraded vessel is personal. As with any major purchase, a variety of factors must be considered. Some of these include, but are not limited to, the cost of the new or upgraded vessel, the ability to obtain financing, profitability and condition of the existing vessel, operating costs associated with a larger vessel, anticipated future economic returns from the new or

upgraded vessel, whether the vessel is limited by upgrading restrictions for other fisheries (*i.e.*, Northeastern fisheries), and even the age of the owner. Inevitably, each situation is unique. A young owner of a small boat with high future expectations for the fishery and a good credit history might be more inclined to upgrade a vessel or to purchase a larger vessel than an older boat owner who might choose to keep the existing vessel and minimize costs before exiting the fishery. Also, if the vessel possesses limited access permits for Northeastern fisheries, a business decision would have to be made as to whether it is better to upgrade for HMS fisheries and potentially forfeit the ability to participate in Northeastern fisheries, or to keep the vessel within the Northeastern specifications. Therefore, it is not possible to accurately predict how many vessels will be upgraded, or the anticipated future capacity of the fishery, because the prediction is dependent upon the personal choices of many individual boat owners.

Alternative 2b would not impose an upper limit on the magnitude of upgrades, and is restricted only to vessels that possess the permits necessary to fish for tunas and swordfish with longline gear. For purposes of analysis, the optimal size for Incidental and Directed swordfish vessels is assumed to range from 40 – 80 feet, based on the data provided in Figure 10. The smaller vessels range from 40 – 60 feet, and the larger vessels range from 60 – 80 feet. Assuming that all owners of smaller vessels (40 – 60 ft.) would consider upgrading to bigger vessels (60 – 80 ft), Figure 4 would indicate that up to 113 vessels might be increased in size by 1 – 100 percent. However, because only 65 percent of swordfish permit holders possess the requisite permits needed to fish with longline gear, up to 73 vessel owners would be likely to consider upgrading their vessels by 1 – 100 percent under this alternative. Finally, because 25 percent of swordfish Incidental and Directed permit holders also hold permits for Northeastern fisheries and may choose not to upgrade in order to retain their eligibility for these fisheries, it is projected that approximately 55 vessels might be upgraded by 1 – 100 percent under this alternative. At the opposite end of the spectrum, for the reasons discussed above, it is also possible that all PLL vessels could increase by an unlimited amount or, conversely, none of the PLL vessels would be upgraded.

In general, a larger PLL vessel will exert more fishing effort, in terms of numbers of hooks fished per trip, than a smaller vessel. This may be attributed to the ability to take longer trips, carry more crewmembers, or because larger vessels can carry and deploy more line. Figure 14 indicates the average number of hooks fished per trip by vessel length using data from the HMS logbook from 2002 – 2005. It shows that a 40-foot vessel might deploy approximately 1,700 hooks, a 50-foot vessel might deploy approximately 3,000 hooks per trip, a 60-foot vessel might deploy 4,400 hooks, a 70-foot vessel might deploy approximately 6,200 hooks per trip, and an 80-foot vessel might deploy approximately 8,000 hooks per trip. However, some vessels may be upgraded for reasons other than increased productivity such as improved comfort, stability, safety, and transiting speed. It is also possible that smaller vessels might take more trips per year, so the annual number of hooks fished per year is comparable. That analysis was not available for this document. For this analysis, it is assumed that larger vessels generally deploy more hooks per trip.



**Figure 14.** Average Number of Hooks Set per Trip by PLL vessels vs. Vessel Length from 2002 – 2005. Source: HMS Logbook 2002 – 2005.

Assuming that larger vessels deploy more fishing hooks, this alternative could produce adverse ecological impacts resulting from more interactions with target, non-target, and protected species. However, while fishing effort is anticipated to increase by an unknown amount, the ecological impacts would be limited, especially in the short term. This is because PLL vessels would still be required to deploy circle hooks, utilize release and disentanglement gear, utilize specific baits, and be prohibited from fishing in large PLL closed areas. As described in the No Action alternative, these measures have significantly reduced bycatch in the PLL fishery since 2000. Also, any potential adverse impacts associated with this alternative, including a potential increase in fishing effort, would not be realized in the short term. It would likely be months, and possibly years, before the full impacts reach fruition. This is because PLL vessel upgrading, construction, and/or purchases could take a long time to secure financing, place orders, and complete the necessary work. The most immediate impacts would result from vessel purchases and permit transfers to existing vessels. Both short-term and long-term impacts are expected to be limited, as discussed above, because existing measures to reduce bycatch and bycatch mortality would remain in effect.

Positive ecological benefits may result from this alternative if vessels are upgraded and operators fish further offshore, thus dispersing effort and potentially reducing fishing activity in nearshore areas which are often spawning or nursery areas, or populated with juveniles. If more vessels fish further offshore, this could reduce potential gear conflicts. This alternative could also increase swordfish landings and help to achieve the ICCAT-recommended domestic swordfish quota. If adverse ecological impacts remain in check, including interactions with sea turtles, protected, and non-target species, this alternative could have the positive benefit of demonstrating to other nations that sound conservation measures and an economically viable PLL fishery can occur simultaneously. In the long-

term, positive benefits could result from improved collection and analysis of observer data. This alternative could also improve the ability of the U.S. to harvest its swordfish quota.

In summary, Alternative 2b is anticipated to result in some adverse ecological impacts over the long term, because there would be no limit on the size to which PLL vessels could be upgraded. It is not possible to accurately predict, however, the magnitude of impacts because the decision to upgrade is personal. Given these caveats, a rudimentary projection indicated that 55 vessels in the 40 – 60 foot range might be upgraded to between 60 – 80 feet. Caution is urged in relying too heavily on this projection because of the uncertainty regarding business owner's decisions. If many HMS vessels are upgraded, there could be an increase in fishing effort and interactions with target, non-target and protected species. These, however, would not be fully realized in the short term as purchase and/or construction would take months, if not years, to complete. A potentially positive benefit of this alternative would be to provide additional opportunities for commercial PLL vessels to fish further offshore, thus relieving fishing effort on nearshore spawning, nursery, or juvenile grounds. Also, if PLL vessels are able to land more swordfish while minimizing bycatch and bycatch mortality as a result of this alternative, it could have long-term positive benefits internationally if foreign nations adopt similar bycatch reduction measures. Finally, the collection and analysis of observer data could improve.

Alternative 2c would waive HMS upgrading and permit transfer upgrading restrictions for vessels issued swordfish Handgear permits for 10 years, after which a new baseline would be established and the 10 percent LOA, GRT, NT and 20 percent HP restrictions would go back into effect. This alternative could potentially have adverse ecological impacts, although it is not possible to quantify the magnitude of impacts. For the same reasons that were discussed in Alternative 2b, it is not possible to accurately predict how many vessels would be upgraded, or the anticipated future capacity of the fishery, because the prediction is dependent upon the personal choices of many individual boat owners.

Alternative 2c would not impose an upper limit on the magnitude of upgrades, and is restricted only to vessels that possess limited access swordfish Handgear permits. For purposes of analysis, the optimal size for swordfish Handgear vessels is assumed to range from 20 – 40 feet, based on the data in Figure 4. The smaller vessels range from 20 – 30 feet, and the larger vessels range from 30 – 40 feet. Assuming that all owners of smaller vessels (20 – 30 ft.) would consider upgrading to bigger vessels (30 – 40 ft), Figure 12 would indicate that up to 14 vessels might be increased in size by 1 – 100 percent. However, because 45 percent of swordfish Handgear permit holder also hold permits for Northeastern fisheries and may choose not to upgrade in order to retain their eligibility for these fisheries, it is projected that approximately eight vessels might be upgraded by 1 – 100 percent under this alternative. It was mentioned during public meetings conducted during September 2006, that HP is an important factor for swordfish Handgear vessel operators to take more and longer fishing trips. Again, Figure 12 would indicate that approximately 15 vessels might be increased from 200 HP to between 300 – 400 HP.

However, because 45 percent of these vessels also possess permits for Northeastern fisheries and may choose not to upgrade in order to retain their eligibility for these fisheries, it is projected that approximately eight vessels might be upgraded by 1 – 100 percent in HP under this alternative. At the opposite end of the spectrum, for the reasons discussed above, it is also possible that all swordfish Handgear vessels could increase by an unlimited amount or, conversely, none of the Handgear vessels would be upgraded.

It is probable that a larger swordfish Handgear vessel would exert more fishing effort than a smaller vessel, primarily due to the ability to take longer and more frequent trips. However, some vessels may be upgraded for reasons other than increased productivity such as comfort, stability, safety, and transiting speed. Nevertheless, for this analysis it is assumed that, in general, larger handgear vessels deploy more hooks by taking longer and more frequent trips.

Assuming that larger vessels deploy more fishing hooks, or take longer or more frequent trips, it is possible that this alternative could produce some adverse ecological impacts resulting from more interactions with target species, especially in areas that are closed to PLL gear. Interactions with non-target and protected species are not expected to be significant, as the handgear fishery primarily uses rod & reel and, to a lesser extent, buoy gear. However, a large expansion of the commercial handgear fishery, especially in the East Florida Coast PLL closed area, could increase bycatch and discards of undersized swordfish. Bycatch mortality could also increase, as this fishery is not currently required to deploy circle hooks or to utilize release and disentanglement gear. Additionally, the buoy gear fishery is relatively new. The full extent of the ecological impacts associated with this fishery are not currently well documented, although limits on the amount of buoy gear that may be deployed and other requirements were recently implemented in the Consolidated HMS FMP (2006). Any potential adverse impacts associated with this alternative, including a potential increase in fishing effort, would not be realized in the short term. It would likely take months before the full impacts reach fruition. This is because vessel upgrading, construction, and/or purchases take time to secure financing, place orders, and complete the necessary work. The most immediate impacts would result from vessel purchases and permit transfers to existing vessels. The Handgear fleet may be able to accomplish these activities sooner than the PLL fleet because more suitable boats may be available and, if HP is the primary constraint, because HP can generally be increased relatively quickly. Nevertheless, it would still take some time before noticeable impacts are actually realized on the water. Both short-term and long-term impacts are expected to be limited, as discussed above, because existing measures to reduce bycatch and bycatch mortality would remain in effect.

Due to its proximity to the East Florida Coast PLL closed area, the swordfish handgear fishery is currently most active in the Straits of Florida, according to anecdotal information. This is the same area that has experienced a recent resurgence in recreational swordfish fishing. Therefore, unlike Alternative 2b, this alternative is not expected to increase the amount of fishing further offshore or reduce impacts in spawning or nursery areas, or areas populated with juvenile swordfish. It is anticipated that this alternative could increase gear conflicts with recreational anglers.

This alternative could increase swordfish landings and help to achieve the ICCAT-recommended domestic swordfish quota. In the long-term, positive benefits could result in improved collection and analysis of observer data, which would be especially beneficial for the swordfish handgear fishery.

In summary, this alternative would likely be effective at increasing domestic swordfish landings and more fully harvesting the U.S. swordfish allocation. In the long-term, positive benefits could result due to improved collection and analysis of observer data, which would be especially beneficial for the swordfish handgear fishery. However, alternative 2b is not preferred because it could result in adverse ecological impacts because there would be no limit on the size to which swordfish Handgear vessels could be upgraded. It is not possible to accurately predict the magnitude of impacts, because the decision to upgrade is personal. Given these caveats, a rudimentary projection indicated that approximately 14 vessels in the 20 – 30 foot range might be upgraded to between 30 – 40 feet, and up to 300 – 400 HP. Caution is urged in relying too heavily on this projection because of the uncertainty regarding business owner's decisions. If many swordfish Handgear vessels are upgraded, there could be an increase in fishing effort and interactions with undersized swordfish. It is possible that this alternative also could increase gear conflicts with recreational anglers. These impacts, however, would not be fully realized in the short-term as purchase and/or construction would likely take months to complete. The Agency is concerned about potential adverse impacts and, at the present time, prefers to proceed precautiously with the development of a burgeoning commercial swordfish handgear fishery. As data becomes available regarding the newly authorized buoy gear fishery, the Agency may consider modifying the upgrading restrictions for swordfish Handgear permit holders in the future, as part of a longer term strategy to address persistent underharvests of the U.S. swordfish allocation.

Alternative 2d would waive all HMS limited access vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new vessel baseline would be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect. This alternative could potentially have the most severe adverse ecological impacts compared to the other alternatives because the universe of affected vessels is substantially larger, however it is not possible to precisely quantify the magnitude of impacts for the reasons discussed above.

Alternative 2d would not impose an upper limit on the magnitude of upgrades, and is inclusive of all vessels that possess an HMS limited access permit. As mentioned above, there are six different HMS limited access permits: 1) directed swordfish; 2) incidental swordfish; 3) swordfish handgear; 4) directed shark; 5) incidental shark; and, 6) tuna longline. Swordfish directed and incidental permits are valid only if the permit holder also holds both a tuna longline and a shark permit. Similarly, the tuna longline permit is valid only if the permit holder also holds both a limited access swordfish (directed or incidental, not handgear) and a shark permit. Swordfish handgear and shark permits are valid without another limited access permit. As of February 2006, there were 1,131 total HMS commercial fishing permits (191 directed swordfish, 86 incidental swordfish, 88

swordfish handgear, 240 directed shark, 312 incidental shark, and 214 tuna longline). However, there were only 604 actual permit holders since vessel owners may hold more than one permit.

Alternatives 2b and 2c were limited to vessels eligible to fish for swordfish and tunas with longline gear, and swordfish Handgear vessels, respectively. Alternative 2d includes those vessels, as well as all vessels that are eligible to fish for sharks. Therefore, approximately 376 additional vessels could be eligible for unlimited upgrades under this alternative (240 directed shark + 312 incidental shark – 176 vessels that eligible to fish with longline gear for tunas and swordfish). The analyses for Alternatives 2b and 2c indicated that approximately 55 or more PLL vessels, and approximately eight swordfish handgear vessels, might be upgraded by 1 – 100 percent under those alternatives. Information on the size and HP distribution for vessels possessing shark permits was not available for this document; therefore, no description is provided regarding the number and likely magnitude of any increases. It is assumed that all of these additional shark vessels could be upgraded under this alternative, but that few would take immediate advantage of the opportunity given current uncertainties in the domestic shark fishery. Also, Incidental shark permit holders are governed by retention limits for LCS, SCS and pelagic sharks. Directed shark permit holders are governed by retention limits for LCS. Unless a vessel's size prohibits the landing of these retention limits, or a Directed shark permit holder intends to land more SCS, a shark permit holder may not need to enlarge their vessel.

A recent stock assessment conducted in 2005 and 2006 found that the large coastal shark (LCS) stock status is unknown. Similarly, the stock status of Atlantic blacktip sharks is unknown. Gulf of Mexico blacktip sharks are not overfished and overfishing is not occurring. Sandbar sharks are overfished and overfishing is occurring. Finally, dusky sharks were found to be heavily exploited. A stock assessment for small coastal sharks (SCS) is underway and should be completed in 2007. A 2002 stock assessment for SCS found the biomass in any given year from 1972 – 2000 exceeded the biomass producing maximum sustainable yield (MSY). Relative fishing mortality (F/F<sub>msy</sub>) was generally below one for the SCS complex, except for finetooth shark for which the values of F were above the level of F corresponding to MSY. Results of recent stock assessments for pelagic sharks are considered preliminary, due to limitations on quality and quantity of catch data. See the 2006 HMS Consolidated HMS FMP for a more complete description of these stock assessments. Given these recent stocks assessments and changes in the status of several species, NMFS is initiating an amendment to the domestic shark regulations. Participants in the shark fishery may currently be more inclined to wait before taking advantage of any modified vessel upgrading restrictions.

As indicated above, it is assumed that larger vessels exert more fishing effort than smaller vessels, although that may not always be the case. Sharks, in particular, are governed by incidental retention limits, and directed limits for LCS, so larger vessels may not exert more effort, if they are currently able to land the full retention limit. However, for this analysis it is assumed that, in general, larger vessels exert more fishing effort (hooks, days, etc.). Assuming that larger vessels deploy more fishing effort, it is possible that

Alternative 2d could produce adverse ecological impacts resulting from more interactions with target, non-target, and protected species. These impacts would include all of those, positive and negative, that were discussed for Alternatives 2b and 2c above. In addition, this alternative could result in adverse impacts on some shark species. However, because the status of several shark species or complexes is unknown, it is difficult to characterize these impacts. Given their overfished status, any increased fishing effort on sandbar, dusky, or finetooth sharks would be considered negative. Some ecological impacts on target and protected species associated with this alternative might be mitigated by the Mid-Atlantic shark BLL closed area, and requirements for shark BLL vessels to possess and utilize careful release and disentanglement equipment. Any potential adverse impacts associated, including a potential increase in fishing effort, with this alternative would not be realized in the short term. It would likely be months, and possibly years, before the full impacts reach fruition. This is because vessel upgrading, construction, and/or purchases take time to secure financing, place orders, and complete the necessary work. The most immediate impacts would likely result from vessel purchases and permit transfers to existing vessels.

This alternative could increase swordfish landings and help to achieve the ICCAT-recommended domestic swordfish quota because it incorporates all HMS limited access permits, including those discussed in Alternatives 2b and 2c. In the long-term, positive benefits could result in improved collection and analysis of observer data.

In summary, Alternative 2d is anticipated to result in the most severe adverse ecological impacts compared to the other alternatives because the universe of affected vessels is substantially larger, and because there would be no limit on the size to which all HMS limited access vessels could be upgraded. It is not possible to accurately predict, however, the magnitude of impacts that may result from this alternative because the decision to upgrade is personal. Given these caveats, rudimentary projections indicated that approximately 55 PLL vessels in the 40 – 60 foot range might be upgraded to between 60 – 80 feet; approximately 14 swordfish Handgear vessels in the 20 – 30 foot range might be upgraded to between 30 – 40 feet, and up to 300 – 400 HP; and, a small number of the approximately 376 additional vessels with shark limited access permits would upgrade their vessels, given current uncertainties regarding the shark fishery such as the upcoming SCS stock assessment, and anticipated amendments to the shark regulations. Again, caution is urged in relying too heavily on these projections because the previously discussed uncertainties regarding business owner's decisions. If many HMS limited access vessels are upgraded, there could be an unquantifiable increase in fishing effort and interactions with target, non-target and protected species. These impacts, however, would not be fully realized in the short-term as purchase and/or construction would likely take time to complete. This alternative would likely be effective at increasing domestic swordfish landings and more fully harvesting the U.S. swordfish allocation. Finally, in the long-term, positive benefits could result due to improved collection and analysis of observer data.

Alternative 2e, a preferred alternative, would establish new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for HMS vessels that are

authorized to fish with pelagic longline for swordfish and tunas, equivalent to 35 percent LOA, GRT, and NT, as measured relative to the baseline vessel specifications (i.e., the specifications of the vessel first issued an HMS limited access permit), and would remove HP upgrading and HP permit transfer upgrading restrictions for these vessels. In addition, this alternative has been modified to remove the requirement that limits all HMS limited access permit holders to only one upgrade, up to the maximum allowable size and horsepower. All HMS limited access permit holders would be allowed as many incremental upgrades as they want, up to the allowable maximums.

Except for the No Action alternative, Alternative 2e is anticipated to have the lowest degree of adverse ecological impacts because it establishes an upper limit on vessel size and because it is restricted only to PLL vessels. However, for the same reasons discussed above in Alternative 2b, it is not possible to accurately predict how many vessels would be upgraded, or the anticipated future capacity of the fishery, because the prediction is dependent upon the personal choices of many individual boat owners.

Alternative 2e would impose an upper limit on the magnitude of vessel size upgrades (LOA, GRT, & NT) but not HP, and is restricted only to vessels that possess the permits necessary to fish for tunas and swordfish with pelagic longline gear (i.e., vessels that possess an Atlantic tunas longline permit, as well as limited access permits for swordfish and sharks). For purposes of analysis, the optimal size for Incidental and Directed swordfish vessels is assumed to range from 40 – 80 feet, based on the data in Figure 10. The smaller vessels range from 40 – 60 feet, and the larger vessels range from 60 – 80 feet. Assuming that all owners of vessels 40 – 70 ft. would consider upgrading to bigger vessels, Figure 10 indicates that up to 155 vessels might be increased in size by 25 to 35 percent (note: vessels that have already been upgraded by 10 percent would only be eligible for a 25 percent increase under this alternative). However, because only 65 percent of swordfish permit holders possess the requisite permits needed to fish with longline gear, up to 101 vessel owners would be likely to consider upgrading their vessels by 25 – 35 percent under this alternative. Finally, because 25 percent of swordfish Incidental and Directed permit holders also hold permits for Northeastern fisheries and may choose not to upgrade in order to retain their eligibility for these fisheries, it is projected that approximately 76 vessels might be upgraded. For an “average” 55-foot swordfish vessel, this would result in 69 – 74 foot vessel, depending upon whether the vessel has already been upgraded. At the opposite end of the spectrum, for the reasons discussed above, it is also possible that all PLL vessels could increase by 25 – 35 percent or, conversely, none of the PLL vessels would be upgraded.

As indicated above, it is assumed that larger vessels would exert more fishing effort, in terms of number of hooks fished per trip, than smaller vessels, although that may not always be the case. Figure 14 indicates that an “average” 55-foot PLL vessel might fish 4,000 hooks per trip, a 69-foot vessel might fish 6,100 hooks per trip, and a 74-foot vessel might fish 7,000 hooks per trip. Assuming that larger vessels deploy more fishing hooks, this alternative could produce adverse ecological impacts resulting from more interactions with non-target, and protected species. However, while fishing effort may increase by an unknown amount, the ecological impacts would be limited, especially in

the short term. This is because PLL vessels will still be required to abide by quotas, deploy only large circle hooks, utilize specific baits, abide by minimum size restrictions, carry and utilize release and disentanglement gear, abide by retention limits, comply with vessel monitoring system requirements (VMS), and comply with large PLL closed area restrictions, among other measures. As described in the No Action alternative, these measures have significantly reduced bycatch in the PLL fishery since 2000. Also, any potential adverse impacts associated with this alternative, including a potential increase in fishing effort, are not likely to be realized in the short term. It may be months, and probably years, before the full impacts reach fruition. This is because PLL vessel upgrading, construction, and/or purchases take a long time to secure financing, place orders, and complete the necessary work. The most immediate impacts will likely result from vessel purchases and permit transfers to existing vessels. Both short-term and long-term impacts are expected to be limited, as discussed above, because existing measures to reduce bycatch and bycatch mortality would remain in effect.

Alternative 2e has been modified from the Draft Environmental Assessment by including a provision to remove the “one-time only” upgrading requirement, that restricts permit holders to only one upgrade and prohibits incremental upgrades up to the allowable maximum. This modification is being made in response to comments received from NMFS’ Southeast Region Permits Office, who indicated that this requirement greatly impedes the expeditious issuance of permits because office staff must physically review up to seven years worth of paperwork to determine if a vessel has been upgraded more than once. This information was not recorded in the computer database until very recently. It is not possible to precisely quantify the environmental impacts of this modification because, if a permit renewal was denied for violating the “one time only” restriction, the permit was not issued or recorded in the database so there is limited information regarding exactly how many vessels are being affected by the regulation. However, some permit holders have upgraded their vessels by amounts less than those allowed, and are therefore limited by the “one time only” restriction. The preferred alternative could cause an unquantifiable, but minor, increase in fishing effort. It is not expected to be significant because NMFS has assumed, for the purpose of analysis that limited access permit holders would typically upgrade their vessels to the maximum extent allowable. The additional amount of vessel upgrading that could occur by removing the “one time only” restriction has already been considered, and environmental impacts are expected to be minimal.

Some positive ecological benefits could result from this alternative if vessels are upgraded and operators fish further offshore, thus dispersing effort and potentially reducing fishing activity in nearshore areas which are often spawning or nursery areas, or populated with juveniles. If more PLL vessels fish further offshore, potential gear conflicts could be reduced. This alternative could also increase swordfish landings and help to achieve the ICCAT-recommended domestic swordfish quota. If adverse ecological impacts remain in check, including interactions with sea turtles, protected, and non-target species, this alternative could have the positive benefit of demonstrating to other nations that sound conservation measures and an economically viable PLL fishery

can occur simultaneously. Finally, in the long-term, positive benefits could result in improved collection and analysis of observer data.

In summary, Alternative 2e is expected to have the lowest degree of adverse ecological impacts among all of the alternatives, except for Alternative 2a. To the degree that fishing effort correlates with vessel size, any adverse ecological impacts would be limited by the 35 percent restriction on size (LOA, GRT, & NT) that this alternative would impose. Also, because this alternative is restricted only to vessels possessing certain HMS permits, most adverse ecological impacts would be mitigated by existing PLL management measures that have significantly reduced bycatch in recent years, including large PLL closed areas, circle hook and bait restrictions, minimum size restrictions, commercial quotas, retention limits, VMS requirements, and requirements to possess and utilize release and disentanglement equipment, among other measures. Caution is urged in relying too heavily on any projections under this alternative because of the uncertainty regarding business owner's decisions. It is not possible to predict how many vessel owners will choose to upgrade their vessels. Given these caveats, a rudimentary projection indicated that 76 PLL vessels in the 40 – 70 foot range might be upgraded to between 54 – 94 feet. For an “average” 55-foot swordfish vessel, this would result in 69 – 74 foot vessel, depending upon whether the vessel has already been upgraded. Unlimited HP upgrades would be allowed under this alternative, but HP is not a major factor influencing fishing effort in commercial longline fisheries. If many HMS vessels are upgraded, there could be a corresponding increase in fishing effort and an increase in interactions with non-target and protected species. Existing PLL management measures that would remain in effect, however, would mitigate these. Also, any ecological impacts would not be fully realized in the short-term as vessel purchase and/or construction would take months, if not years, to complete. A potentially positive benefit associated with this alternative would be to provide additional opportunities for commercial PLL vessels to fish further offshore, thus relieving fishing effort on nearshore spawning, nursery, or juvenile grounds. Also, if PLL vessels are able to land more swordfish while minimizing bycatch and bycatch mortality as a result of this alternative, it could have positive long-term benefits internationally throughout the Atlantic basin. The collection and analysis of observer data could improve if more vessels are able to carry observers. Finally, this alternative could increase opportunities to land the U.S. swordfish quota.

### ***Social and Economic Impacts***

NMFS would be implementing all of the alternatives that are identified as preferred. The cumulative and combined impacts associated with implementing all of these preferred alternatives are described in Section 4.9 of this document

Alternative 2a (No Action) would maintain the status quo. Under this No Action alternative, there would be no change in the current baseline economic and social impacts associated with previously implemented North Atlantic swordfish vessel upgrade restriction regulations.

The baseline of effected entities includes 604 unique HMS limited access permit holders. As of September 26, 2006, there were 176 vessels that were authorized to fish with

longline gear for swordfish and tunas (*i.e.*, the vessel possessed a tuna longline permit and the appropriate limited access permits for swordfish and sharks). Of these 176 permitted vessels, only 110 reported PLL activity in the HMS logbook in 2005. As shown in Table 7, the number of active PLL vessels has decreased by about 50 percent since the upgrade restriction regulations became effective in 1999. Vessel upgrade restriction may have contributed to this decline by limiting vessel owners' ability to optimally configure their vessels to maximize their profits given changing ecological, regulatory, and market conditions.

Figures 10 and 11 provide the range of various length and horsepower configurations currently in use by Directed and Incidental swordfish permit holders. Based on current permit data, it appears that a typical Directed or Incidental swordfish limited access vessel is approximately 55 feet in length and has a 425 horsepower engine. Similarly, a typical swordfish Handgear vessel may be approximately 35 feet in length and have 400 horsepower, as shown in Figures 12 - 13.

Aside from limiting overall fleet capacity, the rationale for selecting the current restrictions was based, in part, on maintaining consistency with existing limited access upgrading restrictions that were, and still are, in place for vessels issued limited access permits for fisheries of the Northeastern United States. As of September 25, 2006, 25 percent of vessels issued limited access Incidental or Directed swordfish permits, and 45 percent of vessels issued limited access swordfish Handgear permits, also possessed a limited access permit for fisheries of the Northeastern United States. Therefore, even if current upgrade restrictions are changed for HMS swordfish permit holders, many of these permit holders may be constrained in their ability to upgrade vessels if they wish to maintain their limited access permits for fisheries of the Northeastern United States.

Maintaining the status quo would continue several negative economic impacts associated with upgrading restrictions. First, as previously mentioned, vessels may not be optimally configured for current market conditions, and therefore profits may be less than optimal. Operators of smaller vessels and vessels with lower horsepower have indicated that they would be more inclined to fish more distant locations if they were allowed to upgrade their vessels. This message was conveyed during public meetings conducted in September 2006. Other vessel operators may wish to increase hull and fuel cell capacity to fish longer without offloading, and some may wish to increase their speed in order to reduce time at sea spent reaching and returning from fishing grounds.

Second, current upgrade restrictions may affect the ability of some vessels to carry observers onboard vessels, due to inadequate bunk or berthing space. Vessels that would otherwise be required to carry an observer, but are inadequate for purposes of carrying an observer and allowing for operation of normal observer functions, are prohibited from fishing without observer coverage. Observers are not required to board, or stay aboard, a vessel that is unsafe or inadequate. In some situations, the HMS vessel upgrading restrictions may be inadvertently preventing vessel owners from enlarging their vessels so that they can carry observers. This may result in lost earnings for those vessels selected for observer coverage that are not adequately equipped to carry an observer.

Third, some fishing vessels may wish to enhance their crew quarters in order to better attract and retain labor. Anecdotally, NMFS has heard that it has been increasingly difficult for vessel owners to retain crews. Enhancing crew quarters to more modern standards could help to attract and retain crewmembers and reduce labor costs by improving the quality of life at sea for crew and captains. However, current vessel upgrade restrictions may prevent these enhancements from occurring.

Finally, limitations on vessel upgrading may affect safety at sea. In general, a larger vessel is oftentimes more seaworthy than a smaller vessel, especially in rough seas. Current restraints on vessel size may also affect the ability to modernize or purchase new vessels.

The Agency received many comments in support of the No Action alternative. These commenters generally felt that there should be no increase in commercial fleet capacity, so that the swordfish stock can continue to grow, bycatch remains low, and recreational fishing opportunities are preserved. NMFS believes that without some modification to the current upgrading restrictions, the swordfish fleet might continue to be limited in the ability to modernize, thus impacting its ability to retain crew, carry observers, fish further offshore, or increase domestic swordfish landings. The number of active PLL vessels could continue to decline along the current trajectory, and under harvests of the annual swordfish quota may continue to accrue. Allowing some modification to current vessel upgrading restrictions will provide additional opportunities to catch the U.S. swordfish quota, and existing management measures will ensure that swordfish continue to rebuild while keeping bycatch and bycatch mortality within acceptable levels. The following other alternatives considered may allow for greater flexibility, and provide for more efficient deployment of the swordfish fleet.

The potential economic benefits of the vessel upgrades would largely depend on future harvests, ex-vessel prices, fuel prices, and labor costs. These factors fluctuate, often dramatically, with market forces from year to year making any estimated benefits difficult to assess. Independent of those factors, however, vessel owners will gain the economic benefits associated with having the increased flexibility of adjusting the vessel configurations in terms of length and horsepower to best fit their business. In addition, vessel owners under this alternative would be able to better address the requirement to be able to safely take on observers, and thus avoid lost fishing time. The potential to make vessel upgrades for expansion of bunk and berthing areas associated could enhance the quality of life for crew and captains providing intangible benefits and also potentially reducing the actual costs of retaining labor. Finally, the potential to lengthen vessels and upgrade engine horsepower might have important positive safety implications, especially for smaller vessels operating far offshore in areas prone to extreme weather.

Under each of the alternatives, vessel owners will have to weigh the costs of potentially upgrading the length or horsepower of their vessels by the potential economic benefits associated with an upgrade. Many vessel owners may choose not to upgrade, even with relaxed upgrade restrictions, because of the capital costs associated with upgrading. The

main economic benefit associated with the following alternatives will likely be from not having to acquire a permit from a larger vessel, including the associated transaction costs, when an owner wishes to increase vessel size or horsepower.

The capital costs associated with potential upgrades are difficult to estimate. Large vessel length upgrades are not likely to occur by modifying existing vessels, according to several marine engineers and shipyards that NMFS contacted. They are more likely to result from the purchase of another vessel and the subsequent transfer of permits to that vessel. Horsepower upgrades are more likely to occur on existing vessels in conjunction with an engine replacement due to capital depreciation.

NMFS contacted several shipyards regarding the potential costs of new vessels and upgrades to existing vessels. The shipyards agreed that it is probably more economical to perform large vessel length increases by acquiring another larger vessel, than by modifying existing vessels. However, the estimated cost of building a new vessel is uncertain because few new vessels have been built since the upgrade restrictions were implemented in 1999, according to the shipyards contacted. The overall cost of upgrading would largely depend on the current size of the vessel, the age of the vessel, where the work will be done, financing costs, and whether an existing used vessel is available with the desired specifications, versus constructing a new vessel. For example, a 68-foot PLL vessel over 20 years old recently had a sales price of \$245,000, according to a vessel broker list. To better quantify the associated costs and potential scope of vessel upgrades, NMFS seeks comments from the public on the current market costs of upgrading PLL and swordfish Handgear vessels.

Alternative 2b would waive vessel upgrading and permit transfer upgrading restrictions for PLL vessels (*i.e.*, vessels that possess an Atlantic tunas longline permit, as well as limited access permits for swordfish and sharks) for 10 years, after which a new vessel baseline would be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect. This alternative would likely have positive economic benefits for PLL vessel owners.

As discussed above under ecological impacts, approximately 176 vessels possess the requisite permits needed to fish with longline gear for swordfish. Of these, there are only 73 vessels that are 40 to 80 feet in length, which is likely the optimal size for swordfish vessels. Because 25 percent of swordfish Incidental and Directed permit holders also hold permits for Northeastern fisheries and may choose not to upgrade in order to retain their eligibility for these fisheries, it is projected that approximately 55 vessels might upgrade under this alternative. As discussed above under the ecological impacts, the decision to upgrade a fishing vessel, or to purchase a new vessel and transfer the permits, would be a unique decision for each business based on their individual circumstances. The decision to upgrade or to not upgrade will largely depend on whether the returns expected from an upgrade outweigh the costs of planning the upgrade, construction, financing, time to complete the necessary work, age of their current vessel, and the forgone revenues associated with being out of the fishery while vessel work is being completed.

There could be some economic costs associated with expansion of capacity in the swordfish longline fleet. Any ecological impacts could potentially result in diminished quality of recreational fishing for swordfish or other species impacted by swordfish longline fishing. In addition, gear conflicts could arise if the declines in the commercial swordfish fleet reverse themselves due to any improved profitability of commercial longline vessels resulting from this proposed alternative. These factors could result in decreases in recreational anglers' willingness-to-pay to participate in recreational fishing and potentially a decline in demand for charter and headboat services. However, since larger swordfish PLL vessels are more likely to operate farther from shore, especially after upgrades, any potential gear conflicts with recreational anglers might be reduced under this alternative.

There could also be reductions in the value of limited access permits as a result of lifting the upgrade restrictions. The supply of usable permits for vessel owners that wish to upgrade under the current limited access regulations is restricted, since permits had to have sufficient length and horsepower characteristics in order to be transferred to a different or new vessel. The lifting of these restrictions would give a potential new entrant into the fishery a larger selection of permits to choose from since they would be able to select from a larger pool of potential permits for sale. This increased supply would reduce the value of limited access permits. However, any improvements in the profitability of the fishery might increase demand for permits and thus potentially offset any decreases in value as a result of the increased supply of usable permits.

Waiving vessel upgrade restrictions for vessels operating with longline gear would also have secondary and regional economic impacts. Shoreside support businesses such as shipyards, marine architects, and other commercial vessel suppliers could receive increased business from vessel owners wanting to upgrade under Alternative 2b. Fish dealers may need to expand their operations to handle any greater supplies of swordfish that could result from upgrades. However, if recreational fisheries are negatively impacted by any increases in pelagic longline vessel activity, shoreside support businesses for the recreational sector such as bait and tackle stores, hotels, and restaurants may see declines in business.

NMFS received comments in support of, and opposed to, this alternative. Those opposed generally objected to any potential increase in fishing effort in order to protect swordfish and other bycatch species, or to enhance recreational fishing. Comments in support of this alternative stated that there should be no limits on the size of vessels, so that U.S. fishermen could obtain much larger vessels with freezer capacity. The Agency believes that additional analysis is needed, and logistical issues should be resolved, before additional modification of the upgrading restrictions should occur. It is important for fleet capacity to be commensurate with resource abundance, to ensure long-term sustainability of the fishery. The preferred alternative will allow for intermediate vessel upgrades to occur, and thereby provide additional opportunities to increase U.S. swordfish landings, in recognition that the stock is almost fully rebuilt, but still retain an overall limit on fleet capacity.

Alternative 2c would waive HMS upgrading and permit transfer upgrading restrictions for vessels issued Swordfish handgear permits for 10 years, after which a new baseline would be established and the 10 percent LOA, GRT, NT and 20 percent HP restrictions would go back into effect. This alternative would likely have positive economic benefits for swordfish handgear vessel owners. For the same reasons discussed in Alternative 2b, it is not possible to accurately predict how many vessels will be upgraded, or the anticipated future capacity of the fishery, because the prediction is dependent upon the personal choices of many individual boat owners.

The decision to upgrade a fishing vessel, or to purchase a new vessel and transfer the permits, would be a unique decision for each business based on their individual circumstances. This decision will largely depend on whether the returns expected from an upgrade outweigh the costs of planning the upgrade, construction, financing, time to complete the necessary work, age of their current vessel and the forgone revenues associated with being out of the fishery while vessel work is being completed.

Using the same assumptions discussed above under ecological impacts, it is estimated that this alternative would only potentially result in eight swordfish Handgear permit holders that might consider upgrading the length of their vessels, and eight that may potentially consider upgrading the horsepower of their vessels. Based on public comment during the September 2006 public meetings, it appears that horsepower is an important factor for swordfish Handgear vessel operators that want to take longer fishing trips.

The potential economic benefits of any vessel upgrades would largely depend on future harvests, ex-vessel prices, fuel prices, and labor costs. These factors fluctuate, often dramatically, with market forces from year to year making any estimated benefits difficult to assess. Independent of those factors, however, vessel owners will gain the economic benefits associated with having the increased flexibility of adjusting the vessel configurations in terms of length and horsepower to best fit their business. In addition, vessel owners under this alternative would be able to better address the requirement to be able to safely take on observers, and thus avoid lost fishing time. The potential to make vessel upgrades for the expansion of bunk and berthing areas could enhance the quality of life for crew and captains providing intangible benefits, and also potentially reducing the actual costs of retaining labor. Finally, the potential to lengthen vessels and upgrade engine horsepower might have important positive safety implications, especially for smaller vessels operating in areas prone to extreme weather.

Due to its proximity to the East Florida Coast PLL closed area, the swordfish handgear fishery is currently most active in the Straits of Florida, according to anecdotal information. This is the same area that has experienced a recent resurgence in recreational swordfish fishing. Therefore, unlike Alternative 2b, this alternative is not expected to increase the amount of fishing that occurs further offshore. Any ecological impacts from the commercial handgear fishery could potentially result in diminished quality of recreational fishing for swordfish or other species. In addition, gear conflicts

could arise if the declines in the commercial swordfish fleet reverse themselves due to any improved profitability of commercial handgear vessels. These factors could result in decreases in recreational anglers' willingness-to-pay to participate in recreational fishing, and potentially a decline in the demand for charter and headboat services.

Waiving vessel upgrade restrictions for vessels operating with handgear under Alternative 2c would also have secondary and regional economic impacts. Shoreside support businesses such as shipyards, marine architects, and other commercial vessel suppliers could receive increased business from vessels owners wanting to upgrade under Alternative 2c. Fish dealers may need to expand their operations to handle any greater supplies of swordfish that may result from upgrades. However, if recreational fisheries are negatively impacted by any increases in swordfish handgear vessel activity, shoreside support business for the recreational sector such as bait and tackle stores, hotels, and restaurants may see declines in business.

Alternative 2c would likely be effective at increasing domestic swordfish landings and more fully harvesting the U.S. swordfish allocation. However, there could be negative economic impacts on the recreational sector of the fishery and associated support industries. In addition, ecological impacts of increased activity by handgear vessels in more sensitive ecological areas may significantly reduce the overall net benefits of this alternative. However, the overall impact of this alternative is uncertain, because it is difficult to predict to what extent swordfish handgear vessel owners would decide to upgrade their vessels. NMFS received few comments related directly to this alternative.

Alternative 2d would waive all HMS limited access vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new vessel baseline will be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect. This alternative could potentially have the most severe adverse ecological impacts compared to the other alternatives because the universe of affected vessels is substantially larger, however it is not possible to precisely quantify the magnitude of impacts for the reasons discussed above.

Alternatives 2b and 2c were limited to vessels eligible to fish for swordfish and tunas with longline gear, and swordfish Handgear vessels, respectively. Alternative 2d includes those vessels, as well as all vessels that are eligible to fish for sharks. Therefore, approximately 376 additional vessels could be eligible for unlimited upgrades under this alternative (240 directed shark + 312 incidental shark – 176 vessels that eligible to fish with longline gear for tunas and swordfish). It is assumed that all of these additional shark vessels could be upgraded under this alternative, but that few would take immediate advantage of the opportunity given current uncertainties in the domestic shark fishery. Also, Incidental shark permit holders are governed by retention limits for LCS, SCS, and pelagic sharks. Directed shark permit holders are governed by retention limits for LCS. Unless a vessel's size prohibits the landing of these retention limits, or a Directed shark permit holder intends to land more SCS, a shark permit holder may not need to enlarge their vessel.

Other economic benefits and costs are similar to Alternatives 2b and 2c including any secondary economic impacts to shoreside industries associated with fishing.

Similar to alternative 2b, NMFS received comments in support of, and opposed to, this alternative. Those opposed generally objected to any potential increase in fishing effort to conserve swordfish and bycatch species, or to protect recreational fishing. Comments in support of this alternative stated that there should be no limits on the size of vessels, so that U.S. fishermen could construct or obtain much larger vessels with freezer capacity. The Agency believes that, at this time, additional analysis is needed and logistical issues must be resolved before more significant modification of the upgrading restrictions can occur. It is important for fleet capacity to be commensurate with resource abundance, to ensure the long-term sustainability of the fishery. The preferred alternative will allow for intermediate vessel upgrades to provide additional opportunities to increase U.S. swordfish landings, in recognition that the stock is almost fully rebuilt, while retaining some overall limit on fleet capacity.

Alternative 2e, a preferred alternative, would establish new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for HMS vessels that are authorized to fish with pelagic longline for swordfish and tunas, and remove HP upgrading and HP permit transfer upgrading restrictions for these vessels. In addition, this alternative has been modified to remove the requirement that limits all HMS limited access permit holders to only one upgrade, up to the maximum allowable size and horsepower. All HMS limited access permit holders would be allowed to take incremental upgrades, up to the allowable maximums.

Alternative 2e is anticipated to have slightly lower economic benefits to permit holders than Alternative 2d, but would likely have very similar benefits as Alternative 2b, except that a few major upgrades would not qualify under this alternative and there would be no reversion back to the current regulations after 10 years. However, for the same reasons discussed previously, it is not possible to accurately predict how many vessels would be upgraded, or the anticipated future capacity of the fishery, because the prediction is dependent upon the business decisions of many individual boat owners.

Alternative 2e would impose an upper limit on the magnitude of vessel size upgrades (LOA, GRT, & NT) but not HP upgrades, and is restricted only to vessels that possess the permits necessary to fish for tunas and swordfish with pelagic longline gear (*i.e.*, vessels that possess an Atlantic tunas longline permit, as well as limited access permits for swordfish and sharks). For purposes of analysis, as described above under the ecological impacts associated with this alternative, it was projected that approximately 76 PLL vessels might be upgraded. For an “average” 55-foot swordfish vessel, this would result in 69 – 74 foot vessel, depending upon whether the vessel has already been upgraded. At the opposite ends of the spectrum, for the reasons discussed above, it is also possible that all PLL vessels could increase by 25 – 35 percent or, conversely, none of the PLL vessels would be upgraded.

The most important benefit of this alternative is that it would provide additional opportunities for U.S. vessels to harvest the domestic swordfish quota. The potential economic benefits would largely depend on future harvests, ex-vessel prices, fuel prices, and labor costs. These factors fluctuate, often dramatically, with market forces from year to year making any estimated benefits difficult to assess. Independent of those factors, however, vessel owners will gain the economic benefits associated with having some increased flexibility to adjust their vessel configurations in terms of length and horsepower to best fit their business. However, that flexibility will be capped for increases in vessel length, gross tonnage, and net tonnage, unlike Alternatives 2b, 2c, and 2d. In addition, vessel owners under this alternative would be able to better address the requirement to be able to safely take on observers, and thus avoid lost fishing time. The potential to make vessel upgrades, such as the expansion of bunk and berthing areas, would still likely be possible within the 35 percent restriction, which could enhance the quality of life for crew and captains, thereby providing intangible benefits and possibly reducing the actual costs of retaining labor. The potential to lengthen vessels and upgrade engine horsepower might have important positive safety implications, especially for smaller vessels operating far offshore in areas prone to extreme weather. Finally, improving the ability of PLL vessels to fish further offshore could relieve fishing pressure in ecologically sensitive areas and reduce gear conflicts, which would benefit the recreational sector.

Alternative 2e has been modified from the Draft Environmental Assessment by including a provision to remove the “one-time only” upgrading requirement that restricts permit holders to only one upgrade and prohibits incremental upgrades up to the allowable maximum. This modification is being made in response to comments received from NMFS’ Southeast Region Permits Office, who indicated that this requirement greatly impedes the expeditious issuance of permits because office staff must review several years worth of permit paperwork to determine if a vessel has been upgraded more than once. This information was not recorded in the computer database until very recently. It is not possible to precisely quantify the social and economic impacts of this modification because, if a permit renewal was denied for violating the “one time only” restriction, the permit was not issued or recorded in the database, so the information is not available. However, NMFS is aware that some permit holders have upgraded their vessels by amounts less than those allowed, and are currently limited by the “one time only” restriction. Removing this restriction would allow these vessel owners to upgrade incrementally up to the maximum allowable size. Any socio-economic benefits discussed above would be applicable (flexibility, safety at sea, etc.). The primary benefit is that it would allow vessel owners to incrementally increase vessel size, depending upon their needs, rather than being required to take the maximum upgrade all at once. A secondary benefit is that this provision may expedite the permit renewal process.

Some economic costs could be associated with expanding capacity in the swordfish fleet. Any adverse ecological impacts associated with alternative 2e, such as increased commercial swordfish landings, could potentially diminish the quality of recreational fishing for swordfish or other species. This could result in decreases in recreational

anglers' willingness-to-pay to participate in recreational fishing and potentially a decline in demand for charter and headboat services.

There could also be some small reductions in the value of limited access permits as a result of relaxing the upgrading restrictions. The supply of usable permits for vessel owners that want to upgrade under the current limited access regulations is restricted, since permits had to be of sufficient length and horsepower characteristics in order to be transferred to a different or new vessel. Removing the horsepower restriction and increasing the size upgrade allowance would give a potential new entrants into the fishery a larger selection of permits to choose from since they would be able to select from a larger pool of potential permits for sale. This increased supply would reduce the value of limited access permits. However, any improvements in the profitability of the fishery might increase demand for permits and thus potentially offset any decreases in value as a result of the increased supply of usable permits.

Modifying vessel upgrade restrictions for vessels possessing certain HMS limited access permits under Alternative 2e would also have secondary and regional economic impacts. Shoreside support businesses such as shipyards, marine architects, and other commercial vessel suppliers could receive increased business from vessels wanting to upgrade under this alternative. Fish dealers may need to expand their operations to handle any greater supplies of swordfish that may result from upgrades. However, if recreational fisheries are negatively impacted by any increase in pelagic longline and handgear vessel activity, shoreside support business for the recreational sector such as bait and tackle stores, hotels, and restaurants may see declines in business.

Because alternative 2e was the preferred alternative, NMFS received many comments in reference to it. Some commenters indicated that a 35 percent upgrade in vessel size was not sufficient to bring large freezer vessels into the fleet. They stated that freezer vessels typically range in length from 125 – 150 ft. Other commenters stated that many vessel owners would not be able to afford vessel upgrades, so the alternative would have no effect on increasing fleet capacity. Finally, NMFS received several comments indicating that, because of the way the proposed regulations were written, recreational fishermen would seek to obtain the three requisite permits (including Directed swordfish) and take advantage of the HP upgrading waiver to fish with buoy gear in the PLL closed areas. The Agency responds by indicating that there are currently about 50 vessels greater than 70 feet in length that would qualify for the new upgrading provisions. These vessels could be upgraded to more than 90 feet in length. Although this is not the size that the commenter indicates is needed for freezer vessels, they could possibly serve that purpose. It is important to keep fleet capacity commensurate with resource abundance, to ensure the sustainability of the swordfish fishery. Until additional analysis is completed and other logistical issues are resolved, NMFS believes that it is necessary to keep overall fleet capacity within some limits. Fishermen may be able to obtain financing information from NMFS under the Capital Construction Fund, the Fisheries Finance Program, or through other assistance programs by contacting NMFS' Financial Services Division. Regarding concerns about potential growth of the buoy gear fishery, NMFS believes that any expansion would be limited. The barriers to entry for becoming a commercial

fisherman are sizeable. A modest expansion of the buoy gear fishery could increase domestic swordfish landings, but additional gear conflicts could arise. NMFS recently implemented several new restrictions on this fishery, and believes that it is adequately regulated. Nevertheless, the Agency is aware of concerns expressed about the buoy gear fishery, and will continue to assess the need for additional regulations.

### ***Conclusion***

In conclusion, fishing effort could increase under any of the alternatives considered for modifications to the limited access vessel upgrading restrictions, except for the No Action alternative. However, it is not possible to quantify the magnitude of any potential increase because it is dependent upon the decisions of hundreds of individual vessels owners. Preferred Alternative 2e is expected to have the lowest degree of adverse ecological impacts, except for the No Action alternative, because it imposes a limit of 35 percent on size (LOA, GRT, & NT) and is restricted only to vessels possessing certain HMS limited access permits. Any potential adverse ecological impacts, including a potential increase in fishing effort, would largely be mitigated by existing PLL management measures that have significantly reduced bycatch in recent years, including PLL closed areas, circle hook and bait restrictions, a commercial billfish possession prohibition, minimum size restrictions, limited access permits, commercial quotas, retention limits, authorized gears, VMS requirements, dealer and vessel logbook reporting, and requirements to possess and utilize release and disentanglement equipment, among other measures. Although NMFS cannot quantify the magnitude of a potential increase in fishing effort, no significant adverse ecological impacts resulting from implementation of preferred alternative are expected because existing management measures that have effectively reduced bycatch and bycatch mortality will remain in effect. Also, any potential impacts on target, non-target, and protected species are not likely to be realized for months, and possibly years, because of the time necessary to complete vessel upgrading. Both short-term and long-term impacts are expected to be limited, for the reasons discussed above.

The overall social and economic impacts associated with the upgrading alternatives are similarly not possible to quantify, because they depend upon the decisions of vessels owners to upgrade. However, in general, positive social and economic impacts are anticipated. Vessel owners would gain economic benefits by having increased flexibility to adjust their vessel configurations to better fit their business. In addition, they would have a better ability to safely carry observers, and could avoid lost fishing time. The ability to upgrade could also enhance the quality of life for crew and captains by providing larger, more comfortable, and more modern vessels. Finally, the potential to lengthen vessels and upgrade engine horsepower might have important positive safety implications, especially for smaller vessels operating far offshore in areas prone to extreme weather. The preferred alternative is not expected to adversely affect recreational fishing, as larger PLL vessels may be more likely to fish further offshore and away from ecologically sensitive nearshore areas. It is possible that there could be a limited increase in buoy gear fishing effort, which may need to be addressed in the future. Currently, NMFS believes that the buoy gear fishery is adequately regulated, but will continue to assess the need for additional restrictions.

### 4.3. Impacts on Essential Fish Habitat

The Magnuson-Stevens Act requires NMFS to evaluate the potential adverse effects of fishing activities on EH. If NMFS determines that fishing gears are having an adverse effect on HMS EFH, or other species EFH, then NMFS must include management measures that minimize adverse effects to the extent practicable. At this time, there is no evidence to suggest that any of the preferred alternatives or proposed management measures in this Environmental Assessment are affecting EFH to the extent that detrimental effects can be identified on the habitat or fisheries. No HMS gear, other than potentially bottom longline gear, is considered to have an adverse effect on EFH. New information presented in the Gulf of Mexico and Caribbean Fishery Management Council EFH FEIS's (2004) suggest that bottom longline gear may have an adverse affect on coral reef habitat, which serves as EFH for certain reef fishes. As a result, NMFS has made a preliminary determination that bottom longline gear may have an adverse effect on EFH for other federally managed species. An assessment of whether HMS bottom longline gear used primarily to target LCS is fished in coral reef areas and, if so, the intensity, extent, and frequency of such impacts, including any measures to minimize potential impacts, will be addressed in a subsequent rulemaking. The following measures considered in this Environmental Assessment are not expected to adversely impact HMS EFH, or EFH for other Federal or non-Federally managed species.

Preferred Alternative 1c would increase swordfish retention limits for vessels issued a limited access Incidental swordfish permit. Swordfish are commercially caught primarily on pelagic longline gear. As described in the Consolidated HMS FMP, pelagic longline gear is suspended in the water column and does not touch the bottom substrate (NMFS, 2006). Because of the nature of PLL fishing gear and because the proposed action is not expected to significantly change fishing practices or effort, it is unlikely that this alternative would alter the habitat for prey species or essential fish habitat.

Preferred Alternatives 1e and 1f would increase the vessel limit for swordfish caught on HMS CHB vessels, and Angling category vessels, respectively. These alternatives would not change the per person limit. Swordfish are recreationally caught primarily using rod & reel and handlines. This gear is suspended in the water column and does not touch the bottom substrate. Because of the nature of recreational swordfish fishing gear and because the proposed action is not expected to significantly change fishing practices or effort, it is unlikely that these alternatives would alter the habitat for prey species or essential fish habitat.

Preferred Alternative 2e would modify upgrading restrictions for vessels that are eligible to fish with pelagic longline gear for tunas and swordfish (*i.e.*, vessels that possess an Atlantic tunas longline permit, as well as Incidental or Directed permits for swordfish and sharks). As described in the Consolidated HMS FMP, pelagic longline gear is suspended in the water column and does not touch the bottom substrate (NMFS, 2006). Because of the nature of PLL fishing gear, it is unlikely that this alternative would significantly alter the habitat for prey species or essential fish habitat. However, because each of these vessels also possess a shark permit, it is possible that some increase in BLL fishing

activity could occur. If bottom longline gear becomes hung or entangled on bottom substrates such as rock, and hard and soft corals, it could have some adverse impacts. An assessment of whether HMS bottom longline gear used primarily to target LCS is fished in coral reef areas and, if so, the intensity, extent, and frequency of such impacts, including any measures to minimize potential impacts, will be addressed in a subsequent rulemaking. The 1999 NMFS EFH Workshop categorized the impact of bottom longline gear on mud, sand, and hard-bottom as low. As a precautionary measure, NMFS recommends that fishermen take appropriate steps to identify and avoid bottom obstructions in order to mitigate any adverse impacts on EFH. The other gear types used to target sharks, such as gillnet or pelagic longline, are unlikely to have any impact on EFH.

The No Action alternatives (1a and 2a) would not alter current impacts on EFH. Non-preferred alternatives 1b, 1d, and 2b would primarily impact vessels deploying PLL gear, so it is unlikely that these alternatives would alter the habitat for prey species or essential fish habitat for the reasons discussed above. Non-preferred alternative 2c would impact vessels deploying handgear, which is typically suspended in the water column and does not touch the bottom substrate. Therefore, it is not likely that alternative 2c would alter the habitat for prey species or essential fish habitat. Non-preferred alternative 2d could impact some vessels deploying BLL gear. As mentioned above, there could be some impacts on corals under this alternative, but impacts on mud, sand, and hard bottom are categorized as low.

#### **4.4. Impacts on Other Finfish Species**

Bycatch in commercial and recreational fisheries is an important issue for the fishing industry, resource managers, scientists and the public. Bycatch can result in death or injury to discarded fish, and it is essential that this component of total fishing-related mortality be incorporated into fish stock assessments and evaluation of management measures. Bycatch precludes other more productive uses of fishery resources and decreases the efficiency of fishing operations. Although not all discarded fish die, bycatch can become a large source of mortality, which can slow the rebuilding of overfished stocks. Bycatch also imposes direct and indirect costs on fishing operations by increasing sorting time and decreasing the amount of gear available to catch target species. Section 3.8 of the Final Consolidated HMS FMP (NMFS, 2006) describes bycatch, bycatch reduction, and bycatch reporting in HMS fisheries. Sections 3.9.7 and 3.9.8 of the Final Consolidated HMS FMP (NMFS, 2006) describe evaluation and monitoring of bycatch, as well as a description of bycatch mortality in HMS fisheries. Table 3.107 in the Final Consolidated HMS FMP (NMFS, 2006) provides a list of bycatch species in HMS fisheries.

PLL fishing effort, in terms of the number of active vessels, has precipitously declined since 1994, as shown in Table 7 above. The preferred management measures discussed in this document are not expected to closely approach the historical levels of PLL fishing effort that have occurred, but rather are intended to provide additional opportunities for U.S. vessels to harvest the ICCAT recommended domestic swordfish quota.

As described in the sections above, the preferred alternatives for Incidental and recreational swordfish retention limits (1c, 1e, and 1f) are not expected to significantly alter current fishing practices or effort, but rather will allow fishermen to retain swordfish that otherwise would have been discarded due to current retention limits. If PLL vessel operators deploy additional sets to retain 28 additional swordfish, a modest increase in fishing effort is possible. However, only limited ecological impacts on non-target species are anticipated because PLL vessels are required to deploy only large circle hooks, utilize specific baits, carry release and disentanglement gear, comply with quotas, comply with VMS, abide by minimum size restrictions, and may not fish in large PLL closed areas, among other measures. As described above, under Alternative 1a in Section 4.1, these measures have significantly reduced bycatch in the PLL fishery since 2000, and would be expected to continue to mitigate impacts on other finfish species. Preferred alternatives 1e and 1f would increase per vessel recreational swordfish retention limits. These fisheries primarily occur at night within the water column, and are generally effective at targeting swordfish with little bycatch of other species. Some species of sharks may be encountered, as well as other species, but the impacts on non-target species are expected to be limited.

The preferred alternative (2e) that would modify vessel upgrading requirements for vessels that possess an Atlantic tunas longline permit, as well as limited access permits for swordfish and sharks, may increase fishing effort in the long term, and could result in additional interactions with other finfish species. However, while fishing effort may increase by an unquantifiable amount, the ecological impacts are expected to be limited, especially in the short term. This is because PLL vessels will continue to be required to abide by quotas, deploy only large circle hooks, utilize specific baits, abide by minimum size restriction, possess and utilize release and disentanglement gear, abide by retention limits, comply with VMS requirements, and be prohibited from fishing in large PLL closed areas, among other measures. As described under Alternative 1a in Section 4.1, these measures have significantly reduced bycatch in the PLL fishery since 2000, and are expected to continue to mitigate impacts on other finfish species. Further, any adverse impacts associated with this alternative are not likely to be realized in the short term. It may be months, and probably years, before the full impacts reach fruition. This is because PLL vessel upgrading, construction, and/or purchases take a long time to secure financing, place orders, and complete the necessary work.

The No Action alternatives (1a and 2a) would not alter current impacts on other finfish species. Non-preferred alternatives 1b, 1d, and 2b would primarily impact vessels deploying PLL gear. Because the PLL fishery has many requirements in place to minimize bycatch, any potential impacts on other species would be mitigated similar to preferred alternative 1c. Non-preferred alternative 2c would impact vessels deploying handgear. This fishery primarily occurs at night within the water column, and is generally effective at targeting swordfish with little bycatch of other species. Nevertheless, some species of sharks may be encountered, as well as other species, but the impacts on non-target species are expected to be limited. Non-preferred alternative 2d could impact some vessels deploying BLL gear. This gear interacts with many demersal species, including groupers and snappers. However it is not anticipated that

many HMS BLL vessel owners will currently choose to upgrade their vessels, while awaiting future regulations governing the shark fishery.

#### **4.5. Impacts on Protected Species Listed under the Endangered Species Act or Marine Mammal Protection Act**

Similar to the bycatch of non-target finfish species described above, incidental catch concerns also apply to populations of marine mammals, sea turtles, seabirds and other components of ecosystems which may be protected under other applicable laws and for which there are no commercial or recreational uses, but for which existence values may be high. Section 3.8 of the Final Consolidated HMS FMP (NMFS, 2006) describes bycatch, bycatch reduction, and bycatch reporting in HMS fisheries. Sections 3.9.7 and 3.9.8 of the Final Consolidated HMS FMP (NMFS, 2006) describe evaluation and monitoring of bycatch, as well as a description of bycatch mortality in HMS fisheries. Section 3.9.9 of the Final Consolidated HMS FMP examines the interaction between protected species and Atlantic HMS fisheries, including marine mammals, sea turtles, finfish, seabirds, and critical habitat for Northern right whales. Table 3.107 in the Final Consolidated HMS FMP (NMFS, 2006) provides a list of bycatch species in HMS fisheries.

As described above in Sections 4.1 and 4.2, the preferred alternatives in this document are not expected to significantly alter current fishing practices or fishing effort. As shown in Table 7, overall PLL fishing effort, in terms of the number of active vessels, has precipitously declined since 1994. The preferred management measures in this document are not expected to result in levels of fishing effort that closely approach the historical levels shown in Table 7. Rather, the preferred alternatives are intended to provide additional opportunities for U.S. vessels to harvest the ICCAT recommended domestic swordfish quota.

The preferred measures for Incidental and recreational swordfish retention limits (1c, 1e, and 1f) would allow fishermen to retain swordfish that otherwise would have been discarded due to the existing low incidental and recreational swordfish retention limits. If PLL vessel operators deploy additional sets to retain 28 additional swordfish, a modest increase in fishing effort could result. However, only limited ecological impacts on non-target species and protected species are anticipated because PLL vessels will continue to be required to deploy only large circle hooks, utilize specific baits, utilize release and disentanglement gear, comply with quotas, comply with VMS, abide by minimum size restrictions, and comply with large PLL closed area restrictions, among other measures. As described in the two No Action alternatives, these measures have significantly reduced bycatch in the PLL fishery since 2000, and are expected to continue to mitigate impacts on non-target and protected species. Preferred alternatives 1e and 1f would increase per vessel recreational swordfish retention limits. These fisheries primarily occur at night within the water column, and are generally effective at targeting swordfish with little bycatch of other species. HMS Angling category permit holders may fish for swordfish only with rod & reel and handline. The recreational handgear fishery is a Category III fishery under the MMPA, because interactions with marine mammals are low. The 2001 Biological Opinion issued for the HMS rod & reel and handgear fisheries found that these fisheries may adversely affect, but are not likely to jeopardize the continued existence of the right whale, humpback, fin, or sperm whales, or Kemp's ridley, green, loggerhead, hawksbill, or leatherback sea turtles. Increasing the allowable upper limit on the amount of swordfish that may be retained by HMS Angling and CHB category permit holders is not expected to change these findings.

The preferred alternative that would modify vessel upgrading requirements for vessels that possess an Atlantic tunas longline permit, as well as directed or incidental limited access permits for swordfish and sharks, may increase fishing effort in the long term, and could result in additional interactions with protected species. However, while fishing effort may increase by an unquantifiable amount, the ecological impacts are expected to be limited, especially in the short term. This is because PLL vessels will continue to be required to abide by quotas, deploy only large circle hooks, utilize specific baits, abide by minimum size restriction, possess and utilize release and disentanglement gear, abide by retention limits, comply with VMS requirements, and be prohibited from fishing in large PLL closed areas, among other measures. These measures have significantly reduced bycatch in the PLL fishery since 2000, and are expected to continue to mitigate impacts on non-target and protected species. Further, any adverse impacts associated with this alternative would not likely to be realized in the short term. It could be months, and probably years, before the full impacts reach fruition. This is because PLL vessel upgrading, construction, and/or purchases take a long time to secure financing, place orders, and complete the necessary work.

Thus, NMFS believes that these alternatives do not change the conclusion of, nor would they result in effects that have not been considered in, the June 2001 and June 2004 BiOps. The June 1, 2004 BiOp concluded that long-term continued operation of the Atlantic pelagic longline fishery is not likely to jeopardize the continued existence of loggerhead, green, hawksbill, Kemp's ridley, or olive ridley sea turtles, but is likely to

jeopardize the continued existence of leatherback sea turtles. The BiOp specified a Reasonable and Prudent Alternative to avoid jeopardy, an Incidental Take Statement, Reasonable and Prudent Measures, and Terms and Conditions. In addition to the many management measures that have been implemented in response to the BiOps since 2001, and other measures to reduce bycatch and bycatch mortality in PLL fisheries, the overall number of active PLL vessels has precipitously declined since those BiOps were developed by approximately 45 percent since 2000, and by 16 percent since 2003. Similarly, for these same reasons, the selected alternatives in this document are not expected to increase the number or rate of interactions with marine mammals. On December 22, 2006, the Office of Sustainable Fisheries requested reinitiation of the Endangered Species section 7 consultation for the pelagic longline fishery with the Office of Protected Resources. On March 2, 2007, the Office of Protected Resources indicated that, while further information is being gathered and a final section 7 assessment is made, the current BiOp (June, 2004) remains valid. Once the necessary information has been gathered a determination will be made on whether the current BiOp, with its associated Incidental Take Statement and requirements, needs to be revised.

The No Action alternatives (1a and 2a) would not alter current impacts on protected species or marine mammals that were considered in the June 2001 and June 2004 BiOps, and the Final Consolidated HMS FMP (NMFS, 2006). Non-preferred alternatives 1b, 1d, and 2b would primarily impact vessels deploying PLL gear. Because the PLL fishery has many requirements in place to minimize bycatch, any potential impacts on protected species would be mitigated similar to preferred alternative 1c. Non-preferred alternative 2c would impact vessels deploying handgear. This fishery primarily occurs at night within the water column, and is generally effective at targeting swordfish with little bycatch of other species. Nevertheless, some protected species may be encountered, but impacts are expected to be limited because handgear is actively tended. Non-preferred alternative 2d could impact some vessels deploying BLL gear. This gear interacts with protected species, but this fishery has recently been required to carry release and disentanglement gear, attend careful release workshops, and other measures. Also, it is not anticipated that many HMS BLL vessel owners will currently choose to upgrade their vessels, while awaiting future regulations governing the shark fishery.

#### **4.6. Environmental Justice Concerns**

Executive Order 12898 requires that Federal actions address environmental justice in the decision-making process. In particular, the environmental effects of the actions should not have a disproportionate effect on minority and low-income communities. The actions in this document would not have any effects on human health. Additionally, the actions are not expected to have any social or economic effects and should not have a disproportionate effect on minority and low-income communities.

#### **4.7. Coastal Zone Management Act Concerns**

NMFS has determined that these final regulations would be implemented in a manner consistent to the maximum extent practicable with the enforceable policies of those coastal states on the Atlantic, including the Gulf of Mexico and Caribbean that have

approved coastal zone management programs. Letters were sent to the relevant states asking for their concurrence and whether this rule is consistent with their respective coastal zone management programs. Connecticut, Delaware, Florida, Georgia, Louisiana, Mississippi, New Hampshire, New Jersey, North Carolina, Rhode Island, and Virginia concur with the Agency’s consistency determination. The remaining states have provided no response; therefore, consistency has been presumed.

#### 4.8. Comparison of the Alternatives

Table 8 compares the impacts of the various alternatives considered in this document. The symbols “+”, “-“, and “0” refer to positive, negative, and zero impacts, respectively. Minor impacts, and impacts that are possible but unlikely, are denoted with a single plus or minus sign. Moderate impacts are denoted with a double plus or minus sign, and significant impacts are denoted with a triple plus or minus sign. Please refer to the preceding sections for additional explanations of the impacts associated with each alternative.

**Table 8. Comparison of the Alternatives**

Alternative	Ecological Impacts	Economic Impacts	Social Impacts
<b>Topic 1 – North Atlantic Swordfish Retention Limits</b>			
1a (no action)	+	--	--
1b (waive incidental SWO limits until 70% of quota, & 10 SWO for squid)	--	++	++
<i>1c – Preferred (30 incidental &amp; 15 squid)</i>	-	+	+
1d (15 incidental & 10 squid)	-	+	+
<i>1e – Preferred (1 per person up to 6 charter &amp; 15 headboat)</i>	0/-	++	++
<i>1f – Preferred (1 per person up to 4 Angling)</i>	0/-	0	++
<b>Topic 2 – HMS Limited Access Vessel Upgrading Restrictions</b>			
2a (no action)	+	--	--
2b (waive for PLL 10 yr. )	--	++	++
2c (waive for Handgear 10 yr.)	--	++	+
2d (waive for all 10 yr.)	---	++	+
<i>2e – Preferred ( size 35% waive HP)</i>	-	+	+

#### 4.9. Cumulative Impacts

The selected alternatives are intended to address cumulative economic impacts, particularly on the domestic PLL fishery, that have resulted from several years of

restrictive management measures and had the unintended effect of preventing the United States from harvesting its full ICCAT-recommended domestic swordfish quota. Taking into consideration the management measures implemented through the 1999 HMS FMP, the August 2000 bycatch and time/area closure rule, the July 2004 rule implementing the BiOp measures (*i.e.*, circle hooks, release gears, etc.), and the 2006 Consolidated HMS FMP, NMFS does not expect any adverse cumulative ecological impacts from this proposed rule. The previous actions were implemented primarily to reduce bycatch and bycatch mortality in the PLL fishery. As discussed under the ecological impacts section, they have been effective, but have also contributed to large domestic quota underages for both the North and South Atlantic swordfish quotas since 2000. The final actions would relax some management measures and provide a reasonable opportunity for U.S. fishermen to fully harvest the domestic swordfish quota, but they are not expected to create large changes in fishing practices or effort, or cause significant ecological, economic, or social impacts. This is because the most critical bycatch reduction and fishery management measures (time/area closures, circle hooks, quotas, LCS retention limits, reporting requirements, minimum sizes, etc.) would remain in effect. NMFS will continue to monitor effort levels in the PLL fishery and will take action as needed if effort levels, and therefore interactions with protected species or other bycatch, increase. In all, the final actions would continue to prevent overfishing without jeopardizing rebuilding of the swordfish stock, while relieving some cumulative adverse economic and social impacts that have resulted from previous management actions.

There are three selected alternatives for swordfish retention limits (1c, 1e and 1f). Based on the number of trips reported by incidental permit holders from 2002-2005, under alternative 1c, if incidental swordfish permit holder choose only to retain fish that were previously discarded (up to 30 fish), swordfish landings could increase from 10,787 lb (dw) to 34, 879 lb (dw). If all incidental swordfish permit holders choose to retain 30 fish, swordfish landings could increase from 10,787 lb (dw) to 445, 116 lb (dw). Also, under alternative 1c, landings by squid trawlers could increase from 10,443 lb (dw) (6.3 mt ww) to 31,328 lb (dw) (18.9 mt ww). Thus, alternative 1c is not expected to result in an exceedance of the current 656,807 lb (dw) incidental swordfish quota allocation, based on current levels of fishing effort (trips).

Preferred alternative 1e would implement a North Atlantic swordfish retention limit for HMS CHB vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels. Assuming that the same proportion of trips continue to land the retention limit as in 2005, an additional 32 to 409 swordfish would be landed.

Preferred alternative 1f would implement a North Atlantic swordfish retention limit for HMS Angling category vessels of one fish per person, up to four swordfish per trip. Assuming that the same proportion of trips continue to land the retention limit as in 2005, an additional 18 to 569 swordfish would be landed.

It is not possible to precisely quantify the anticipated swordfish landings that might occur as a result of modifying PLL vessel upgrading restrictions under preferred alternative 2e,

because the prediction is dependent upon the personal choices of many individual boat owners. However, it is possible that approximately 76 vessels might be upgraded. For an “average” 55-foot swordfish vessel, this would result in 69 – 74 foot vessel, depending upon whether the vessel has already been upgraded. At the opposite end of the spectrum, it is also possible that all PLL vessels could increase by 25 – 35 percent or, conversely, none of the PLL vessels would be upgraded. In all of these scenarios, the swordfish PLL fishery would continue to be regulated by existing management measures.

There are several activities in the foreseeable future that may have an impact on the management of North and South Atlantic swordfish. In November 2006, ICCAT met and, based on the results of the new stock assessment, approved new management and quota recommendations. These will be implemented in future rulemakings.

As described in Section 1.2, NMFS may also consider additional future actions as part of a long-term strategy to revitalize the swordfish fishery. It is possible that implementation of these measures would require the development of an FMP amendment and an environmental impact statement (EIS). Other measures could require interagency cooperation to enable their implementation. The following suggestions were put forth for consideration by NMFS at six meetings conducted during September 2006, and at the HMS Advisory Panel meeting in October 2006:

Time/Area Closures – The current PLL time/area closures were implemented based upon catch and discard data when the fleet was using J-hooks. Since then, circle hooks have become mandatory in the PLL fleet. Therefore, additional information from controlled experiments comparing catch and bycatch rates between circle hooks and J-hooks would be beneficial. Using this data and data obtained from logbooks since the implementation of circle hooks, NMFS intends to analyze alternatives regarding time/area closures. Also, NMFS has received a request for an Exempted Fishing Permit (EFP) to collect data on PLL fishing activities in portions of the Charleston Bump and East Florida Coast PLL closed areas. This request is currently under review.

Vessel Upgrading Restrictions – Based upon information obtained after this final action is implemented, including landings and discard data, NMFS may consider additional modifications to HMS limited access vessel upgrading restrictions, if warranted.

Live Bait Prohibition in the GOM - Current prohibitions on the use live bait in the Gulf of Mexico PLL fishery were established based upon data obtained when the fleet was using J-hooks. Since then, circle hooks have become mandatory in the PLL fleet. Therefore, additional information from controlled experiments to evaluate bycatch levels using live bait and circle hooks would be beneficial. Based upon this data, NMFS could analyze alternatives regarding the use of live bait in the GOM.

HMS Permits: Modifications, including gear-based permits, reopening limited access permits, and modifying the qualification criteria for HMS limited access permits, may be considered.

Individual Transferable Quotas (ITQs) and Individual Fishing Quotas (IFQs) – ITQs or IFQs for swordfish and other HMS may be considered.

In addition to these HMS management measures, other recommendations put forth by the public as part of a long-term strategy to revitalize the swordfish industry would likely require interagency, congressional, or industry action. These include: financial assistance (fuel subsidy, loans for vessel upgrading); marketing assistance (seafood promotion, press releases, product certification); and, action to examine the effects of swordfish imports on the domestic industry.

## **5.0 MITIGATION AND UNAVOIDABLE ADVERSE IMPACTS**

### **5.1 Mitigating Measures**

This action does not include any new mitigating measures for increasing Incidental and recreational swordfish retention limits or modifying certain HMS limited access vessel upgrading restrictions. However, each of the preferred alternatives would impose some limitations on the management measures being considered to prevent an uncontrolled expansion of effort in the fishery. For example, an incidental retention limit of 30 swordfish is proposed, which is just below the median level of landings in the directed fishery. This may prevent additional directed fishing on swordfish, and would retain the incidental characteristic of the permit. In the recreational fishery, the current one fish per person swordfish limit would remain in effect, but the upper vessel limit would be modified to accommodate vessels that may carry more than three people. With regards to vessel upgrading restrictions, the preferred alternative would apply only to certain HMS limited access permitted vessels, and is restricted to no more than a 35 percent increase in vessel size (relative to the baseline vessel). NMFS currently has several restrictions in place that are expected to continue to successfully mitigate any potential increases in interactions with target, non-target, and protected species such as PLL time/area closures, limited access permits, landing restrictions, VMS requirements, quotas, minimum size limits, dealer and vessel reporting requirements, circle hook requirements, bait restrictions, and sea turtle handling and release protocols.

An analysis prepared for the 2006 Consolidated HMS FMP indicated that the PLL time/area closures alone have resulted in large declines in fishing effort and bycatch from the 1997 – 1999 period to the 2001 – 2003 period. Overall effort, expressed as the number of hooks set, declined by 15 percent between the two time periods. Declines in discards attributable to the closures have been even more sizeable. For example, the overall number of reported discards of swordfish, bluefin tuna, bigeye tuna, pelagic sharks, blue marlin, white marlin, sailfish and spearfish have all declined by more than 30 percent. Discards of blue and white marlin declined by more than 50 percent, and sailfish discards declined by almost 75 percent. Also, the reported number of sea turtles caught and released declined by almost 28 percent due to the time/area closures alone. In addition, the number of active fishing vessels has declined precipitously by approximately 45 percent since 2000. For these reasons, NMFS does not expect that the modest relief provided by the preferred alternatives would have major adverse ecological, economic, or social impacts so no mitigating measures are proposed. NMFS will

continue to monitor the pelagic longline, buoy gear, and handgear fisheries and will take appropriate action if interactions with protected species, or other bycatch, increase.

## **5.2. Unavoidable Adverse Impacts**

This action will assist NMFS in achieving the objective of this rulemaking and the Magnuson-Stevens Act, but will have some unavoidable adverse impacts resulting from a potential limited increase in fishing effort, including potential sea turtle and marine mammal interactions. Because the final management measures are not expected to substantially alter fishing practices or fishing effort, NMFS expects that the bycatch and bycatch mortality of endangered species or marine mammals would remain within the estimated mortalities of the incidental take statement considered in the June 2001 Biological Opinion (BiOp) on Atlantic HMS Fisheries and the June 2004 BiOp for the HMS pelagic longline fisheries. Commenters have noted that gear conflicts with recreational fisheries could arise in PLL closed areas if there is a significant increase in the number of buoy gear vessels caused by removing the HP upgrading restriction on Directed swordfish permitted vessels. NMFS believes that any expansion of the buoy gear would be limited. The barriers to entry for becoming a commercial fisherman are sizeable. NMFS recently implemented several new restrictions on this fishery, and believes that it is adequately regulated. Nevertheless, the Agency is aware of concerns expressed about the buoy gear fishery, and will continue to assess the need for additional regulations.

## **5.3. Irreversible and Irrecoverable Commitment of Resources**

The preferred alternatives would assist NMFS in achieving the objectives of this rulemaking and the Magnuson-Stevens Act and are not expected to have any irreversible or irretrievable commitments of resources.

## **6.0 ECONOMIC EVALUATION**

This section assesses the economic impacts of the alternatives presented in this document. Additional economic and social considerations and information are discussed in Chapters 3, 4, 7, 8, and 9 of this document.

### **6.1. Number of Fishing and Dealer Permit Holders**

In order to examine the baseline universe of entities potentially affected by the preferred alternatives, NMFS analyzed the number of permits that were issued as of February 2006 in conjunction with HMS fishing activities. The following tables provide data on sectors that the preferred alternatives may impact.

As of February 2006, there were a total of 365 commercial permit holders in the Atlantic swordfish fishery (191 directed, 86 incidental permits, and 88 handgear). As of September 26, 2006, approximately 176 of these of these vessels had “valid” swordfish permits because they possessed the requisite three limited access permits for swordfish, shark and tunas longline permits. Of those, approximately 48 vessels possess “valid”

Incidental swordfish permits. Table 9 provides a summary of these commercial permit holders by year. Further detail regarding commercial permit holders is provided in the HMS FMP.

**Table 9. Swordfish Limited Access Permits Issued From 2002 - 2006. Data for 2001-2005 are as of October 1 for each year.**

<b>Year</b>	<b># Directed Swordfish</b>	<b># Incidental Swordfish</b>	<b># Swordfish Handgear</b>
<b>2006*</b>	<b>191</b>	<b>86</b>	<b>88</b>
<b>2005</b>	<b>190</b>	<b>91</b>	<b>92</b>
<b>2004</b>	<b>195</b>	<b>99</b>	<b>96</b>
<b>2003</b>	<b>206</b>	<b>99</b>	<b>95</b>
<b>2002</b>	<b>205</b>	<b>110</b>	<b>94</b>

\* Totals for 2006 are as of February 1, 2006

Table 10 provides a summary of HMS CHB permit holders, by state. As of February 1, 2006, there were 4,173 HMS CHB permit holders. The highest numbers of HMS CHB permit holders are located in Florida, New Jersey, Massachusetts, and North Carolina.

**Table 10. HMS CHB Permits by State as of February 1, 2006.**

<b>State</b>	<b>CHB permits</b>	<b>State</b>	<b>CHB Permits</b>
AL	76	NH	47
CT	91	NJ	643
DE	129	NV	--
FL	673	OH	2
GA	31	PA	11
LA	93	PR	27
MA	557	RI	163
MD	198	SC	141
ME	64	TN	--
MI	2	TX	166

State	CHB permits	State	CHB Permits
MS	32	VA	142
NC	465	VI	18
NY	373	Other	23
<b>Total</b>			<b>4,173</b>

The number of HMS Angling category permits was 25,238 as of February 1, 2006. There is no specific swordfish angling permit, so it is not possible to determine the number of recreational anglers that specifically target swordfish.

The alternatives analyzed for this final rule could impact Directed and Incidental swordfish permit holders, as well as HMS CHB and Angling category permit holders. The tables and numbers presented above indicate that a total of 29,411 HMS CHB and Angling permit holders could be directly affected by the proposed alternatives regarding CHB and Angling swordfish retention limits; approximately 48 vessel owners possessing valid Incidental swordfish permits could be affected by the proposed alternative regarding incidental swordfish retention limits; and, approximately 176 vessel owners possessing valid swordfish permits could be affected by the selected alternative regarding PLL vessel upgrading restrictions. In total, the final actions could impact approximately 29,587 HMS permit holders. 4,397 of these permit holders are considered small entities.

## 6.2. Gross Revenues of Fishermen

NMFS calculates gross revenues by combining current federal permit holders with their reported logbook landings for 1999 to 2005. These landings are then multiplied by average prices (by region) for swordfish, obtained from dealer reporting. This information is presented in Table 11.

**Table 11. Estimates of the total ex-vessel annual revenues of Atlantic Swordfish HMS fishery.** Sources: NMFS, 2006 and HMS Dealer Reporting forum.

Year	Ex-vessel \$/lb (dw)	Weight lb (dw)	Fishery Revenue
1999	\$3.38	5,942,839	\$20,104,498
2000	\$3.51	4,832,384	\$16,974,346
2001	\$3.74	5,662,350	\$21,153,927
2002	\$3.20	5,985,489	\$19,150,819
2003	\$3.13	4,668,466	\$14,600,627
2004	\$3.57	4,317,369	\$15,391,422
2005	\$3.71	TBD	TBD

Of all Atlantic HMS fisheries, swordfish brings in the highest total gross revenues (~\$15.4 million total in 2004) for any single species. If gross revenues from the swordfish fishery are averaged across the approximately 110 active PLL vessels, then the average annual gross revenue from swordfish fishing is just under \$140 thousand per vessel per year. In recent years, swordfish ex-vessel prices and total revenues have gradually been recovering from a low in 2003.

Table 12 provides data on the prices swordfish fishermen received at the dock. Mean values for ex-vessel prices were derived from the HMS Dealer reporting forms submitted to the NMFS Southeast Regional Office (SERO) and Northeast Regional Office (NERO). Table 12 reports ex-vessel prices by region and year for swordfish.

The ex-vessel price data indicates fairly stable national average ex-vessel prices since 1999, with prices fluctuating between \$3.13 and \$3.74. However, prices have not risen over time to keep up with inflation. Over the past two years however, it appears that ex-vessel prices are beginning to trend upward.

**Table 12. Swordfish ex-vessel prices by region.** Source: HMS Dealer reports submitted to the South East Regional Office (SERO) and Northeast Regional Office (NERO).

Region	Year						
	1999	2000	2001	2002	2003	2004	2005
North Atlantic	\$3.45	\$3.87	\$4.67	\$3.47	\$3.33	\$4.06	\$3.78
Mid Atlantic	\$3.47	\$3.67	\$3.53	\$3.25	\$2.97	\$3.37	\$3.70
South Atlantic	\$3.27	\$3.24	\$3.43	\$3.14	\$3.26	\$3.52	\$3.80
Gulf of Mexico	\$3.35	\$3.25	\$3.31	\$2.91	\$2.95	\$3.31	\$3.44
All Regions	\$3.38	\$3.51	\$3.74	\$3.20	\$3.13	\$3.57	\$3.71

### 6.3. Variable Costs and Net Revenues

In 2003, NMFS initiated mandatory cost-earnings reporting for selected vessels to improve the economic data available for all HMS fisheries. In the past, most of the studies regarding pelagic longline variable costs and net revenues that were available to NMFS analyzed older data from 1996 and 1997. The HMS FMP provides a summary of several past studies on the variable costs and net revenues of longline fleets.

An analysis of the 2004 HMS logbook cost-earnings data provides updated information regarding the costs and revenue of a cross section of vessels operating in the HMS fisheries. The data contains a total of 579 trips taken by 51 different vessels. As described in Larkin *et al.* (2000), median values are reported. Median gross revenues per trip for 2004 were approximately \$12,112. Median total costs per trip were \$4,345 (compared to \$3,320 in the Larkin *et al.* (2000) study), with fuel costs making up \$567 (13 percent) of those costs. Median net revenue in this sample was \$6,728 per trip (compared to \$8,624 in the Larkin *et al.* (2000) study). The typical trip was nine days

long and involved six sets. The median number of crew was three and the average share paid to crew was 11 percent of net revenue (\$740 per trip). The captain's share of net revenue was 20 percent (\$1,346) and the owner's share was reported to be 50 percent (\$3,364). The 2004 cost earnings information is similar to the findings of the 1996 study, but gross revenues appear to be lower than the Porter *et al.* (2001) study of 1997 operations.

#### **6.4. Expected Economic Impacts of the Alternatives Considered**

NMFS considered and analyzed two major topics for revitalizing the North Atlantic swordfish fishery. This first topic considered alternatives to address North Atlantic swordfish incidental and recreational retention limits. Six alternatives were considered for swordfish retention limits, including a No Action alternative. The second topic focused on alternatives to address HMS limited access vessel upgrading restrictions. NMFS analyzed five alternatives regarding HMS limited access vessel upgrading restrictions. The following sections below discuss the economic impacts of the various alternatives considered.

##### Alternative 1a

Under Alternative 1a (No Action), NMFS would maintain the status quo. Under this no action alternative, there would be no change in the current baseline economic and social impacts associated with previously implemented North Atlantic swordfish retention limit regulations.

The current swordfish incidental retention limit may be having an adverse economic or social impact on the fishing sector, based on permit and logbook records. As of February 1, 2006, there were 48 vessels that held valid Incidental Swordfish permits (*i.e.*, they possess the requisite limited access swordfish, shark, and tuna longline permits). As indicated previously in the ecological impacts section, 81 percent of incidental trips did not report any discards. Furthermore, 64 percent of trips did not land any swordfish. Therefore, the majority of Incidental Swordfish permitted vessels did not land or discard swordfish. This could be because the current incidental retention limit is very low, or because these vessels are purposefully avoiding swordfish.

Those trips that reported keeping no swordfish generally had the highest level of swordfish discards. In fact, one trip that did not keep any swordfish reported 52 discards. If any discards were attributable to exceeding the current two fish incidental retention limit, then this could potentially represent lost revenues associated with the current 2-fish incidental swordfish retention limit.

Discards associated with the current incidental trip limit for swordfish may be contributing to the persistent underharvest of the domestic swordfish quota. This may also be impacting associated shore-side businesses. Federal Atlantic swordfish dealer permits have declined from 321 in 2002 to 285 in 2006. Potential reductions in shore-side business activities associated with domestic swordfish handling and processing may be resulting in local adverse economic impacts.

The communities most affected by the current incidental swordfish limit are expected to be located where Incidental swordfish permit holders are concentrated. Figure 14 depicts the geographic distribution of Swordfish Permit holders as of February 2006. In addition, the Final HMS FMP (NMFS 2006) also includes profiles of many of the communities most actively involved in the fishery.

The No Action alternative would also maintain the HMS Angling and Charter/headboat (CHB) retention limit of one North Atlantic swordfish per person, up to three per vessel per trip. This limit may potentially be lowering the demand for Charter boat trips, especially with mixed parties, since each person in a party of six is not afforded the ability to retain a swordfish.

#### Alternative 1b

Under Alternative 1b, NMFS would remove the North Atlantic swordfish retention limit for vessels possessing valid Incidental Swordfish limited access permits, except that the Incidental limit for such vessels participating in the squid trawl fishery would be increased to ten, until 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota is projected to be landed, after which the Incidental swordfish retention limit would revert back to current limits for the remainder of the semi-annual period. This alternative would allow Incidental permit holders to land unlimited amounts of swordfish, and thus allow them greater flexibility, and possibly profitability, in their overall operations. However, this alternative could also potentially have the most significant adverse ecological impacts if vessel owners with Incidental Swordfish permits alter their strategies and choose to deploy additional sets to target swordfish.

For example, an Incidental Swordfish permit holder fishing for tuna during the day could choose to fish for swordfish at night under Alternative 1b. If they simply switch to swordfish fishing and abandon tuna fishing, the overall amount of effort is expected to remain relatively constant. The decision to supplement their tuna revenues with swordfish revenues or to switch to swordfish all together would likely depend on prices, location of fishing grounds, the amount of hold space in the vessel to carry additional swordfish, and any costs associated with refitting their gear. Given the relatively higher ex-vessel prices for tuna, it is not anticipated that many vessels will switch over completely to swordfish fishing if the relative costs associated with targeting swordfish are similar to those costs associated with tuna fishing.

The potential economic gain from this alternative (1b), if a vessel switches entirely to swordfish fishing, would be associated with increased landings from two swordfish per trip up to as many as 605 swordfish per trip (the highest number reported landed by a Directed swordfish vessel) minus what vessels could make tuna fishing during the same time. Using the mean weight of swordfish landed in 2005 of 75.7 lbs and the mean ex-vessel price of \$3.71 in 2005, the estimated value of potentially retaining up to an additional 603 swordfish could be as high as \$ 169,351 per trip. However, this should only be considered an upper bound, especially since it does not take into account

reductions in the retention of other species that might have to occur in order to make room for the swordfish on the vessel. More typically, vessels issued Swordfish Directed permits during the period from 2002 to 2005 averaged 60 to 77 swordfish kept per trip. That would equate to potentially \$16,289 to \$21,064 in additional revenue per trip for Incidental swordfish permit holders that decide to direct on swordfish assuming they share a similar capability to harvest swordfish as Directed swordfish permit holders. This alternative would affect the 48 Incidental Swordfish permit holders that also possess Atlantic Tuna longline category permits and shark limited access permits.

If Incidental permit holders choose to supplement their tuna fishing, then any economic returns from swordfish above the previous two fish limit would be positive. If, instead, incidental permit holders make no changes to fishing practices except landing swordfish that were previously discarded, then that level of fish previously discarded would generate economic benefits from additional revenues. Figures 1 - 3 show the levels of discards that have occurred.

Alternative 1b would also increase the swordfish retention limit to 10 swordfish for vessels issued valid Incident Swordfish limited access permits that participate in the squid trawl fishery. This effectively doubles the current retention limit for these vessels. From 1998 – 2004, squid trawl vessels landed an average of 6.3 mt (ww) per year. Increasing the limit for squid trawl vessels by an additional five swordfish per trip could potentially increase annual landings by all squid trawl vessels to 12.6 mt (ww) per year. This increase of 6.3 mt (ww) of swordfish would be worth a combined total of \$38,743 for all squid trawl vessels per year based on the 2005 average ex-vessel price of swordfish of \$3.71 and a ratio of whole weight to dress weight of 1.33.

#### *Alternative 1c*

Alternative 1c, a preferred alternative, would increase the North Atlantic swordfish retention limit for non-squid trawl vessels holding valid Incidental swordfish limited access permits to 30 fish per vessel per trip, and increase the incidental limit for vessels participating in the squid trawl fishery to 15 fish per vessel per trip. This alternative is intended to provide the opportunity to land swordfish that might otherwise be discarded, but prevent a large increase in additional directed fishing effort on swordfish. As previously indicated, this alternative would likely have only limited adverse ecological impacts.

A 30 fish limit is just below the median number of swordfish reported landed by directed permit holders (36 fish). The economic benefits associated with this alternative are estimated by taking difference between the value of two swordfish and the value of 30 swordfish. Using the mean weight of swordfish landed in 2005 of 75.7 lbs and the mean ex-vessel price of \$3.71 in 2005, the estimated value of potentially retaining an additional 28 swordfish under this alternative is potentially valued at \$7,864 per vessel per trip.

Using logbook records from 2005, it is projected that total annual landings of swordfish will increase from 10,787 lbs. to between 34,879 – 445,116 lbs. under a 30 fish per vessel

incidental retention limit. Using the average ex-vessel price of \$3.71 for 2005, the estimated total value of these additional landings would range from \$89,381 - \$1,611,361 per year.

This alternative would allow Incidental swordfish permit holders to convert discards into landings, and possibly allow vessels to deploy a limited number of swordfish sets per trip. However, Incidental swordfish permit holders are not anticipated to switch entirely to swordfish fishing for the opportunity to land 28 additional swordfish. This alternative could potentially provide some economic return by allowing for the retention of swordfish that otherwise would have been discarded, and because vessels could possibly deploy a few swordfish sets if prices, costs, swordfish availability, and time make it worthwhile. The economic gain would be from two swordfish per trip up to 30 swordfish per trip minus any costs associated with travel, ice, etc. If they choose to supplement their tuna fishing, then any economic returns from swordfish above two fish would be positive. If they make no changes to fishing practices except for landing swordfish that were previously discarded, then the amount of fish that were previously discarded would represent economic benefits. Figure 1 - 3 shows the levels of discards that have occurred.

Under this alternative, Incidental Swordfish permit holders participating in the squid trawl fishery would be allowed to retain up to 15 swordfish per vessel per trip. This would triple the current limit. Based on the current average annual landings of 6.3 mt (ww) of swordfish by the squid trawl fishery, it could be assumed that total landings by squid trawl vessels could increase by 12.6 mt (ww) per year under Alternative 1c. That would result in an estimated increase in total annual combined revenues of approximately \$77,487 for all squid trawl vessels, based on the 2005 average ex-vessel swordfish price of \$3.71 per pound, and a 1.33 whole weight to dressed weight ratio.

#### Alternative 1d

Alternative 1d would increase the North Atlantic swordfish retention limit for non-squid trawl vessels holding valid Incidental swordfish limited access permits to 15 fish per vessel per trip, and increase the incidental limit for these vessels participating in the squid trawl fishery to 10 fish per vessel per trip. This alternative is intended to provide the opportunity to land swordfish that might otherwise be discarded, but prevent a large increase in additional directed fishing effort on the swordfish. As previously indicated, this alternative would likely have only limited adverse ecological impacts.

A 15 fish limit is significantly below the median number of swordfish landed by directed permit holders (36 fish), but it is much higher than the current limit of 2 fish. The economic benefits associated with this alternative are estimated by taking difference between the value of two swordfish and the value of 15 swordfish. Using the mean weight of swordfish landed in 2005 of 75.7 lbs and the 2005 mean ex-vessel price of \$3.71, the estimated value of potentially retaining 13 additional swordfish under this alternative is \$3,651 per vessel per trip.

Using logbook records from 2005, it is projected that total annual landings of swordfish could increase from 10,787 lbs. to between 30,350 – 222,558 lbs. under a 15 fish per vessel Incidental retention limit. Using the average ex-vessel price of \$3.71 for 2005, the estimated total value of these additional landings would range from \$72,579 - \$785,670 per year.

This alternative would allow Incidental swordfish permit holders to convert discards into landings, and possibly allow vessels to deploy an additional swordfish set. However, these vessels are not likely to switch entirely to swordfish fishing for the opportunity to land 13 additional swordfish. This alternative could potentially provide some economic return by allowing for the retention of swordfish that otherwise would have been discarded, and because vessels could possibly deploy a swordfish set if prices, costs, swordfish availability, and time make it worthwhile. The economic gain would be from two swordfish per trip up to 15 swordfish per trip minus any costs associated with travel, ice, etc. If vessel operators choose to supplement their tuna fishing, then any economic returns from swordfish above two fish would be positive. If they make no changes to fishing practices except for landing swordfish that were previously discarded, then the level of fish that were previously discarded would represent economic benefits. Figures 1 - 3 show the levels of swordfish discards that have occurred.

Alternative 1d would also increase the swordfish retention limit to 10 swordfish for vessels issued valid Incidental swordfish limited access permits that participate in the squid trawl fishery. This effectively doubles the current retention limit for these vessels. From 1998 – 2004, squid trawl vessels landed an average of 6.3 mt (ww) per year. Increasing the limit for squid trawl vessels by an additional five swordfish per trip could potentially increase total annual landings by squid trawl vessels to 12.6 mt (ww) per year. This increase of 6.3 mt (ww) of swordfish would be worth a combined total of \$38,743 per year for all squid trawl vessels, based on the 2005 average ex-vessel price of swordfish of \$3.71 and a ratio of whole weight to dressed weight of 1.33.

#### *Alternative 1e*

Alternative 1e, a preferred alternative, would implement a North Atlantic swordfish retention limit for HMS CHB vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels. This alternative would maintain the current recreational limit of one swordfish per person, but increase the allowable upper retention limit (from three fish per vessel). Therefore, a charter vessel possessing a HMS CHB permit with six paying passengers onboard would be limited to possessing or retaining no more than six swordfish. An HMS headboat vessel with 15 paying passengers onboard would be limited to possessing or retaining no more than 15 swordfish. However, if either of these types of vessels had, for example, five paying passengers onboard, the vessel would be limited to possessing or retaining no more than five swordfish.

A few charter boats reported landing up to the three fish limit in 2005. Approximately 25 percent of the swordfish reported landed by CHB vessels in the HMS non-tournament

recreational reporting database were in groups of three fish on the same date. Even though a quarter of the trips may have been limited in the amount of swordfish retained under the existing vessel trip limit, the benefits of increasing the limit could extend beyond those trips. The potential economic benefit would be due to more bookings of charter trips, because the perceived value of a trip for an angler is increased due to the ability to land more fish. The 2004 average daily HMS charterboat rate for day trips was \$1,053. The willingness-to-pay for swordfish charterboat trips may increase under this alternative. Increased bookings could lead to some positive economic multiplier impacts to tackle shops, boat dealers, hotels, fuel suppliers, and other associated local and regional businesses.

### *Alternative 1f*

Alternative 1f, a preferred alternative, would implement a North Atlantic swordfish recreational retention limit for HMS Angling category vessels of one fish per person per trip, up to four swordfish per vessel per trip. It would maintain the current recreational limit of one swordfish per person, but increase the upper retention limit from three fish to four fish per vessel per trip. Thus, a vessel possessing an HMS Angling category permit with three persons onboard would be limited to possessing or retaining no more than three swordfish, a vessel with four persons onboard would be limited to no more than four swordfish, and a vessel with five or more persons onboard would also be limited to four swordfish.

Only a few angling trips reported landing up to the three fish limit in 2005. As discussed previously, approximately seven percent of the swordfish reported landed by Angling category vessels in the HMS non-tournament recreational reporting database were in groups of three fish on the same day. Therefore, the increase from three to four swordfish per vessel per trip under this alternative is not likely to affect a large percentage of recreational fishing trips.

There would be some potential economic benefits from this alternative that would be derived from an increased perceived value of a trip for an angler due to the ability to land more fish. Recreational anglers might take more trips, which could lead to some multiplier benefits to tackle shops, boat dealers, hotels, fuel suppliers, and other related businesses. The average expenditure on HMS related trips is estimated to be \$122 per person per day based on the recreational fishing expenditure survey add-on to the National Marine Fisheries Service's Marine Recreational Fisheries Statistical Survey (MRFSS). The expenditure data include the costs of tackle, food, lodging, bait, ice, boat, fuel, processing, transportation, party/charter fees, access/boat launching, and equipment rental.

However, some of the potential benefits of this alternative could be reduced by the increasing trend in catch-and-release fishing by many recreational anglers. Anglers may not take advantage of the four fish per vessel limit, and may instead decide to release their catch. Moreover for some recreational anglers, the proposed increase in the angling category recreational limit could actually decrease their perceived benefits if they are

ardent catch-and-release fishermen who may consider even this proposed marginal increase in the recreational trip limit to be diminishing the future quality of swordfish angling.

#### Alternative 2a

Alternative 2a (No Action) would maintain the status quo HMS limited access vessel upgrading regulations. These specify that owners of vessels issued HMS limited access permits may upgrade vessels or transfer permits to another vessel only if the vessel upgrade or permit transfer does not result in an increase in horsepower (HP) of more than 20 percent, or an increase of more than 10 percent in length overall (LOA), gross registered tonnage (GRT), or net tonnage (NT) relative to the respective specifications of the first vessel issued the initial limited access permit (the baseline vessel). If any of the three vessel size specifications is increased, any increase in the other two must be performed at the same time. The regulations also specify that vessel horsepower and vessel size may be increased only once. However, an increase in vessel size may be performed separately from an increase in vessel horsepower. These regulations have been in effect since 1999, and are consistent with the upgrading restrictions for Fisheries of the Northeastern United States. Under the No Action alternative, there would be no change in the current baseline economic and social impacts associated with previously implemented North Atlantic swordfish vessel upgrading restrictions.

The baseline of effected entities includes 604 unique HMS limited access permit holders. As of September 26, 2006, there were 176 vessels that were authorized to fish with longline gear for swordfish and tunas (*i.e.*, the vessel possessed a tuna longline permit and the appropriate limited access permits for swordfish and sharks). Of these 176 permitted vessels, only 110 reported PLL activity in the HMS logbook in 2005. As shown in Table 7, the number of active PLL vessels has decreased by approximately 50 percent since the upgrading restrictions went into effect in 1999. The current vessel upgrading restrictions may have contributed to this decline by limiting vessel owners' ability to optimally configure their vessels to maximize their profits given changing ecological, regulatory, and market conditions.

Figures 10 and 11 provide the range of various length and horsepower configurations currently in use by Directed and Incidental swordfish permit holders. Based on this permit data, it appears that the "typical" Directed or Incidental swordfish limited access vessel is approximately 55 feet in length and has a 425 horsepower engine. Similarly, a "typical" swordfish Handgear vessel is approximately 35 feet in length and has 400 horsepower.

Aside from limiting overall fleet capacity, the rationale for originally selecting the current restrictions was based in part, on maintaining consistency with existing limited access upgrading restrictions that were, and still are, in place for vessels issued limited access permits for fisheries of the Northeastern United States. As of September 25, 2006, 25 percent of vessels issued limited access Incidental or Directed swordfish permits, and 45 percent of vessels issued limited access swordfish Handgear permits, also possessed a

limited access permit for fisheries of the Northeastern United States. Therefore, even if current upgrade restrictions are changed for HMS swordfish permit holders, many vessel owners may continue to be constrained in their ability to upgrade their vessels if they wish to maintain their limited access permits for fisheries of the Northeastern United States.

Maintaining the status quo on vessel upgrading restrictions could contribute to several negative economic impacts. First, as previously mentioned, vessels may not be optimally configured for current market conditions, and therefore profits may be less than optimal. Operators of smaller vessels and vessels with lower horsepower have indicated that they would fish in more distant locations if they were allowed to upgrade their vessels. This message was conveyed during public meetings conducted during September 2006. Other vessel owners might want to increase their hull capacity to fish longer without offloading, and some may want to increase their speed in order to reduce transiting time.

Second, current upgrade restrictions may affect the ability of some vessels to carry observers due to inadequate bunk or berthing space. Vessels that would otherwise be required to carry an observer, but are inadequate for purposes of carrying an observer and allowing for operation of normal observer functions, are prohibited from fishing without observer coverage. Observers are not required to board, or stay aboard, a vessel that is unsafe or inadequate. In some situations, the HMS vessel upgrading restrictions may be inadvertently preventing vessel owners from enlarging their vessels so that they can comply with these observer requirements. This could result in lost earnings for vessels that are selected for observer coverage, but are not adequately equipped to carry an observer.

Third, some fishing vessel owners may wish to enhance their crew quarters or other areas to better attract labor. Restraints on vessel size and tonnage affect the ability to modernize or to purchase new vessels. Anecdotally, NMFS has heard that it has been increasingly difficult for vessel owners to retain crews. Enhancing crew quarters to more modern standards could help attract and retain crewmembers and reduce labor costs by improving the quality of life at sea for crew and captains. However, the current upgrade restrictions may prevent these vessel enhancements from occurring.

Finally, limitations on vessel upgrading may affect safety at sea. In general, a larger vessel is oftentimes more seaworthy than a smaller vessel, especially in rough seas.

Without changes to the upgrading restrictions, the number of active swordfish vessels may continue to decline, and underharvests of the annual U.S. swordfish quota may continue to accrue. The following alternatives were considered by NMFS to allow for greater flexibility and potentially a more efficient deployment of the swordfish fleet.

Under each of the alternatives, vessel owners will have to weigh the costs of upgrading the length or horsepower of their vessels with the potential economic benefits associated with an upgrade. Many vessel owners may choose not to upgrade, or be unable to upgrade, even with relaxed restrictions, because of the large capital costs associated with

upgrading. The main economic benefit associated with the following alternatives will likely be from not having to purchase or acquire a permit from another slightly larger vessel, including the associated transaction costs, when an owner wishes to modify a vessel. Rather, they would be able to upgrade using the specifications of their existing vessel and likely would have a larger pool of permits to select from.

The capital costs associated with potential upgrades are difficult to estimate. Large vessel length upgrades are not likely to occur by modifying existing vessels, according to several marine engineers and shipyards that NMFS contacted. They are more likely to result from the purchase of another vessel and the subsequent transfer of permits to that vessel. Horsepower upgrades are more likely to occur on existing vessels in conjunction with an engine replacement due to capital depreciation.

NMFS contacted several shipyards regarding the potential costs of new vessels and upgrades to existing vessels. The shipyards agreed that it is probably more economical to upgrade in size by acquiring another larger vessel, rather than by modifying an existing vessel. However, the estimated cost of building a new vessel is uncertain because relatively few new vessels have been built since the upgrading restrictions were implemented in 1999, according to the shipyards contacted. The overall cost of upgrading would largely depend on the current size of the vessel, the age of the vessel, where the work would be done, financing costs, and whether an existing used vessel is available with the desired specifications, versus constructing a new vessel. For example, a 68-foot PLL vessel over 20 years old recently had a sales price of \$245,000, according to a vessel broker list. Construction of a new vessel could cost more. There may also be costs associated with obtaining a permit, if that were necessary. To better quantify the associated costs and potential scope of vessel upgrades, NMFS sought comments from the public on the current market costs of upgrading PLL and swordfish Handgear vessels, but did not receive any information on this topic.

#### Alternative 2b

Alternative 2b would waive vessel upgrading and permit transfer upgrading restrictions for PLL vessels (*i.e.*, vessels that possess an Atlantic tunas longline permit, as well as limited access Directed or Incidental permits for swordfish and sharks) for 10 years, after which a new vessel baseline would be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect. This alternative would likely have positive economic benefits for PLL vessel owners. However, this alternative is not preferred because it could potentially result in sizeable long-term adverse ecological impacts because there would be no limit on the size that these vessels could be upgraded to.

As discussed earlier, only 176 vessels possess the requisite permits needed to fish with longline gear for swordfish. Of these, there are approximately 73 vessels that are 40 to 80 feet in length, which appears to be the optimal size for fresh swordfish vessels. Because 25 percent of swordfish Incidental and Directed permit holders also hold permits for Northeastern fisheries and may choose not to upgrade in order to retain their

eligibility for these fisheries, it is projected that approximately 55 vessels might upgrade under this alternative. The decision to upgrade a fishing vessel, or to purchase a new vessel and transfer the permits, would be a unique decision for each business owner based upon their individual circumstances. The decision to upgrade or to not upgrade will largely depend on whether the returns expected benefits from an upgrade outweigh the costs of planning, construction, financing, lost fishing time and revenues, and age of their current vessel.

The potential economic benefits of the vessel upgrades would largely depend upon future harvests, ex-vessel prices, fuel prices, and labor costs. These factors fluctuate, often dramatically, with market forces from year to year thereby making any estimated benefits difficult to assess. Independent of those factors, however, vessel owners will gain the economic benefits associated with having the increased flexibility of adjusting the vessel configurations in terms of length and horsepower to best fit their business. In addition, vessel owners under this alternative would be able to better address the requirement to be able to safely take on observers, and thus avoid lost fishing time. The potential to make vessel upgrades for the expansion of bunk and berthing areas could enhance the quality of life for crew and captains thereby providing intangible benefits, and could potentially reduce the actual costs of retaining labor. Finally, the potential to lengthen vessels and to upgrade engine horsepower might have important positive safety implications, especially for smaller vessels operating far offshore in areas prone to extreme weather.

There could be some economic costs associated with an expansion of capacity in the swordfish longline fleet. Any adverse ecological impacts could possibly diminish the quality of recreational fishing for swordfish or other species. In addition, gear conflicts could arise if the decline in the number of active commercial swordfish vessels is reversed because of improved profitability of commercial longline vessels as a result of this alternative. These factors could result in a decrease in recreational anglers' willingness-to-pay to participate in recreational fishing, and potentially a decline in demand for charter and headboat services. However, since swordfish PLL vessels might be better able to operate farther from shore, especially after upgrades, potential gear conflicts with recreational anglers could be reduced under this alternative.

There could also be reductions in the value of limited access permits as a result of waiving the upgrade restrictions. The supply of usable permits for vessel owners that want to upgrade under the current limited access regulations is restricted, since permits must have sufficient length and horsepower characteristics in order to be transferred to another vessel. Modifying the upgrading restrictions would give a potential new entrant into the fishery a larger selection of permits to choose from, since there might be larger pool of potential permits for sale. This increased supply could reduce the value of certain HMS limited access permits. However, any improvements in the profitability of the fishery might increase demand for permits and, thus, possibly offset any decreases in permit value.

Waving vessel upgrade restrictions for vessels possessing certain HMS limited access permits would likely produce some secondary and regional economic impacts. Shoreside

support businesses such as shipyards, marine architects, and other commercial vessel suppliers could receive increased business from owners wanting to upgrade their vessels under Alternative 2b. Fish dealers may need to expand their operations to handle any greater supplies of swordfish that might result from increased fleet capacity. However, if recreational fisheries are negatively impacted by increases in commercial fishing activity, shoreside support business for the recreational sector such as bait and tackle stores, hotels, and restaurants could see a decline in business.

#### Alternative 2c

Alternative 2c would waive HMS upgrading and permit transfer upgrading restrictions for vessels issued swordfish Handgear permits for 10 years, after which a new baseline would be established and the 10% LOA, GRT, NT and 20% HP restrictions would go back into effect. This alternative would likely have positive economic benefits for swordfish Handgear vessel owners. For the same reasons discussed in Alternative 2b, it is not possible to accurately predict how many vessels would be upgraded, or the anticipated future capacity of the fishery, because the prediction depends upon the personal choices made by many individual boat owners.

The decision to upgrade a fishing vessel, or to purchase a new vessel and transfer the permits, would be a unique decision for each business, based on their individual circumstances. The decision to upgrade or not to upgrade will largely depend on whether the returns expected from an upgrade outweigh the costs of planning the upgrade, construction, financing, time to complete the necessary work, age of their current vessel and the forgone revenues associated with being out of the fishery while vessel work is being completed.

Using assumptions described in Chapter 4, it is estimated that this alternative could potentially result in eight swordfish Handgear permit holders that might consider upgrading the length of their vessels, and eight that might potentially consider upgrading the horsepower. Based on public comment during the September 2006 public meetings, it appears that horsepower is an important factor for swordfish Handgear vessel operators that wish to transit more quickly to the fishing grounds and back.

The potential economic benefits of any vessel upgrades depend primarily upon future harvests, ex-vessel prices, fuel prices, and labor costs. These factors fluctuate, often dramatically, with market forces from year to year, making any estimate of benefits very difficult to assess. Independent of those factors, however, vessel owners will gain economic benefits by having increased flexibility to adjust their vessel's configurations in terms of length and horsepower to best fit their unique business needs. In addition, vessel owners would be able to better address the requirement to be able to safely carry observers, and thus avoid lost fishing time. The potential to make vessel upgrades to expand bunk and berthing areas could enhance the quality of life for crew and captains, thus providing intangible benefits and possibly reducing the actual cost of retaining labor. Finally, the potential to lengthen vessels and upgrade engine horsepower might have

important positive safety implications, especially for smaller vessels operating in areas prone to extreme weather.

Due to the proximity of the East Florida Coast PLL closed area, the swordfish handgear fishery is currently most active in the Straits of Florida, according to anecdotal information. This is the same area that has experienced a recent resurgence in recreational swordfish fishing. Therefore, unlike Alternative 2b, this alternative is not expected to shift commercial fishing activity further offshore or reduce adverse impacts in spawning or nursery areas. It is possible that this alternative could increase gear conflicts with recreational anglers.

There could be some economic costs associated with an expansion of capacity in the swordfish handgear fishery. Any adverse ecological impacts could potentially result in diminished quality of recreational fishing for swordfish or other species. In addition, gear conflicts could arise if the decline in the commercial swordfish fleet reverses itself due to improved profitability resulting from this alternative. These factors could reduce recreational anglers' willingness-to-pay to participate in recreational fishing and potentially reduce demand for charter and headboat services.

Waiving the upgrading restrictions for HMS swordfish handgear vessels could also have secondary and regional economic impacts. Shoreside support businesses such as shipyards, marine architects, and other commercial vessel suppliers could receive increased business from vessel owners wanting to upgrade. Fish dealers might also need to expand their operations to handle greater supplies of swordfish. However, if recreational fisheries are negatively impacted by an increase in swordfish handgear activity, shoreside support businesses for the recreational sector such as bait and tackle stores, hotels, and restaurants could see a decline in business.

This alternative would likely be effective at increasing domestic swordfish landings and more fully harvesting the U.S. swordfish allocation. However, there could be negative economic impacts on the recreational sector of the fishery and its associated support industries. In addition, adverse ecological impacts resulting from increased handgear fishing activities in more sensitive ecological areas may significantly reduce the overall net benefits of this alternative. However, the overall impacts of this alternative are very uncertain because it is difficult to predict to what extent swordfish handgear vessel owners would decide to upgrade their vessels.

#### Alternative 2d

Alternative 2d would waive all HMS limited access vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new vessel baseline will be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect. This alternative could potentially have the most severe adverse ecological impacts, compared to the other alternatives, because the universe of affected vessels is substantially larger. However, it is not possible to precisely quantify the magnitude of impacts for the reasons discussed above.

As of February 2006, there were 1,131 total HMS commercial fishing permits (191 directed swordfish, 86 incidental swordfish, 88 swordfish handgear, 240 directed shark, 312 incidental shark, and 214 tuna longline). However, there were only 604 actual permit holders since some vessel owners hold more than one permit.

Alternatives 2b and 2c were limited to vessels that possess certain HMS limited access permits. Alternative 2d includes those vessels, as well as all other HMS limited access permits, including those that fish only for sharks. Therefore, approximately 376 additional vessels could be eligible for unlimited upgrades under this alternative (240 directed shark + 312 incidental shark – 176 vessels that eligible to fish with longline gear for tunas and swordfish). It is assumed that all of these additional shark vessels could be upgraded under this alternative, but that few would take immediate advantage of the opportunity given current uncertainties in the domestic shark fishery. Also, Incidental shark permit holders are governed by retention limits for LCS, SCS and pelagic sharks. Directed shark permit holders are governed by retention limits for LCS. Unless a vessel's size prohibits the landing of these retention limits, or a Directed shark permit holder intends to land more SCS, a vessel owner may not necessarily need to enlarge their vessel.

Given the potentially reduced opportunities in the shark fisheries, it is unlikely that shark vessel owners will commit to long-term financing for vessel upgrades. Nevertheless, because many shark species are overexploited, the potential for adverse ecological impact on these species exists under this alternative.

Other economic benefits and costs are similar to Alternatives 2b and 2c, including any secondary economic impacts to shoreside industries associated with fishing.

#### *Alternative 2e*

Alternative 2e, a preferred alternative, would establish new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for HMS vessels that possess Incidental or Directed shark and swordfish permits, and an Atlantic Tunas Longline category permit. The new restrictions would be equivalent to 35 percent LOA, GRT, and NT, as measured relative to the baseline vessel specifications (i.e., the specifications of the vessel first issued an HMS limited access permit), and would remove HP upgrading and permit transfer upgrading restrictions for these vessels. In addition, this alternative has been modified to remove the requirement that limits all HMS limited access permit holders to only one upgrade, up to the maximum allowable size and horsepower. Under this alternative, all HMS limited access permit holders would be allowed to make incremental upgrades, up to the allowable maximums.

Alternative 2e is anticipated to have slightly lower economic benefits to permit holders than Alternative 2d, but would likely have a very similar outcome to Alternative 2b, except that a few dramatic upgrades would not qualify under this alternative and there would be no reversion back to the current regulations after 10 years. However, for the

same reasons discussed previously, it is not possible to accurately predict how many vessels will be upgraded, or the anticipated future capacity of the fishery, because that prediction is dependent upon the business decisions of many individual boat owners. This alternative is preferred because it will improve the ability of U.S. vessels to more fully harvest the domestic ICCAT recommended swordfish quota, but would impose some limits on overall fleet capacity by restricting the universe of potentially impacted entities to certain vessels only, and by limiting the magnitude of allowable upgrades.

Alternative 2e would impose an upper limit on the magnitude of vessel size upgrades (LOA, GRT, & NT) but not HP, and is restricted only to vessels that possess the permits necessary to fish for tunas and swordfish with longline gear (*i.e.*, vessels that possess an Atlantic tunas longline permit, as well as certain limited access permits for swordfish and sharks). For purposes of analysis, the optimal size for Incidental and Directed swordfish vessels is assumed to range from 40 – 80 feet, based on the data in Figure 10. The smaller vessels range from 40 – 60 feet, and the larger vessels range from 60 – 80 feet. Assuming that all owners of vessels 40 – 70 ft. would consider upgrading to bigger vessels, Figure 10 shows that up to 155 vessels might be increased in size by 25 to 35 percent (note: vessels that have already been upgraded by 10 percent would only be eligible for a 25 percent increase under this alternative). However, because only 65 percent of swordfish permit holders possess the requisite permits needed to fish with longline gear, up to 101 vessel owners would be likely to consider upgrading their vessels by 25 – 35 percent under this alternative. Finally, because 25 percent of swordfish Incidental and Directed permit holders also hold permits for Northeastern fisheries and may choose not to upgrade in order to retain their eligibility for these fisheries, it is projected that approximately 76 vessels might be upgraded. For an “average” 55-foot swordfish vessel, this would result in 69 – 74 foot vessel, depending upon whether the vessel has already been upgraded. At the opposite ends of the spectrum, for the reasons discussed above, it is also possible that all PLL vessels could increase by 25 – 35 percent or, conversely, none of the PLL vessels would be upgraded.

The potential economic benefits of the vessel upgrades would depend upon future harvests, ex-vessel prices, fuel prices, and labor costs. These factors fluctuate, often dramatically, with market forces from year to year making any estimated benefits difficult to assess. Independent of those factors, however, vessel owners will gain the economic benefits associated with having increased flexibility to adjust their vessel configurations in terms of length and horsepower to best fit their business needs. However, that flexibility will be capped for increases in vessel length, gross tonnage, and net tonnage unlike in Alternatives 2b, 2c, and 2d. In addition, vessel owners under this alternative would be able to better address the requirement to be able to safely carry observers, and thus avoid lost fishing time. The potential to make vessel upgrades for the expansion of bunk and berthing areas could enhance the quality of life for crew and captains and, thereby, provide intangible benefits and potentially reduce the actual costs of retaining labor. The potential to lengthen vessels and upgrade engine horsepower could have important positive safety implications, especially for smaller vessels operating far offshore in areas prone to extreme weather. Finally, improving the ability of PLL

vessels to fish further offshore could relieve fishing pressure in ecologically sensitive areas and reduce gear conflicts, which would benefit the recreational sector.

It is not possible to precisely quantify the social and economic impacts of removing the “one time only” upgrade restriction because, if a permit renewal was denied for violating the “one time only” restriction, the permit was not issued or recorded in the database. However, NMFS is aware that some permit holders have upgraded their vessels by amounts less than the allowable maximums, and are currently limited by the “one time only” restriction. Removing this restriction would allow these vessel owners to upgrade by the remaining allowable amount. Any socio-economic benefits discussed above would be applicable (flexibility, safety at sea, etc.). The primary benefit is that it would allow vessel owners to incrementally increase vessel size, depending upon their needs, rather than being required to take the maximum upgrade all at once.

There could be some economic costs associated with an expansion of capacity in the swordfish fleet. Any adverse ecological impacts associated with alternative 2e, such as increased commercial swordfish landings, could potentially diminish the quality of recreational fishing for swordfish or other species. This could result in decreases in recreational anglers’ willingness-to-pay to participate in recreational fishing, and potentially a decline in demand for charter and headboat services.

There could also be some small reductions in the value of limited access permits. The supply of usable permits for vessel owners that want to upgrade under the current limited access regulations was restricted, since permits had to have sufficient length and horsepower characteristics in order to be transferred to a different or new vessel. Lifting the horsepower restrictions and increasing the size upgrade allowance could give a potential new entrant into the fishery a larger selection of permits to choose from since they would be able to select from a larger pool of potential permits for sale. This increased supply could reduce the value of limited access permits. However, any improvements in the profitability of the fishery might increase demand for permits and thus potentially offset any decreases in value as a result of the increased supply of usable permits.

Easing vessel upgrade restrictions for vessels operating with longline gear would also have secondary and regional economic impacts. Shoreside support businesses such as shipyards, marine architects, and other commercial vessel suppliers could receive increased business from vessels wanting to upgrade under this alternative. Fish dealers might need to expand their operations to handle larger supplies of swordfish. However, if recreational fisheries are negatively impacted by any increases in pelagic longline and handgear vessel activity, shoreside support businesses for the recreational sector such as bait and tackle stores, hotels, and restaurants may see declines in business.

## **7.0 REGULATORY IMPACT REVIEW**

The 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. Certain elements required in an RIR are also required as part of an environmental impact statement (EIS). Thus, this section should be considered only part of the RIR; the rest of the RIR can be found throughout this document.

### **7.1. Description of the Management Objectives**

Please see Chapter 1 for a description of the management objectives associated with these management actions.

### **7.2. Description of the Fishery**

Please see Chapter 3 and the Final Consolidated HMS FMP (NMFS, 2006) for a description of the fisheries that could be affected by this rulemaking.

### **7.3. Statement of the Problem**

Please see Chapter 1 for a description of the problem and need for these management actions.

### **7.4. Description of Each Alternative**

Please see Chapter 2 for a summary of each alternative and Chapter 4 for a complete description of each alternative and its expected ecological, social, and economic impacts. Chapter 6 and 8 provide additional information related to the impacts of the alternatives.

### **7.5. Economic Analysis of Expected Effects of Each Alternative Relative to the Baseline**

NMFS does not believe that the national net benefits and costs would change significantly in the long run as a result of implementation of the selected alternatives compared to the baseline of no action. The actions considered in this document address the current underharvest of the U.S. ICCAT recommended swordfish quota by increasing Incidental and recreational swordfish retention limits (Topic 1), and increasing HMS PLL vessel upgrading restrictions (Topic 2). It is anticipated that the present value of gross and net revenues for the swordfish fishery at the ex-vessel level could increase, but that would ultimately depend upon the extent to which fishermen increase their swordfish landings. Table 13 indicates possible changes as a result of each alternative. Alternative 1a maintains the status quo for swordfish retention limits. Alternative 1b removes the Incidental swordfish retention limit until 70 percent of the directed swordfish is projected to be landed. Preferred alternative 1c increases the Incidental swordfish limit from two fish per trip to 30 fish per trip, and the Incidental squid trawl limit from five fish to 15 fish. Alternative 1d increases the Incidental swordfish limit from two fish to 15 fish, and the squid trawl limit from five fish to 10 fish. Alternatives 1e and 1f modify recreational swordfish retention limits by increasing the per vessel limits. Alternative 2a maintains the status quo for vessel upgrading. Alternative 2 b would remove vessel upgrading restrictions for PLL vessels only, for 10 years. Alternative 2 c would remove vessel

upgrading restrictions for swordfish Handgear vessels only, for 10 years. Alternative 2 c would remove vessel upgrading restrictions for all HMS limited access vessels, for 10 years. Finally, Alternative 2 e would modify vessel upgrading restrictions for PLL vessels only, by removing HP restrictions and increasing vessel size restrictions (LOA, GRT, & NT) from 10 percent to 35 percent, with no sunset date, and remove the “one time only” upgrading restriction for all HMS limited access vessels. These measures are intended to provide U.S. fishermen with additional opportunities to harvest the ICCAT-recommended U.S. swordfish quota. Table 13 provides a summary of the net economic benefits and costs associated with each alternative.

**Table13. Net Economic Benefits and Costs for each Alternative.**

<b>Alternatives</b>	<b>Net Economic Benefits</b>	<b>Net Economic Costs</b>
Alternative 1a No Action.	<i>Long-term:</i> Potential increased swordfish abundance.  <i>Short-term:</i> None.	<i>Long-term:</i> Economic losses from regulatory discards. <i>Short-term:</i> Economic losses from regulatory discards
Alternative 1b Remove the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits, except that vessels issued valid Incidental swordfish permits and participating in the squid trawl fishery would be increased to ten, until 70 percent of the adjusted domestic semi-annual North Atlantic swordfish quota is projected to be landed, after which the Incidental swordfish retention limit will revert back to two swordfish per trip, and five swordfish per trip for squid trawl vessels, for the remainder of the semi-annual period	<i>Long-term:</i> Largest potential projected benefits from increased swordfish landings  <i>Short-term:</i> Largest potential projected benefits from increased swordfish landings	<i>Long-term:</i> Potential increase in bycatch, Potential decrease in swordfish abundance.  <i>Short-term:</i> Potential increase in bycatch, Potential decrease in swordfish abundance.

<b>Alternatives</b>	<b>Net Economic Benefits</b>	<b>Net Economic Costs</b>
<p>Alternative 1c  <i>Increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 30 fish per vessel per trip, and increase the limit for vessels issued valid Incidental swordfish limited access permits and participating in the squid trawl fishery to 15 fish per vessel per trip – Preferred Alternative.</i></p>	<p><i>Long-term:</i> Moderate projected benefits from converting swordfish discards to landings.</p> <p><i>Short-term:</i> Moderate projected benefits from converting swordfish discards to landings</p>	<p><i>Long-term:</i> Potential increase in bycatch, but mitigated by other measures.</p> <p><i>Short-term:</i> Potential increase in bycatch, but mitigated by other measures.</p>
<p>Alternative 1d  Increase the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 15 fish per vessel per trip, and increase the limit for vessels issued valid Incidental swordfish limited access permits and participating in the squid trawl fishery to ten fish per vessel per trip.</p>	<p><i>Long-term:</i> Minor projected benefits from converting swordfish discards to landings.</p> <p><i>Short-term:</i> Minor projected benefits from converting swordfish discards to landings</p>	<p><i>Long-term:</i> Potential minor increase in bycatch, but mitigated by other measures.</p> <p><i>Short-term:</i> Potential minor increase in bycatch, but mitigated by other measures.</p>
<p>Alternative 1e  <i>Implement a North Atlantic swordfish retention limit for HMS CHB vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels – Preferred Alternative.</i></p>	<p><i>Long-term:</i> Increased demand for CHB trips. Benefits for shoreside businesses</p> <p><i>Short-term:</i> Increased demand for CHB trips. Benefits for shoreside businesses</p>	<p><i>Long-term:</i> Potential minor decrease in swordfish abundance.</p> <p><i>Short-term:</i> None.</p>

<b>Alternatives</b>	<b>Net Economic Benefits</b>	<b>Net Economic Costs</b>
<p>Alternative 1f  <i>Implement a North Atlantic swordfish recreational retention limit for HMS Angling category vessels of one fish per person per trip, up to four swordfish per vessel per trip – Preferred Alternative</i></p>	<p><i>Long-term:</i> Increased benefits for shoreside businesses if Angling trips increase</p> <p><i>Short-term:</i> Increased benefits for shoreside businesses if Angling trips increase.</p>	<p><i>Long-term:</i> Potential minor decrease in swordfish abundance.</p> <p><i>Short-term:</i> None.</p>
<p>Alternative 2a            No Action</p>	<p><i>Long-term:</i> Potential increased swordfish abundance.</p> <p><i>Short-term:</i> None.</p>	<p><i>Long-term:</i> Potential decline in numbers of swordfish vessels, continued underharvest of quota. Reduced safety at sea.</p> <p><i>Short-term:</i> continued underharvest of quota. Reduced safety at sea.</p>
<p>Alternative 2b            Waive HMS limited access vessel upgrading and permit transfer upgrading restrictions for all vessels that are authorized to fish with longline gear for swordfish and tunas for 10 years, after which a new vessel baseline will be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect.</p>	<p><i>Long-term:</i> Increased flexibility to upgrade. Modernization of PLL swordfish fleet. Improved potential to harvest swordfish quota. Improved safety at sea</p> <p><i>Short-term:</i> Increased flexibility to upgrade. Modernization of PLL swordfish fleet. Improved potential to harvest swordfish quota, improved safety at sea.</p>	<p><i>Long-term:</i> Potential excess capacity in fishery. Potential increase in bycatch.</p> <p><i>Short-term:</i> Potential increase in bycatch..</p>
<p>Alternative 2c            Waive HMS limited access swordfish handgear vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new baseline will be established and the 10% LOA, GRT, NT and 20% HP restrictions would go back into effect.</p>	<p><i>Long-term:</i> Increased flexibility to upgrade. Modernization of PLL swordfish fleet. Improved potential to harvest swordfish quota. Improved safety at sea</p> <p><i>Short-term:</i> Increased flexibility to upgrade. Modernization of PLL swordfish fleet. Improved potential to harvest swordfish quota. Improved safety at sea</p>	<p><i>Long-term:</i> Potential increase in gear conflicts. Potential increases in bycatch. Impacts on undersized swordfish</p> <p><i>Short-term:</i> Potential increase in gear conflicts. Potential increases in bycatch. Impacts on undersized swordfish</p>

Alternatives	Net Economic Benefits	Net Economic Costs
<p>Alternative 2d Waive all HMS limited access vessel upgrading and permit transfer upgrading restrictions for 10 years, after which a new vessel baseline will be established and the 10 percent LOA, GRT, NT; and 20 percent HP restrictions would go back into effect.</p>	<p><i>Long-term:</i> Increased flexibility to upgrade. Modernization of PLL swordfish fleet. Improved potential to harvest swordfish quota. Improved safety at sea</p> <p><i>Short-term:</i> Increased flexibility to upgrade. Modernization of PLL swordfish fleet. Improved potential to harvest swordfish quota. Improved safety at sea</p>	<p><i>Long-term:</i> Potential impacts on shark populations. Potential increase in gear conflicts. Potential increases in bycatch. Adverse impacts on undersized swordfish</p> <p><i>Short-term:</i> Adverse impacts on shark populations. Potential increase in gear conflicts. Potential increases in bycatch. Adverse impacts on undersized swordfish..</p>
<p>Alternative 2e <i>Establish new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for HMS vessels that are authorized to fish with longline for swordfish and tunas, equivalent to 35 percent LOA, GRT, and NT, as measured relative to the baseline vessel specifications (i.e., the specifications of the vessel first issued an HMS limited access permit), and remove HP upgrading and permit transfer upgrading restrictions for these vessels. Remove “one time only” upgrade restriction – Preferred Alternative</i></p>	<p><i>Long-term:</i> Increased flexibility to upgrade. Modernization of PLL swordfish fleet. Improved potential to harvest swordfish quota. Improved safety at sea.</p> <p><i>Short-term:</i> Increased flexibility to upgrade. Modernization of PLL swordfish fleet. Improved potential to harvest swordfish quota. Improved safety at sea</p>	<p><i>Long-term:</i> Potential minor increase in bycatch, but mitigated by existing measures.</p> <p><i>Short-term:</i> Potential minor increase in bycatch, but mitigated by existing measures.</p>

## 7.6. Summary

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; and (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the legal mandates, the President’s priorities, or the principles set forth in the Executive Order. The selected alternatives described in this document do not meet the above criteria. Therefore, under E.O. 12866,

the selected alternatives described in this document have been determined to be not significant for the purposes of E.O. 12866. A summary of the expected net economic benefits and costs of each alternative, which are based on supporting text in Chapters 4 and 6, can be found in Table 13.

## **8.0 FINAL REGULATORY FLEXIBILITY ANALYSIS**

The Final Regulatory Flexibility Analysis (FRFA) is conducted to comply with the Regulatory Flexibility Act (5 USC 601 et. seq.) and provides a description of the economic impacts of the various alternatives on small entities. Certain elements required in a FRFA are also required as part of an environmental assessment (EA). Therefore, the FRFA incorporates the economic impacts identified in the EA. The Initial Regulatory Flexibility Analysis was done in the EA for the proposed rule.

### **8.1 Statement of the Need for and the Objective of this Final Rule**

Please see Chapter 1 for a description of the objective of this final rule.

### **8.2 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 several comments on the proposed rule and draft EA during the public comment period. A summary of these comments and the Agency's responses are included in Appendix A to this document, and will be included in the final rule. NMFS did not receive any comments specific to the Initial Regulatory Flexibility Analysis (IRFA), but did receive a limited number of comments related to economic issues and concerns. These comments are responded to, with the other comments, in Appendix A. There are no changes to the final rule resulting from these comments. The specific economic concerns are summarized here.

Comment was received regarding the concern that putting more swordfish on the market by increasing the Incidental swordfish retention limit will reduce the price that Directed swordfish permit holders receive for their swordfish and have negative economic consequences. NMFS recognizes that an increase in the volume of incidentally caught swordfish could impact swordfish prices received by all permit holders. However, some constituents have told NMFS that the current 2-fish Incidental retention limit does not justify the additional effort and costs of fishing for, or landing, swordfish, and then bringing them to market. The current 2-fish Incidental retention limit has contributed to an inadequate infrastructure and marketing channel in some areas that is not suitable for handling swordfish. NMFS is hopeful that the 30-fish retention limit will provide more of an incentive to land and market incidentally caught swordfish, without a significant disruption to swordfish prices. Increased participation by Incidental swordfish permit holders could help to develop a more consistent supply of swordfish, and thus lead to a more robust market for swordfish products and help to stabilize prices.

NMFS also received public comment concerning the availability of capital for the vessel upgrading that would be allowed under preferred alternative 2e. There was concern that easing the upgrading restrictions would not revitalize the swordfish fishery due to a lack of funds for capital upgrades. However, several constituents identified the current vessel upgrading restrictions as one factor, among several, limiting the ability of the U.S. vessels to fully harvest the U.S. swordfish quota. Vessel owners are not required to upgrade. The option to upgrade vessels could improve the flexibility of some vessel owners to make individual business decisions, based upon their unique circumstances.

Finally, some commenters indicated that a 35 percent upgrade in vessel size was not sufficient under preferred alternative 2e. In response, the Agency indicated a 35 percent increase in vessel size would allow an “average” 55-foot vessel to be upgraded to a 69 – 74-foot vessel, depending upon whether a vessel has already been upgraded by 10 percent. This is a sizeable increase. In addition, there are currently about 50 vessels greater than 70 feet in length that would qualify for the new upgrading provisions. These vessels could be upgraded to more than 90 feet in length and possibly be converted to freezer vessels, upgrades which some commenters suggested are necessary. NMFS currently believes that it is important to keep fleet capacity commensurate with resource abundance, to ensure the sustainability of the swordfish fishery. Until additional analysis is completed and other logistical issues are resolved, it is still necessary to keep overall fleet capacity within some limits, as contained in preferred alternative 2e.

### **8.3. Description and Estimate of the Number of Small Entities to Which the Final Rule Would Apply**

NMFS considers all HMS commercial permit holders to be small entities because they either had gross receipts less than \$4.0 million for fish-harvesting, gross receipts less than \$6.0 million for charter/headboats, or 100 or fewer employees for wholesale dealers. These are the SBA size standards for defining a small versus large business entity in this industry. A description of the fisheries affected, the categories and number of permit holders can be found in Chapter 6.

### **8.4. Description of the Projected Reporting, Record-keeping, and Other Compliance Requirements of the Proposed Rule, Including an Estimate of the Classes of Small Entities Which Would Be Subject to the Requirements of the Report or Record**

None of the alternatives considered for this final rule would result in additional reporting, record-keeping, and compliance requirements that would require new Paperwork Reduction Act filings.

### **8.5. Description of the Steps the Agency Has Taken to Minimize the Significant Economic Impact on Small Entities Consistent with the Stated Objectives of Applicable Statutes, 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**

Fishermen, dealers, and managers in these fisheries must comply with a number of international agreements, domestic laws, and other FMPs. These include, but are not limited to, the Magnuson-Stevens Act, the Atlantic Tunas Convention Act, the High Seas Fishing Compliance Act, the Marine Mammal Protection Act, the Endangered Species Act, the National Environmental Policy Act, the Paperwork Reduction Act, and the Coastal Zone Management Act. NMFS strives to ensure consistency among the regulations with Fishery Management Councils and other relevant agencies. NMFS does not believe that the final regulations would conflict with any relevant regulations, federal or otherwise.

### **8.6. Description of Any Significant Alternatives to the Proposed Rule That Accomplish the Stated Objectives of Applicable Statutes and That Minimize Any Significant Economic Impact of the Proposed Rule on Small Entities**

One of the requirements of a FRFA is to describe any alternatives to the final rule which accomplish the stated objectives and which minimize any significant economic impacts. These impacts are discussed below and in Chapters 4 and 6 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 rule, consistent with the Magnuson-Stevens Act and the Endangered Species Act (ESA), NMFS cannot exempt small entities or change the compliance requirements only for small entities. Thus, there are no alternatives discussed that fall under the first and fourth categories described above. In addition, none of the alternatives considered would result in additional reporting or compliance requirements (category two above) because all of the alternatives considered were intended to increase the domestic harvest of Atlantic swordfish, while maintaining important bycatch reduction measures. With regards to category three above, all of the alternatives for modifying vessel upgrading restrictions are based upon performance standards. In particular, the selected alternative does not mandate a particular change to vessel design but rather provides additional flexibility for vessel owners to decide how best to upgrade their vessels. As described below, NMFS analyzed six different alternatives for retention limits and five different alternatives for vessel upgrading in the proposed rulemaking and provided justification for the selection of the preferred alternative to achieve the desired objective.

NMFS addressed two major topics to revitalize the U.S. swordfish fishery. Topic 1 examined North Atlantic swordfish retention limits, and Topic 2 examined HMS limited access vessel upgrading restrictions.

The alternatives considered for modifying North Atlantic swordfish retention limits included: no action (Alternative 1a); removing the retention limit for Incidental swordfish limited access permit holders, except that the Incidental limit for vessels participating in the squid trawl fishery would be increased to ten, until 70 percent of the adjusted domestic semi-annual quota is projected to be landed (Alternative 1b); increasing the North Atlantic swordfish retention limit for Incidental swordfish limited access permits to 30 fish per vessel per trip and increase the limit for squid trawl vessels with Incidental swordfish permits to 15 fish per vessel per trip (Preferred Alternative 1c); increasing the North Atlantic swordfish retention limit for Incidental swordfish limited access permits to 15 fish per vessel per trip and increase the limit for squid trawl vessels with Incidental swordfish permits to 10 fish per vessel per trip (Alternative 1d); implement a recreational swordfish retention limit for HMS CHB vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat vessels (Preferred Alternative 1e); and implement a swordfish recreational retention limit for HMS Angling category vessels of one fish per person per trip, up to four swordfish per vessel per trip (Preferred Alternative 1f).

All of the alternatives, except the no action alternative, provide positive economic impacts to small businesses. Alternative 1b could potentially result in greater benefits to small entities. However, the ecological impacts are likely to be greater than preferred alternative 1c. In addition, the uncertainty associated with potentially achieving 70 percent of the domestic swordfish quota during a semi-annual season could make business planning more uncertain and diminish the benefits of this less restrictive alternative.

The alternatives considered for modifying HMS limited access vessel upgrading and permit transfer upgrading restrictions included: no action (Alternative 2a); waiving HMS limited access vessel upgrading and permit transfer upgrading restrictions for all vessels that are authorized to fish with longline gear for swordfish and tunas for 10 years (Alternative 2b); waiving HMS limited access swordfish handgear vessel upgrading and permit transfer upgrading restrictions for 10 years (Alternative 2c); waiving all HMS limited access vessel upgrading and permit transfer upgrading restrictions for 10 years (Alternative 2d); and establishing new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for HMS vessels that are authorized to fish with pelagic longline for swordfish and tunas equivalent to 35 percent LOA, GRT, and NT, as measured to baseline vessel specifications, and remove horsepower upgrading and permit transfer upgrading restrictions for these vessel (Preferred Alternative 2e). The last alternative, which would restrict vessel size upgrades to 35 percent and remove horsepower upgrading restrictions for certain permit holders, is the preferred alternative (Alternative 2e).

All of the alternatives, except the no action alternative, provide positive economic impacts to small businesses. Alternatives 2b, 2c, and 2d would provide greater flexibility than the preferred alternative. However, these alternatives have the potential for much greater adverse environmental impacts because there would be no limit on the size that vessels could be upgraded to. The ten-year period associated with Alternatives 2b, 2c, and 2d may, or may not, provide all fishery participants with enough time to acquire the capital and complete any desired upgrades greater than 35 percent in length. The selected alternative does not have a time restriction associated with it, and therefore may provide more flexibility time wise in securing financing and completing any upgrades in the future. Alternative 2e also ensures that capacity in the fishery would not increase by an unlimited amount. If capacity were to increase by an unlimited amount under the non-preferred alternatives, swordfish prices and vessel profitability could decline in the long-term depending upon swordfish landings, and would likely create unquantifiable adverse ecological consequences.

## **9.0 COMMUNITY PROFILES**

This chapter serves as a brief overview and determination of the social impacts associated with the proposed swordfish revitalization regulations. A more comprehensive review of community profiles for all HMS fisheries can be found in Section 9 of the Final Consolidated HMS FMP (NMFS, 2006).

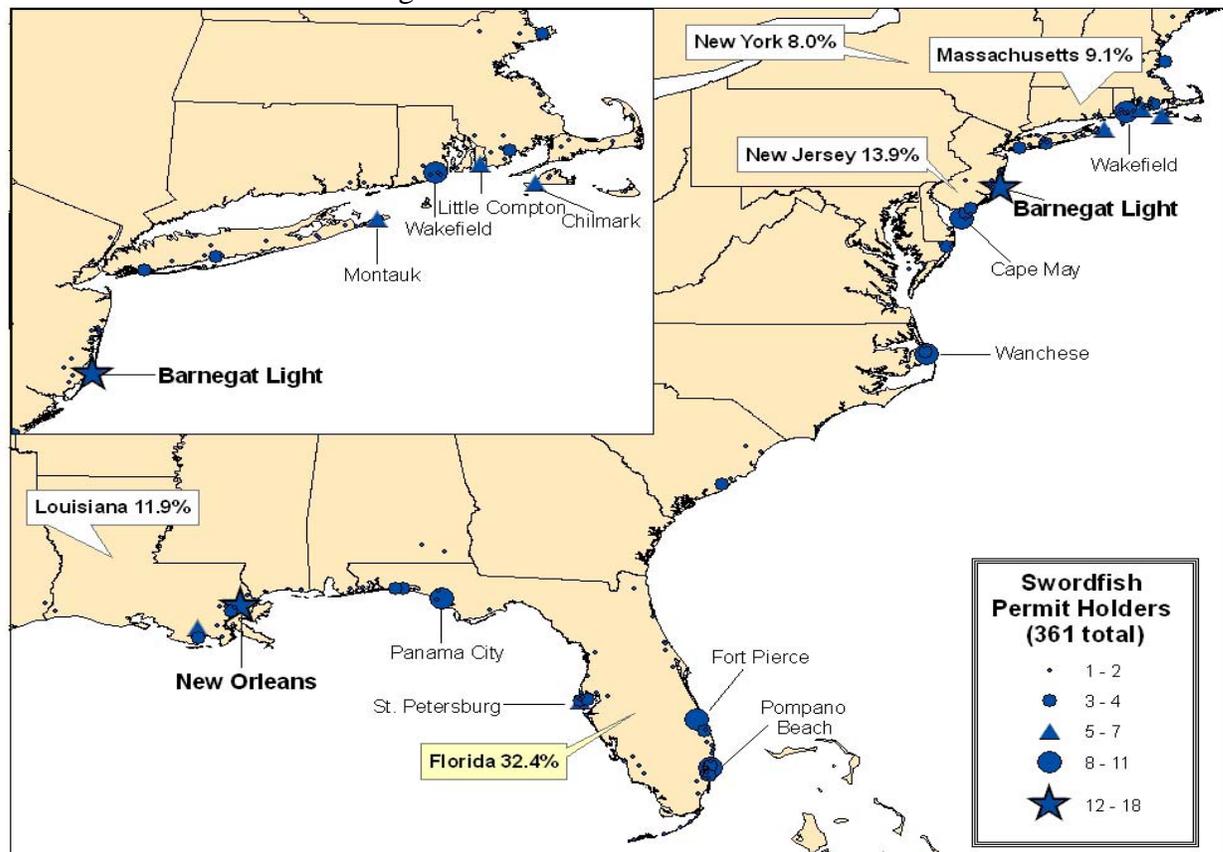
### **9.1. Introduction**

Mandates to conduct social impact assessments come from both the NEPA and the Magnuson-Stevens Act. NEPA requires federal agencies to consider the interactions of natural and human environments by using a “systematic, interdisciplinary approach, which would ensure the integrated use of the natural and social sciences...in planning and decision-making” (§102(2)(A)). Moreover, agencies need to address the aesthetic, historic, cultural, economic, social, or health effects, which may be direct, indirect, or cumulative. Consideration of social impacts is a growing concern as fisheries experience increased participation and/or declines in stocks. With an increasing need for management action, the consequences of these actions need to be examined in order to mitigate the negative impacts experienced by the populations concerned.

Social impacts are generally the consequences to human populations that follow from some type of public or private action. They may include alterations to the ways people live, work or play, relate to one another, and organize to meet their needs. In addition, cultural impacts, which may involve changes in values and beliefs that affect people’s way of identifying themselves within their occupation, communities, and society in general, are included under this interpretation. Social impacts analyses help determine the consequences of policy action in advance by comparing the status quo with the projected impacts. Although public hearings and scoping meetings provide input from those concerned with a particular action, they do not constitute a full overview of the affected constituents.

NMFS does not anticipate that the selected alternatives will result in significant social impacts. In fact, there could likely be some positive social impacts as a result of potentially increasing incidental trip limits for swordfish and relaxing upgrading restrictions for certain HMS limited access vessels under the alternatives. In general, a minor increase in swordfish fishing effort and, possibly, boat building activity could result and have positive impacts on some communities. Thus, this regulation would comply with the National Standards of the Magnuson-Stevens Act.

Figure 15 and Table 14 shows the top five states that have the highest number of directed and/or incidental swordfish permit holders (Florida, New Jersey, Louisiana, Massachusetts and New York). These would likely be the states that may most benefit from the proposed swordfish revitalization alternatives. However, if there were any negative social impacts associated with this rulemaking, they would also most likely occur in communities with high numbers of recreational anglers targeting swordfish, since increased commercial swordfish harvesting could impact recreational fishing. The East Coast of Florida is one of the regions that would be sensitive to any potential impacts on the recreational swordfish sector. It is possible that modifying upgrading restrictions for PLL vessels may allow PLL vessels to fish further offshore, and thereby relieve some commercial fishing effort in nearshore areas.



**Figure 15. Location of the Swordfish Permit Holders as of February 2006 and the percentage of swordfish permit holders for the top five states** Source: NMFS Southeast Regional Office Permits Database.

**Table 14. Number and Percentage of Commercial Swordfish Permit Holders by State as of February 2006.**

<b>Swordfish Permits</b>		
<b>State</b>	<b>Total</b>	<b>%</b>
Florida	117	32.4%
New Jersey	50	13.9%
Louisiana	43	11.9%
Massachusetts	33	9.1%
New York	29	8.0%
Rhode Island	27	7.5%
North Carolina	20	5.5%
Maryland	7	1.9%
South Carolina	7	1.9%
Texas	7	1.9%
Virginia	5	1.4%
Maine	4	1.1%
Alabama	3	0.8%
California	2	0.6%
Connecticut	2	0.6%
Mississippi	2	0.6%
Delaware	1	0.3%
New Hampshire	1	0.3%
Virgin Islands	1	0.3%
<b>Grand Total</b>	<b>361</b>	<b>100%</b>

## **9.2. State and Community Profiles**

Section 9.4 of the Consolidated HMS FMP provides a comprehensive summary of the states and communities that participate in HMS fisheries and are affected by HMS regulations.

## **10.0 OTHER CONSIDERATIONS**

### **10.1. National Standards**

The analyses in this document are consistent with the National Standards (NS) set forth in the 50 CFR part 600 regulations.

According to the latest stock assessment, North Atlantic swordfish are nearly rebuilt. This final rule is consistent with NS 1, in that it would continue to prevent overfishing of swordfish in the Atlantic Ocean and is expected to result in domestic landings that do not exceed the ICCAT recommended U.S. swordfish quota. Because the alternatives are based on the results of the 2006 ICCAT SCRS stock assessment, the alternatives considered are based on the best scientific information available (NS 2), including self-reported, observer, and stock assessment data which provide for the management of the

species throughout its ranges (NS 3). The alternatives do not discriminate against fishermen in any state (NS 4), nor do they alter the efficiency in utilizing the resource (NS 5). With regard to NS 6, the alternatives take into account any variations that may occur in the fishery and the fishery resources. Additionally, NMFS considered the costs and benefits of these management measures, both in terms of economic and social impacts, under NS 7 and 8 in sections 6, 7, 8, and 9 of this document. The preferred management measures would ensure that bycatch is accounted for in the Atlantic swordfish fisheries, and that NMFS has considered the impact of this action on protected species (NS 9). Finally, this final rule will not require fishermen to fish in an unsafe manner but, rather, is expected to improve safety at sea (NS 10).

### **10.2. Paperwork Reduction Act**

This action does not contain any new collection-of-information requirements for purposes of the Paperwork Reduction Act.

### **10.3. Federalism**

This action does not contain regulatory provisions with federalism implications sufficient to warrant preparation of a Federalism Assessment under E.O. 13132.

## **11.0 LIST OF PREPARERS**

A team of individuals prepared this document from the Highly Migratory Species Management Division, Office of Sustainable Fisheries (F/SF1), NMFS, including

Richard A. Pearson, M.A., Fishery Management Specialist  
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Margo Schultze-Haugen, M.S., Chief, HMS Management Division

Individuals in other offices within NOAA contributed, including the Office of General Counsel.

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

Discussions pertinent to the formulation of the proposed actions involved input from a variety of scientific and constituent interest groups including the U.S. delegation to ICCAT (including commercial and recreational fishermen, and environmental advocates), ICCAT's SCRS, ICCAT (35 member states), staff from the International Fisheries Division of NMFS, and the NOAA's General Counsel for Fisheries.

### 13.0 REFERENCES

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- NMFS. 1999. Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks. U.S. Department of Commerce, National Oceanographic and Atmospheric Administration, Silver Spring, MD.
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- SCRS. 2006. Report of the Standing Committee on Research and Statistics, PLE-014/2006, ICCAT SCRS, Madrid Spain, October 2 - 6, 2006.

## APPENDIX A

### **COMMENTS AND RESPONSES TO THE PROPOSED RULE AND DRAFT ENVIRONMENTAL ASSESSMENT TO MODIFY SWORDFISH MANAGEMENT MEASURES**

In response to the request for public comment on the proposed rule and Draft Environmental Assessment, NMFS received approximately 33 e-mailed comments, 17 letters submitted via mail, fax, or hand-delivery, and numerous verbal comments delivered at seven public hearings conducted during January 2007.

NMFS appreciates the thoughtful input provided by the public on this rulemaking. The comments are summarized below, along with NMFS' responses. The comments have been grouped together with other comments on a similar topic.

NMFS received a broad range of comments. They have been divided into two major categories: those relating specifically to the alternatives discussed in the proposed rule and Draft Environmental Assessment, and those relating to other potential swordfish management measures that were not included in this rulemaking. Because the Draft Environmental Assessment specifically mentions the possibility of implementing future, longer-term swordfish management measures, NMFS considers and responds to comments received on those issues beyond the direct scope of this rulemaking, but still related to swordfish management.

### **COMMENTS ON PROPOSED RULE & DRAFT ENVIRONMENTAL ASSESSMENT**

#### **Purpose and Need for Rulemaking**

Comment 1: NMFS should not change swordfish management measures. The swordfish stock has just begun to rebound. The current regulations have enabled swordfish to rebuild. The increased abundance does not justify an enlargement of the fishery, especially for the commercial sector, which nearly destroyed the swordfish fishery in the first place. Enough swordfish to supply the market are currently being harvested. Recreational fishermen can catch the occasional large swordfish. Overall, it seems that the fishery is doing well. The present swordfish population consists mostly of juveniles. These fish should be left in the water to assure that the population has a full size range. There should be a total ban on catching any swordfish at all, by any entity, or an immediate decrease in swordfish retention for all.

Response: The U.S. North Atlantic swordfish quota is derived from the recommendations of the ICCAT. The stock has shown a significant increase in abundance. In 2006, the SCRS of ICCAT concluded that the stock was at 99 percent of

Bmsy, and recommended continuing with a TAC of 14,000 mt (ww), in accordance with the current rebuilding plan. Based on this information, ICCAT adopted an overall TAC of 14,000 mt. This is the same TAC that had previously been recommended for the period from 2002 – 2006, and it is expected to provide for continued growth of the North Atlantic stock. The United States is allocated 30.49 percent of the overall TAC, which equates to 3,907 mt (ww) after deducting 1,185 mt (ww) to “other contracting parties.” The United States has not landed its North Atlantic swordfish quota allocation since 1997. In order to help retain the historic U.S. ICCAT swordfish quota allocation, NMFS believes it is appropriate to implement prudent management measures that will increase U.S. swordfish landings and foster an economically viable fishery that adheres to sound conservation principles. Accordingly, the measures in this final rule are anticipated to increase U.S. swordfish landings, but remain within the current ICCAT-recommended U.S. quota allocation. The additional landings are not projected to jeopardize stock rebuilding. In fact, some of the additional landings may previously have been discarded dead because the vessel exceeded the current Incidental swordfish retention limits. For these reasons, this action is not expected to have a significant adverse impact upon the North Atlantic swordfish stock.

Comment 2: If the U.S. swordfish fishery continues to under perform, it will be difficult for the United States to protect its quota share at ICCAT in 2008. The United States must harvest its swordfish quota share, or it will lose it. The agreed upon transfer of U.S. quota underages to other countries will allow for the development of new or larger foreign fisheries. If a precedent has been established with transferring unused swordfish quota to foreign nations that are developing their own fisheries, in the future the United States will need to defend what it has done to avoid further quota transfers or losses to other ICCAT nations that do not have the same conservation measures in place to reduce or mitigate bycatch. These countries will demand quota share based upon their newly developed swordfish fisheries. If the United States loses its swordfish quota at ICCAT, foreign pelagic longline vessels will line up in the Caribbean Straits or right outside the U.S. Exclusive Economic Zone (EEZ) and also catch billfish. Because these countries do not utilize circle hooks and careful release techniques, levels of bycatch will increase. Therefore, NMFS must retain the U.S. swordfish quota to protect other species, including blue and white marlin. Recreational and commercial swordfish fisheries, environmental groups, and NMFS will all lose if the U.S. swordfish quota share is lost or transferred. How is NMFS going to ensure that the domestic swordfish quota is filled, so that quota share is not lost?

Response: ICCAT quota allocations are not solely dependent upon recent landings. In 2001, ICCAT established its “Criteria for the Allocation of Fishing Possibilities” (ICCAT Recommendation 01-25) that included 15 separate criteria to be considered when allocating quota within the ICCAT framework. Many other factors must also be considered during negotiations to allocate quota, including conservation measures, economic importance of the fishery, geographical occurrence of the stock, compliance with ICCAT management measures, and dependence on the stocks. For many of these criteria, especially conservation measures and compliance, the United States has been a world leader among fishing nations. However, NMFS also recognizes

the relative importance that many ICCAT contracting parties place upon “historical catches” and “fishing patterns” when making quota allocations. Because of this, NMFS implements management measures to help U.S. vessels more fully harvest the U.S. swordfish quota, especially since the stock is almost fully rebuilt. It would not be beneficial to risk losing any portion of the U.S. swordfish quota, for a variety of reasons, including those mentioned in this comment. While the Agency cannot ensure that the domestic swordfish quota will be fully harvested, it will consider future management actions, as appropriate, that are consistent with other federal law and may provide additional opportunities to harvest swordfish.

Comment 3: It doesn’t make sense to promote the killing of more swordfish in U.S. waters so that we won’t have to give away U.S. quota to other countries. Why not stop ICCAT from allocating part of the U.S quota to the other countries?

Response: As discussed in the response to Comment 1, the U.S. swordfish quota allocation is derived from international negotiations conducted at ICCAT. Because of this, the United States cannot be assured of its future quota allocation. Therefore, NMFS believes it is appropriate, at this time, to implement swordfish management measures that address persistent swordfish quota underharvests to better ensure that the United States retains an influential role in future ICCAT swordfish quota discussions and negotiations. As the North Atlantic swordfish stock is almost fully rebuilt, and overfishing is not occurring, the additional domestic fishing effort anticipated from this rulemaking should not result in overfishing.

Comment 4: The only way that the United States can set an international example regarding how to appropriately manage fisheries is to have its fishermen making money. It is not only about preserving fish and saving sea turtles. These two goals, a profitable fleet and sustainable fisheries, must be linked in order to convince other countries to change their fishing methods. Otherwise, foreign fishing nations will keep doing whatever it takes to maximize their landings.

Response: NMFS believes that a well-managed, sustainable swordfish fishery can be profitable as well. These final regulations are an initial step towards improving the financial stability of the U.S. swordfish fleet, while assuring that swordfish remain at acceptable biomass levels, and bycatch rates and bycatch mortality do not increase. Additional measures may be considered in the future to increase swordfish landings. In achieving these two goals, a sustainable and profitable fishery, NMFS believes that other ICCAT nations throughout the Atlantic Basin might be encouraged to adopt much-needed conservation measures similar to those required of American vessels. These include regulations regarding bycatch reduction techniques, and implementation of effective fishery monitoring, reporting, and recordkeeping capabilities. For species that traverse international boundaries, such as HMS, NMFS believes that it is essential to achieve broad consensus and cooperation on matters of conservation.

Comment 5: NMFS’ mismanagement of the swordfish fishery is the problem, not the fishermen. If NMFS had not driven all of the longliners out of the Straits of Florida

while stocks were at 96 percent of Bmsy, the United States would be meeting its swordfish allocation instead of allowing so many imports from other countries. Many vessels are now out of business. I do not believe that the United States is committed to revitalizing its historical swordfish fishery. NMFS should have looked at swordfish landings seven years ago. The Agency would have seen that the United States was not catching its quota, and tried to revitalize the fishery then. If NMFS wants more young people to get into fishing, the United States needs to allow people to catch the swordfish quota and to maintain the swordfish quota in the future.

Response: The East Florida Coast, DeSoto Canyon, and Charleston Bump PLL closed areas were originally implemented from November 2000 – March 2001. At that time, the North Atlantic swordfish stock assessment (SCRS 1999) indicated that the stock was overfished, and at 65 percent of the biomass necessary to achieve Bmsy. In addition, overfishing was occurring ( $F_{1998}/F_{msy} = 1.34$ ). In 2000, the United States did not land its entire ICCAT swordfish quota allocation. The United States had an allocation of 2,951 mt (ww), and reported landings were 2,684 mt (ww) in 2000. Because swordfish were overfished and overfishing was occurring in 2000, NMFS reduced the bycatch of undersized swordfish and other species by closing to PLL gear certain important areas of the ocean with unique biological characteristics. Since the implementation of those PLL time/area closures in 2000 - 2001, the North Atlantic swordfish stock has substantially increased in abundance, and it is now almost fully rebuilt and overfishing is not occurring. This is a significant achievement. The result, in recent years, has been a larger overall TAC recommendation from ICCAT and a correspondingly larger U.S. swordfish quota allocation. During that same time period, however, the number of active PLL vessels has continued to decline. Because the swordfish stock has shown a significant increase in biomass, the Agency now believes it is appropriate to reconsider existing swordfish management measures and take additional steps to more fully utilize this important natural resource. Revitalizing the U.S. swordfish fishery, while ensuring that the biomass remains at sustainable levels, will provide opportunities for future generations of Americans to participate in this fishery.

Comment 6: NMFS should take a conservative approach in its attempt to more fully harvest the U.S. swordfish quota. The current size structure of the swordfish stock may not accurately reflect the stock's structure before it was severely overfished. Although swordfish abundance has increased, many of the fish are still juveniles. If swordfish harvests are unabated, it could cause irreparable harm to the stock. The preferred alternatives appear to make modest strides to more fully harvest the swordfish quota, apparently without fully reaching or exceeding it.

Response: NMFS has taken a conservative approach in relieving some swordfish management measures to begin fishery revitalization efforts, while ensuring that swordfish overfishing does not occur and that bycatch of undersized swordfish, protected species and non-target species is minimized, to the extent practicable. However, it will be necessary to continue to monitor catches and landings to ensure that these objectives are met. Additional management measures may be considered in the future, as appropriate.

Comment 7: We support the preferred alternatives and commend NMFS for moving forward and trying to provide more opportunities in this healthy fishery for both commercial and recreational interests. The Agency's ability to publish the proposed rule prior to the November 2006 ICCAT meeting is appreciated. Although there are numerous concerns with the rule itself, it has shown the international community that the United States still has a valid stake in the swordfish fishery, and that revitalization is real and tangible.

Response: NMFS recognized that it was imperative to demonstrate to ICCAT that the United States is committed to revitalizing its historical swordfish fishery, especially because the stock is now almost fully rebuilt. Importantly, the United States was successful in maintaining its swordfish quota share through 2008. U.S. fishermen have contributed to swordfish stock rebuilding, and should realize some benefit from it. Further action will be considered, consistent with the requirements of the Magnuson-Stevens Act, ATCA, the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), and other Federal regulations, to revitalize this important domestic fishery.

Comment 8: The proposed measures fall far short of what is needed to save this national resource. I recognize that the proposed rule only includes less controversial solutions that can be implemented relatively quickly, but there will still be a significant underharvest of the U.S swordfish quota. This poses a problem because there is a limited amount of time available to show that revitalization of the fishery is underway.

Response: The final management measures are not likely, by themselves, to result in full utilization of the U.S. swordfish quota. Other measures may be considered in the future to provide additional opportunities to increase U.S. swordfish landings.

Comment 9: The purpose of the proposed rulemaking was to revitalize the swordfish fishery, not redistribute the U.S. longline quota to recreational interests. NMFS should develop additional alternatives that will allow the commercial swordfish fishery to harvest more of the U.S. quota. The proposed alternatives are skewed to the advantage of the recreational and for-hire sectors. Because swordfish are almost fully rebuilt, it is a valuable opportunity for the U.S. food service sector. The proposed alternatives will not substantially increase the amount of product available to the seafood consuming public, or effectively increase the commercial swordfish harvest.

Response: The overall U.S. North Atlantic swordfish quota is harvested by both commercial and recreational fisheries. Landings from both of these sectors are reported to ICCAT. Because the objective of this rulemaking is to increase overall U.S. swordfish landings, NMFS believes that the final management measures affecting both sectors are appropriate. The final rule does not redistribute U.S. longline quota to recreational fishing interests. Recreational and Incidental swordfish landings are currently allocated 300 mt (ww) of North Atlantic swordfish, within the overall U.S. quota. NMFS is not changing this allocation. In fact, projections contained within the Draft Environmental

Assessment clearly indicated that the final measures are not likely to result in landings that would exceed the 300 mt (ww) Incidental quota. It is also important to note that commercial vessels with Directed swordfish permits are not currently governed by any retention limits, unlike recreational vessels. Furthermore, the selected vessel upgrading provisions will benefit the commercial sector exclusively. For these reasons, NMFS believes that the final management measures are appropriately balanced, and are not skewed to favor any particular sector. The rebuilt swordfish stock represents an opportunity to increase the amount of product available to the seafood consuming public. Increasing the Incidental swordfish retention limit and relieving some vessel upgrading restrictions are viable short-term ways to increase commercial swordfish harvests, while reinvestigating swordfish marketing channels.

### **No Action Alternatives (1a and 2a)**

Comment 10: I strongly oppose any changes to the current swordfish regulations so that swordfish can continue to rebuild. Therefore, I support the status quo alternatives and am opposed to all of the preferred alternatives. NMFS must conserve fish, and let the current regulations strengthen the swordfish population. Give the fish a break and rejoice in the resurrection of a magnificent fish species, which NMFS had previously allowed to go nearly extinct. The current regulations are not broken, so NMFS should not make any regulatory changes.

Response: Swordfish is an important natural resource that provides food to American consumers, and economic and social benefits to commercial and recreational fishery participants. Among other requirements, the Magnuson-Stevens Act specifies that NMFS shall provide a “reasonable opportunity” for U.S. vessels to harvest HMS quotas that are managed under international agreements, such as ICCAT. As discussed in the response to Comment 1, the management measures contained in this final rule will provide for a modest increase in swordfish landings, without jeopardizing stock rebuilding efforts.

Comment 11: Reasonable efforts to fully utilize the domestic swordfish quota are appropriate. It is vital that our commercial and recreational fishermen are given the opportunity to benefit from the successful rebuilding of the North Atlantic swordfish stock. NMFS should take responsible measures in an attempt to catch the U.S. swordfish quota, but not at the expense of billfish and the continuing recovery of swordfish. Therefore, NMFS cannot abandon its responsibility to protect juvenile swordfish, their nursery areas and critical spawning zones or other seriously overfished species, such as Atlantic marlin and bluefin tuna. NMFS should rebuild swordfish by ensuring that there is a spawning stock, and that the fishery is sustainable. Fishermen have to make a living, but it has taken 10 years to rebuild the stock. Do not let the pendulum swing the other way again to an overfished status.

Response: The final management measures were selected to provide additional opportunities for commercial and recreational fishermen to land swordfish, while ensuring that the bycatch of undersized, protected, and non-target species remain at

acceptable levels. NMFS is required under several federal statutes, including the Magnuson-Stevens Act, ESA, NEPA, and ATCA, to minimize bycatch and bycatch mortality to the extent practicable, prevent overfishing, achieve optimum yield, provide for sustained participation of fishing communities, protect threatened and endangered species, and analyze the environmental impacts of potential fishery management actions. NMFS will continue to comply with all applicable legal requirements as it continues to investigate methods to revitalize the domestic swordfish fishery, so that U.S. swordfish quota share is retained.

### **Alternatives for Incidental Swordfish Retention Limits (1a – 1d)**

Comment 12: Is it really necessary for NMFS to increase Incidental swordfish retention limits? The fishery is just recovering from being overfished. I propose that recreational anglers release all swordfish, and that commercial fishermen remain at their current limits (non-preferred alternative 1a) for the next five years to give the fishery a chance to more fully recover. There is no reason to increase the retention limits, no matter what category.

Response: Swordfish are almost fully rebuilt. As discussed in the response to Comment 1, the North Atlantic swordfish stock was at 99 percent of the biomass necessary to achieve  $B_{msy}$  in 2006. Therefore, at this time, NMFS believes it is not necessary to lower the recreational retention limit. Rather, this final rule will increase the Incidental swordfish retention limit to reduce the number of legal-sized swordfish being discarded, and to provide some economic benefit to permit holders by converting those discards into landings. Although most trips do not report a large number of discards, available logbook information shows that some trips reported as many as fifty swordfish discards. NMFS has selected final management measures that will reduce discards and allow more swordfish to be landed by Incidental swordfish permit holders, without providing an incentive for these permit holders to direct a large amount of additional fishing effort on swordfish. As such, the measures are not projected to adversely impact continued swordfish stock rebuilding.

Comment 13: I support preferred alternative 1c, which would increase Incidental swordfish retention limits. This alternative would especially help commercial fishermen in the Gulf of Mexico. It would also help to supplement income for those fishermen whose earnings have been drastically slashed by recent shark management regulations.

Response: The final management measures will increase the retention limits for vessels possessing an Incidental swordfish permit from two fish per trip to 30 fish per trip, except that permitted vessels fishing with a squid trawl will be limited to 15 swordfish per trip. These limits were selected because they may provide additional opportunities to land swordfish that might otherwise be discarded, while preventing a large increase in directed fishing effort. The 30 fish limit is just below the median number of swordfish landed by directed permit holders (36 fish). If vessels land an additional 28 swordfish, it could increase ex-vessel revenues by over \$7,000.00 per trip,

minus any additional costs, based upon the average weight and ex-vessel price for swordfish in 2005.

Comment 14: I thought “incidental” means just that, not 30 fish. NMFS should not change the commercial Incidental swordfish retention limits under preferred alternative 1c. I believe that this might turn Incidental swordfish permit holders into directed commercial fishers because of the high retention limit.

Response: The selected alternative maintains a distinction between Incidental and Directed swordfish vessels. There is no retention limit for vessels possessing a Directed swordfish permit, whereas vessels possessing an Incidental swordfish permit would be allowed to retain only 30 fish per trip, and permitted squid trawl vessels would be limited to 15 swordfish per trip. Available logbook data from 2002 – 2005 indicate that the majority of Incidental swordfish permit holders did not report landing or discarding any swordfish. However, 19 percent of the trips reported swordfish discards, with as many as 52 reported on a single trip. Increasing the Incidental limit to 30 swordfish will allow 90 percent of all swordfish discards to be converted into landings, if they are above the minimum legal size. As mentioned in the response to Comment 13, the 30 fish Incidental swordfish retention limit is just below the median number of swordfish reported kept on trips by Directed swordfish permit holders. It is possible that some Incidental permit holders may choose to deploy a directed swordfish set, perhaps seasonally. However, the new Incidental retention limit is not expected to result in a large-scale conversion to directed swordfish fishing by Incidental swordfish permit holders.

Comment 15: The proposed regulations for retention limits make good sense. NMFS wants to limit regulatory discards, but not open the door for incidental permit holders to target swordfish. Discarding dead fish is the biggest double-edge sword, and it does not make any sense to throw a dead fish away.

Response: The final management measures are intended to reduce regulatory discards without providing an incentive for Incidental swordfish permit holders to direct a large amount of fishing effort on swordfish. This is consistent with the incidental nature of the permit. It is primarily intended to allow Incidental permit holders to retain swordfish that might otherwise be discarded. The proposed 30 fish limit is just below the median number of swordfish retained by Directed permit holders.

Comment 16: Increasing recreational and Incidental swordfish retention limits will not reduce discards of undersized swordfish.

Response: Increasing recreational and Incidental swordfish retention limits will not reduce discards of undersized swordfish. NMFS cannot determine if the swordfish discards reported in the HMS logbook were attributable to exceeding the incidental retention limit, or because the swordfish were below the minimum legal size. NMFS continually strives to reduce the catch and mortality of undersized swordfish and non-target species. For example, NMFS has recently implemented a series of mandatory safe handling and release workshops for owners and operators of vessels with swordfish or

shark Incidental and Directed permits, and using longline gear or gillnets. In combination with other measures, including mandatory circle hooks on PLL gear, mandatory possession and use of careful release equipment on PLL vessels, and PLL time/area closures, NMFS has made significant progress in reducing discards and discard mortality of undersized swordfish.

Comment 17: The wording of the final regulations should be changed to restrict the increased Incidental swordfish retention limit to PLL gear and trawl gear only, and prohibit the higher retention limit in the buoy gear fishery in the East Florida Coast PLL closed area. The Incidental swordfish retention limit must remain at two fish, unless the permit is only to be used outside of the PLL closed areas. The area off the east coast of Florida is currently well balanced between commercial and recreational interests. Increasing Incidental swordfish retention limits could cause an increase in buoy gear sets in the East Florida Coast Closed Area off the Dade, Broward, and Palm Beach County Coasts. This would cause major conflicts with the vast recreational fleet in the Florida Straits, and undue stress on the recovering swordfish stock that consists mostly of immature fish that have not reached their full spawning potential.

Response: HMS regulations at § 635.71(e)(10) state that swordfish may not be caught, possessed, retained, or landed using buoy gear, unless the vessel owner has been issued a swordfish Directed or Handgear permit. In other words, Incidental swordfish permit holders are not authorized to fish for swordfish with buoy gear. For this reason, increasing the Incidental swordfish retention limit will not provide an incentive for fishermen to enter the buoy gear fishery in any area. Also, Incidental or Directed swordfish permit holders may not retain swordfish unless their vessel also possesses both a limited access shark permit and an Atlantic Tunas Longline category permit.

Comment 18: NMFS is requested to consider increasing the Incidental swordfish retention limit for squid vessels to 20 fish. Also, a higher limit might be needed for squid freezer vessels that stay at sea for longer periods of time. Seventy-seven vessels hold Illex squid moratorium permits. Approximately 25 of these vessels actively fish for Illex squid in any single year, and 10 are freezer vessels that take trips lasting from seven to ten days. The remaining vessels utilize refrigerated seawater and stay at sea for three to four days. Because all existing regulations for maintaining swordfish as an incidental catch in the squid trawl fisheries would apply, no directed fishery is possible or encouraged.

Response: The final management measures will increase the retention limit for Incidental swordfish permit holders that deploy squid trawls from five to 15 swordfish per trip. This increase will enable squid trawl vessels to retain fish that otherwise may have been discarded. Squid trawl vessels fish for, and land, small pelagic species such as squid, mackerel and butterfish. Swordfish catches should remain truly incidental to catches of these target species. However, NMFS welcomes additional input or comments from the squid trawl sector for future consideration.

Comment 19: Increasing the retention limit for 48 Incidental swordfish permit holders will not make much of a difference, in terms of catching more of the swordfish quota. NMFS' projected swordfish landings are wrong. Incidental permit holders will not catch that many fish. NMFS has shown a wide range in the number of swordfish that could potentially be landed by increasing the Incidental swordfish limit. Why is there such a wide range? How did NMFS estimate the additional swordfish that will be landed? How many active Incidental swordfish permit holders are there? How many squid trawl vessels? Would the U.S. reach its quota before reaching the maximum number that could potentially be landed? Is it appropriate to project that each one of the boats is going to keep 30 fish? Only a small number of PLL boats are still in business, as two-thirds of the fleet is gone. The projections that NMFS has shown are confusing. NMFS should provide more detail on these numbers, so that they make sense.

Response: The projected swordfish landings in the Draft Environmental Assessment are necessarily based upon certain assumptions. However, until final landings data are available after implementation of the new swordfish retention limits, it is not possible to determine whether these projections are accurate. In 2005, 10,787 lb (dw) of swordfish were reported landed by Incidental swordfish permit holders in the HMS logbook. Swordfish landings by squid trawl vessels, as reported to ICCAT, averaged 10,443 lb dressed weight (dw) per year from 1998 - 2004. Because all squid trawl landings may not have been reported in the HMS logbook, these landings were added together with the other Incidental landings to derive an estimate of 21,230 lb (dw) of swordfish landed by Incidental permit holders in 2005. NMFS then presented a range of projected landings to reflect uncertainties regarding future fishing activity. At one end of the range, NMFS assumed that all reported discards by Incidental swordfish permit holders would be landed, up to 30 fish. Therefore, if a vessel reported landing two swordfish and discarding five swordfish, a total of seven swordfish were assumed to be landed. Also, squid trawl landings in 2005 were tripled, reflecting the tripling of the squid limit from five fish to 15 fish. This methodology resulted in a projected estimate of 66,207 lb. At the other end of the range, NMFS assumed that all reported trips by Incidental swordfish permit holders would land 30 fish. Therefore, if an Incidental swordfish permit holder reported landing one swordfish in 2005, it was assumed that 30 fish would be landed under the new limits. Again, squid trawl landings were also tripled. This methodology resulted in a projected estimate of 476,444 lb. A similar methodology was used for the recreational retention limits where, at one end of the range, it was assumed that only trips that had previously landed the retention limit (three fish) would also land the new retention limit (four fish or 15 fish). At the other end of the range, it was assumed that all recreational trips would land the new retention limits. NMFS believes that actual landings will likely fall somewhere between the lower and higher end of these ranges.

Comment 20: Putting more swordfish on the market by increasing the Incidental retention limit will reduce the price that Directed swordfish permit holders receive. This is a bad economic decision.

Response: NMFS recognizes that an increase in the volume of incidentally caught swordfish could affect swordfish prices. However, some constituents have told NMFS that the current 2-fish Incidental retention limit does not justify the additional effort of fishing for, or landing, swordfish, and then bringing them to market. These constituents stated that the current two-fish Incidental retention limit has contributed to an inadequate infrastructure and marketing channel in some areas that is not suitable for handling swordfish. NMFS believes that the 30-fish retention limit will provide more of an incentive to land and market incidentally caught swordfish, without a significant disruption to swordfish prices. Increased participation by incidental permit holders could help to develop a more consistent supply of swordfish, and thus lead to a more robust market for swordfish products.

### **Alternatives for HMS Charter/Headboat and Angling Category Swordfish Retention Limits (1e – 1f)**

Comment 21: NMFS received several comments concerning preferred alternatives 1e and 1f, which would increase the per vessel recreational swordfish retention limits. These comments include: The current recreational swordfish retention limit is already very generous for "personal" use, and increasing it would promote commercial harvest by "recreational" anglers. Recreational permit holders are currently keeping one swordfish, and illegally selling the others to a restaurant or a market buyer. Under the preferred alternatives, these illegal recreational swordfish sales would continue to grow; there is no reason to increase "recreational" retention limits if the rampant illegal sale of recreational swordfish cannot be controlled. It is necessary to strike a balance when setting recreational limits between fulfilling the recreational "experience" and encouraging the development of a quasi-commercial activity; the preferred alternatives to increase recreational vessel limits will hurt the prices that commercial fishermen receive for their swordfish. These swordfish will be sold and compete in the market with commercially landed fish.

Response: The Agency received many comments regarding the illegal sale of recreationally caught swordfish. The current regulations explicitly prohibit the sale of swordfish by HMS Angling category permit holders. The sale of swordfish by HMS CHB permit holders is also prohibited, unless the vessel owner concurrently possesses a limited access swordfish Handgear permit. Furthermore, anyone who buys Atlantic swordfish from a U.S. vessel must have a Federal Atlantic Swordfish Dealer permit, and must report all purchases to NMFS. All non-tournament swordfish landings by Angling and CHB permit holders must be reported by calling (800) 894-5528. For recreational swordfish reporting information in Maryland, contact (410) 213-1531. In North Carolina, contact (800) 338-7804. Tournament directors, if selected, must report tournament landings. NMFS does not anticipate that increasing the recreational retention limit will increase illegal recreational sales because the recreational sale of all swordfish is clearly prohibited. However, citizens with information regarding the illegal sale of recreationally caught swordfish are encouraged to call the anonymous NMFS Office of Law Enforcement tip line at (800) 853-1964 to report the incident.

Comment 22: A recreational vessel does not have enough room onboard to properly ice more than one fish. Therefore, the preferred alternatives to increase recreational swordfish retention limits could cause health problems. NMFS should reduce the recreational retention limit to one fish per boat per trip.

Response: NMFS is not reducing the recreational retention limit because it is important to provide more opportunities for fishermen to land the U.S. swordfish quota, and recreational landings are counted against the quota. The decision regarding whether or not to land a fish is often made when the animal is alongside the boat. HMS regulations currently require that all fish that are not retained must be released in a manner that will ensure the maximum probability of survival, without removing the fish from the water. If an angler decides to keep a fish, it is his or her personal responsibility to ensure that the fish is maintained properly so that it is safe to eat. Since the fish cannot be sold, the federal government has no direct role in ensuring that it is safe to eat. However, to prevent waste, NMFS strongly encourages all anglers to keep no more fish than they can safely handle.

Comment 23: Recreational fisheries can develop rapidly and can threaten the Incidental catch quota. NMFS must properly monitor and record recreational and CHB swordfish landings to control the ultimate destination of these catches. NMFS should also include criteria that would allow for the downward adjustment of recreational limits to prevent exceeding the Incidental catch quota.

Response: As indicated in the response to Comment 21, all non-tournament recreational swordfish landings by HMS Angling and CHB permit holders must be reported to NMFS, or to the states of Maryland and North Carolina as applicable. These landings are collected on a daily basis. Using historical reported recreational swordfish landings, the projections presented in the Draft Environmental Assessment indicate that increasing recreational retention limits will not result in an exceedance of the Incidental swordfish quota. However, anecdotal information suggests that recreational swordfish landings may be under reported. Reporting could increase in the future as more anglers become aware of the requirement through Agency outreach. NMFS will continue to collect recreational swordfish landings data, and will take appropriate and timely action to maintain compliance with the Incidental swordfish quota.

Comment 24: I prefer alternative 1e, which would increase CHB vessel retention limits. This alternative would assist the recreational CHB industry by increasing overall recreational swordfish landings. It would allow CHB vessels to target swordfish instead of just catching them as bycatch species on tuna, marlin, and dolphin fishing trips.

Response: The final management measures will increase the per vessel HMS CHB swordfish retention limits, based upon the number of paying passengers onboard. This could provide additional opportunities for the HMS CHB sector to market recreational swordfish fishing trips.

Comment 25: Increasing the recreational retention limits will not affect the U.S. swordfish quota, because recreational fishermen are catching swordfish and not reporting them. They believe that reporting their catches will result in them being closed out.

Response: As indicated in the response to Comment 21, all non-tournament recreational swordfish landings by HMS Angling and CHB permit holders must be reported to NMFS, or to the states of Maryland and North Carolina as applicable. These reported landings are counted against the U.S. swordfish quota. It is possible that a failure to report recreational landings could result in a potential reduction of the Incidental swordfish quota, or a reduction in the overall U.S. swordfish quota in the future.

Comment 26: We have no objections to the proposed regulations to increase the recreational retention limit to one per person, up to four per vessel, as long as NMFS is only making the change to help the U.S. reach its swordfish quota. Similarly, there is no objection to the proposed regulations to increase retention limits for CHB vessels.

Response: The purpose of this rulemaking is to implement management measures that will enable the United States to more fully harvest its ICCAT-recommended North Atlantic swordfish quota. The U.S. swordfish quota allocation includes both recreational and commercial landings. For this reason, NMFS chose to modify the regulations for both sectors in order to increase overall U.S. swordfish landings.

Comment 27: We support alternatives 1e and 1f to help the United States catch its swordfish quota. However, most recreationally caught swordfish are caught in the areas that are closed to PLL gear to protect juvenile swordfish. Therefore, we recommend an increase in the minimum size limit for all swordfish caught from within the PLL closed areas.

Response: The minimum swordfish size is established by ICCAT. However, the United States has some discretion to negotiate a higher minimum size, considering domestic requirements. NMFS may consider this in the future, if necessary.

Comment 28: Does the crew count when calculating the recreational swordfish vessel retention limit for HMS CHB vessels?

Response: No. The captain and crew do not count when calculating the swordfish vessel retention limit for HMS CHB vessels. Under the final regulations, the vessel limit is no more than one swordfish per paying passenger, up to six swordfish per vessel per trip for charter vessels; and no more than one swordfish per person, up to 15 swordfish per vessel per trip for headboat vessels. The retention limit for vessels issued an HMS Angling category permit is no more than one per person, up to four swordfish per vessel per trip.

Comment 29: In Louisiana, there are approximately four headboats, but they do not fit into the typical “headboat” category. They might fall under the headboat category

or the charter boat category. These boats have to meet their minimum day rate, and they must carry a certain amount of passengers in order to leave the dock. But, they are different from the boats in Florida where everybody shows up and pays their individual fees. These boats are usually targeting snapper and grouper on overnight trips, but they may target swordfish. They might also fish for tuna during the day, and then start fishing for swordfish at night.

Response: A charter boat means a vessel that is less than 100 gross tons (90.8 mt) that meets the requirements of the U.S. Coast Guard to carry six or fewer passengers for hire. A headboat means a vessel that holds a valid Certificate of Inspection issued by the U.S. Coast Guard to carry passengers for hire. Thus, the applicable swordfish retention limits for charter and headboat vessels are based upon the tonnage of the vessel and whether it meets the requirements to carry six or fewer passengers, or whether it possesses a valid Certificate of Inspection issued by the U.S. Coast Guard to carry passengers for hire.

### **Alternatives to Modify HMS Limited Access Vessel Upgrading Restrictions (2a – 2e)**

Comment 30: NMFS should consider an alternative to remove gross registered tonnage (GRT) and net tonnage (NT) restrictions for simplification of vessel construction or conversion.

Response: Length overall (LOA), GRT, and NT are all measurements of a vessel's size and capacity. During the initial development of the limited access permit regulations, NMFS established an upper limit on fishing effort by restricting both the number of permitted vessels, and restricting upgrades in the size and capacity of those vessels. The purpose was to maintain overall fleet capacity at a relatively constant level. This was intended to improve the effectiveness of other management measures by preventing a sudden increase in fleet capacity and fishing effort when stocks first began to rebuild. Vessel tonnage was linked with vessel length to prevent vessels from increasing in beam while complying with other restrictions on length. However, since then, the fishing and boat building industries have informed NMFS that it is sometimes difficult to increase a vessel's length proportionately with its tonnage. Also, it has been brought to the Agency's attention that restrictions on net tonnage may significantly hamper interior modifications to vessels, such as reconfiguring the engine room, which may have little impact on the vessel's capacity. Finally, some fishermen have indicated that restrictive retention limits nullify the need to restrict vessel capacity (GRT and NT). NMFS is aware of these concerns and may consider further modifications to the vessel upgrading restrictions in the future. In this final rule, the 35 percent allowance is expected to provide additional flexibility for owners to upgrade their vessels, whether through construction, conversion, or permit transfer.

Comment 31: I support no action alternative 2a for the upgrading restrictions. Vessel capacity is adequate. Bigger vessels are not needed to harvest swordfish in the Gulf of Mexico. By lifting the upgrading restrictions, NMFS is catering to people who are trying to go to the Grand Banks. Lifting or modifying the upgrading restrictions

would only benefit larger swordfish boats that currently catch most of the swordfish. I do not want Atlantic fishermen upgrading their vessels and then moving to the Gulf of Mexico to fish for swordfish.

Response: The final management measures will modify the vessel upgrading criteria for all vessels that concurrently possess Incidental or Directed swordfish and shark permits, and an Atlantic Tunas Longline category permit. This will benefit all commercial vessels that concurrently possess these three permits, not just larger vessels. Vessel owners are not required to upgrade. The revised upgrading criteria will improve the flexibility of vessel owners to make individual business decisions based upon their own unique circumstances. Overall, some vessels may not be optimally configured for current market conditions, and therefore profits may be less than optimal. Without some modification to the current upgrading restrictions, these vessels (primarily PLL vessels) would continue to be limited in their ability to modernize, thus affecting the ability to retain skilled crew, carry observers, and fish further offshore. In addition, limitations on vessel capacity may affect safety at sea because, in general, a larger vessel is more seaworthy than a smaller vessel, especially in rough seas. NMFS cannot accurately predict where newly upgraded vessels will fish, but it is important to provide some additional flexibility to improve their mobility. It is possible that some vessels could move out of the Gulf of Mexico to fish, rather than move into it.

Comment 32: I support no action alternative 2a for the vessel upgrading restrictions. The United States is not failing to catch its swordfish quota because of the size of the vessels. The current fleet capacity can harvest the quota if the boats are provided with more opportunities to fish.

Response: Vessel capacity is one factor, among several, that is potentially preventing the U.S. fleet from landing its full North Atlantic swordfish quota. NMFS believes that allowing for an increase in vessel size and horsepower (HP), will provide more opportunities to increase domestic swordfish catches. For example, increased vessel capacity and HP could allow some operators to fish further offshore, fish longer without offloading, and reduce the time spent transiting to and from fishing grounds.

Comment 33: As a swordfish Handgear permit holder, I am opposed to lifting the upgrading restrictions on handgear vessels (non-preferred alternative 2c). I feel that making numerous permits available would cause far too many buoy gear conflicts with the vast recreational fleet in the Florida Straits.

Response: In the final rule, NMFS is not removing or modifying upgrading restrictions for vessels issued limited access swordfish Handgear permits. Also, NMFS is not making any new commercial swordfish permits available, because they are all limited access. However, upgrading restrictions are being modified specifically for vessels that concurrently possess limited access Atlantic Tunas Longline permits, as well as Directed or Incidental swordfish and shark permits. Most of these vessels fish with PLL gear. HMS regulations also allow vessels with a Directed swordfish permit to fish with buoy gear in the PLL closed areas, if PLL gear is not onboard. Because many vessels that

might fish with buoy gear have very high horsepower, several commenters have indicated that the current HP restriction is a limiting factor that prevents many fishermen from obtaining a Directed swordfish permit, along with the other two necessary permits, and deploying buoy gear. Therefore, by removing the HP upgrading restriction for Directed swordfish vessels, buoy gear fishing activity could increase. As described in greater detail in the response to Comment 40, NMFS currently believes that the buoy gear fishery is adequately regulated through limits on the number of buoys that may legally be deployed, gear monitoring and marking requirements, limits on the number of hooks that may be attached, logbook reporting requirements, and other general commercial fishing regulations. NMFS is aware of the concerns expressed regarding buoy gear, and may implement additional regulations on the buoy gear fishery in the future, if necessary.

Comment 34: NMFS received several comments in favor of increasing allowable vessel upgrades, or removing the upgrading restrictions altogether (non-preferred alternative 2d). These comments include: I support immediately taking off the restrictions on vessel size for all vessels possessing HMS limited access permits. If the number of permits is limited, then why manage the size of the boat too? It is not the government's business regarding the size of the engine that I have on my boat. The government has put enough restrictions on fishermen; in the Pacific PLL fleet all vessels can go up to 100 feet in length, so NMFS should consider this as an alternative; limiting the size of fishing vessels is a problem. Most current swordfish vessels are from 40 to 50 feet in length. Allowing these vessels to be upgraded by 35 percent to 65-foot vessels under preferred alternative 2e makes no sense, because 65-foot vessels have become unprofitable. No new 65-foot vessels have been built in years.

Response: One of the goals of this rulemaking was to develop and implement management measures that would facilitate, in the short term, the ability of U.S. vessels to harvest the ICCAT-recommended domestic swordfish quota. Thus, the Agency preferred, and ultimately selected, alternatives that would meet these goals, and that were projected to have comparatively minor environmental impacts. Non-selected alternative 2d would have removed all HMS limited access vessel upgrading and permit transfer upgrading restrictions for ten years. This alternative was not selected because it was projected to result in the most adverse ecological impacts. The universe of affected vessels is substantially larger under alternative 2d, and there would be no limit on the size to which HMS limited access vessels could be upgraded. The final management measures will allow some owners to upgrade their vessels by 35 percent in size (relative to the baseline specifications of the vessel initially issued the limited access permit), with no limits on HP. This would allow, for example, an "average" 55-foot baseline vessel to be upgraded to a 74-foot vessel with unlimited HP. NMFS believes that this is a meaningful increase in vessel size, but overall fleet capacity will remain within acceptable limits. It provides vessel owners with more flexibility to make business decisions based upon their own individual needs. NMFS selected this alternative because there will likely be fewer adverse ecological impacts compared to the other alternatives. The North Atlantic swordfish stock is still rebuilding. Also, several species caught as bycatch in the PLL fishery are currently overfished, or protected under the ESA. The final management measures may increase overall fleet capacity, but not to extent that

overfishing will occur or bycatch will substantially increase. As additional data become available regarding, among other things, swordfish stock status, sea turtle interactions, levels of bycatch, and the effectiveness of circle hooks and careful handling and release techniques, NMFS may reexamine the HMS limited access vessel upgrading restrictions to determine if additional modifications are warranted.

Comment 35: Which vessels are eligible for the upgrade under preferred alternative 2e? Do they have to fish with PLL gear or just have the permits that would enable them to fish with PLL gear?

Response: In order to be eligible for the 35-percent vessel upgrade in LOA, GRT, and NT, with no restrictions on HP, a vessel must concurrently possess, or be eligible for the renewal of, the following three permits 30 days from the effective date of this final rule: Directed or Incidental swordfish and shark permits, and an Atlantic Tunas Longline category permit. Completed applications for permit transfers, so that a vessel concurrently possesses the three necessary permits to be eligible for the 35 percent upgrade, must be received by NMFS no later than 30 days from the effective date of this final rule.

Comment 36: The swordfish industry stagnated and died because it could not build large freezer vessels just when they were needed to meet world market demand. NMFS must find a method to allow larger vessels to economically enter the fleet, such as foreign vessels or large shrimp boats. The U.S. fleet needs much larger vessels to travel further and to utilize onboard freezers.

Response: As indicated in the response to Comment 34, NMFS considered an alternative that would have removed all upgrading restrictions on all vessels possessing HMS limited access permits. However, this alternative was not selected because it was determined to have the most severe adverse environmental impacts. As the frozen seafood market has grown substantially in recent years, NMFS may consider the concept of domestic freezer vessels in the future, if appropriate. Currently about 38 vessels are greater than 70 feet in length, and possess Directed swordfish permits. Under the final management measures, these existing vessels could be upgraded, either through conversion or permit transfer, to 94 feet or more, depending upon the size of the baseline vessel, for use as a freezer vessel 30 days from the effective date of the final regulations. In the longer term, it may be necessary for NMFS to further analyze the potential impacts associated with a swordfish freezer fleet to determine an appropriate number of vessels, permit qualification criteria, environmental impacts, and other items. Under the Magnuson-Stevens Act, no foreign vessels are allowed to fish within the U.S. EEZ, unless that portion of the optimum yield that would be caught by those vessels cannot be harvested by U.S. vessels.

Comment 37: The last U.S. PLL boat was built in 1994. There is no money for the owners of PLL vessels to upgrade their boats. If you want to revitalize the industry, then upgrading is not the way to do it because the remaining fishermen cannot afford it.

Response: Several constituents identified the current vessel upgrading restrictions as one factor, among several, limiting the ability of U.S. vessels to fully harvest the U.S. swordfish quota. Vessel owners are not required to upgrade. The option to upgrade could improve the flexibility of some vessel owners to make individual business decisions, based upon their own unique circumstances.

Comment 38: I support removing HP restrictions on PLL vessels in preferred alternative 2e. Speed is important when selling fresh fish, which the U.S. fleet does.

Response: Removing the HP upgrading restrictions will provide additional flexibility to modify vessels possessing, or eligible to possess, Directed or Incidental swordfish and shark permits, and Atlantic Tunas Longline category permits. These vessels usually fish with stationary PLL gear, rather than with towed gear, so HP may have a relatively minor impact on fishing effort. However, if an owner is able to increase the vessel's speed, it could reduce transit time and provide additional fishing time.

Comment 39: Removing HP upgrading restrictions in preferred alternative 2e will make little difference to PLL vessels. Most longline vessels are not going to go faster with more HP, and it will cost more in fuel. It is not possible to get some boats up on a plane to go faster, even if the HP is increased.

Response: As indicated above in Comment 38, NMFS received contrasting comments regarding the effect of removing the HP upgrading restrictions. NMFS recognizes that some vessels may not be able to travel any faster with a more powerful engine, due to the vessel's hull configuration. However, other vessels might be able to travel faster. NMFS believes that waiving the HP upgrading restrictions on vessels that concurrently possess the three necessary HMS limited access permits will provide some owners with additional flexibility to modify their vessels according to their needs, and potentially provide more fishing time.

Comment 40: We cannot support the proposed rule as written because the unlimited HP upgrade is not restricted to vessels that specifically fish with PLL gear. The Draft Environmental Assessment indicates that NMFS desired to restrict the upgrade to PLL vessels, but the proposed regulations do not reflect this intent. The limitation that currently keeps vessels from entering the buoy gear fishery is the HP limitation, and the fact that most available limited access swordfish permits do not match the typical high HP boats used in the recreational fishery off South Florida. We recommend and support limiting HP upgrades only to vessels that will fish with PLL gear. Otherwise, there could be an increase in buoy gear sets in the East Florida Coast Closed Area. If NMFS allows unlimited HP upgrades under preferred alternative 2e, those commercial swordfish permits will go to the Miami area, and not be used by vessels that fish with PLL gear. PLL boats will upgrade and use their Directed swordfish permit and upgraded boat to fish with buoy gear off the Florida East Coast, or the Directed swordfish permits will be bought by recreational fishermen in the Miami and Fort Lauderdale areas who want to become part-time commercial buoy gear fishermen. There are enough transferable permits available for those who wish to enter the buoy gear fishery with the serious intent

of making a living. NMFS should allow the upgrades, provided that the permit holder forfeits the right to fish in the closed zones if they upgrade their permit or buy a permit that they plan to upgrade. If the HP for a commercial swordfish permit were increased, the holder would waive the right to fish in the PLL closed zones. Alternatively, we recommend limiting HP upgrades to vessels that will only fish with PLL gear. Restricting the gear types on upgraded permits would not affect vessels in any other HMS fisheries. Keeping the buoy gear fishery a small fishery with controlled growth would reduce gear conflicts and allow for a sustainable fishery. The intent was for the permits to be used to make PLL boats go farther offshore and stay out longer.

Response: The intent of this final rule is to provide additional opportunities for U.S. vessels to harvest a larger portion of the ICCAT-recommended domestic swordfish quota. It is not intended solely to make PLL boats fish further offshore or for these vessels to take longer trips, although that could be a secondary benefit if additional swordfish landings occur with few additional adverse ecological impacts. The vessel upgrading restrictions are administered largely through the issuance of permits, as the allowable upgrade specifications for each vessel are printed directly on its limited access swordfish and shark permit. With the exception of the swordfish Handgear permit and some tuna permits, HMS vessel permits are currently issued by species, and not by gear. NMFS rejected an alternative to waive the upgrading restrictions on vessels possessing swordfish Handgear permits in the Draft Environmental Assessment because the upgrades would not be limited, and also to reduce buoy gear conflicts with recreational users. In this final rule, NMFS is modifying vessel size upgrading restrictions and removing HP upgrading restrictions on vessels concurrently possessing Incidental or Directed swordfish and shark permits, and an Atlantic Tunas Longline category permit. These three permits are necessary to fish for HMS with PLL gear, or to land swordfish commercially (other than with the swordfish Handgear permit). Because buoy gear is authorized only for vessels possessing either a Directed swordfish permit (along with the other two permits) or a swordfish Handgear permit, NMFS recognizes that, as a result of waiving the HP upgrading restrictions for vessels possessing a Directed swordfish permit, some current recreational fishermen may seek to obtain a Directed swordfish permit and the other two commercial permits to fish with buoy gear in the East Florida Coast PLL closed area. However, the Agency believes that the actual number of recreational fishermen choosing to pursue this commercial activity is likely to be limited, although it does warrant future monitoring. The start-up costs associated with obtaining the three commercial limited access permits and all of the required fishing and safety gear are sizeable. Furthermore, accurate recordkeeping and reporting are essential. This could potentially necessitate the formation of a corporation and a career change, if conducted on anything other than a part-time basis. Reporting forms and weighout slips must be submitted after each trip, or monthly if no fishing occurs. Additionally, vessel owners and operators must remain cognizant of, and adhere to, all commercial fishing regulations. If selected, these vessels would also be required to carry observers. In the 2006 Consolidated HMS FMP, NMFS recently authorized the use of buoy gear, and clarified its usage, by implementing several new restrictions for swordfish Directed and Handgear permit holders deploying buoy gear. These are the only permits with which buoy gear may be deployed. The new restrictions included a limit on the allowable

number of hooks per buoy gear, a limit on the number of floatation devices that may be deployed, and gear monitoring requirements. The permit and upgrading restrictions are not based upon gear type, whereas the closed areas are administered by gear type. To restrict the new vessel upgrading requirements only to Directed swordfish permit holders that do not, or will not, fish in the PLL closed areas would require permit restructuring under a separate rulemaking. As additional information regarding buoy gear becomes available through the HMS logbook and research efforts, NMFS will reevaluate the fishery and its current regulations, if necessary.

Comment 41: We support the increase in size and HP for PLL vessels in preferred alternative 2e, because it provides greater safety and range for each trip, which should provide a better opportunity to land the U.S. swordfish quota. Larger vessels fishing further from closed zones within U.S. waters should also reduce user group conflicts. However, if the increases in length and HP also result in larger drums and longer longlines on PLL vessels, restrictions should be implemented to restrict the longline length to no more than the current average length to avoid longer soak times and increased incidental catch mortality.

Response: NMFS' Draft Atlantic Pelagic Longline Take Reduction Plan (available at <http://www.nmfs.noaa.gov/pr/interactions/trt/pl-trt.htm>), which was prepared to reduce bycatch of marine mammals in the Atlantic PLL fishery, has recommended that PLL vessels establish a 20 nautical-mile upper limit on mainline length for all PLL sets within the Mid-Atlantic Bight region. NMFS is preparing a proposed rule to implement this plan.

Comment 42: Commercial fishermen are concerned that waiving the upgrading restrictions for HP will encourage additional recreational vessels to transfer commercial permits to their charter vessels and land swordfish commercially.

Response: For a charter vessel to sell swordfish commercially, the vessel owner must obtain either a swordfish Handgear permit, or three required permits (Directed or Incidental swordfish and shark permits, and an Atlantic Tunas Longline category permit). Upgrade restrictions for swordfish Handgear permits are not being modified in this final rule. If the vessel owner obtains the other three required permits, that owner cannot obtain an HMS CHB category permit, as specified in § 635.4(d)(3). For this reason, NMFS does not believe that a large number of vessel owners will relinquish their HMS CHB permit for the opportunity to sell swordfish. It would likely necessitate a substantial change in business activities, from carrying paying recreational passengers to commercial fishing. Also, as discussed in the response to Comment 40, the start-up and operating costs are likely to be sizeable. However, the Agency believes that if some current CHB fishermen choose to become commercial fishermen as a result of this final rule, overall positive benefits could result. It would assist the Agency's efforts in harvesting the ICCAT-recommended U.S. swordfish quota.

## **OTHER SWORDFISH MANAGEMENT MEASURES**

## **Pelagic Longline Closed Areas**

**Comment 43:** The current PLL closed areas are important biological areas that protect many species of juvenile fish. They should be closed to all vessels, both recreational and commercial.

**Response:** The current HMS time/area closures apply to either PLL or bottom longline (BLL) gear. The first time/area closure for HMS was implemented in 1999 off New Jersey to reduce bluefin tuna discards in the PLL fishery. Since then, additional PLL closures have been implemented in the DeSoto Canyon (2000), Florida East Coast (2001), Charleston Bump (2001), and the Northeast Distant Area (2001). The Northeast Distant time/area closure was later modified in 2004 to a Gear Restricted Area, where only large circle hooks with special bait are allowed. In 2005, NMFS implemented the Mid-Atlantic shark BLL closed area. The goals of all the HMS time/area closures are to: (1) reduce bycatch; (2) minimize the reduction in target catches; and, (3) minimize or reduce non-target HMS (*i.e.*, bluefin tuna and billfish) catch levels. There are currently no areas closed to recreational HMS fishing gears (*i.e.*, rod and reel and handline), primarily because these gears are actively tended, and have few interactions with marine mammals and protected species. However, due to the large number of recreational anglers, NMFS will continue to investigate methods to reduce post release mortality in the recreational fishery.

**Comment 44:** The primary reason that the United States is not catching its swordfish quota is because PLL vessels cannot fish in the PLL closed areas. Many PLL vessels went out of business due to the PLL time/area closures. Because the prime fishing grounds are closed, PLL vessels must fish in areas that do not produce many swordfish. The only way that the United States can increase its swordfish catch is to immediately reopen some of the PLL closed areas. Otherwise, the United States will lose some of its baseline swordfish quota by 2008. Also, swordfish catches will likely continue to decline as the few remaining PLL boats go out of business due to inadequate fishing opportunities. The commercial fishing industry is fast approaching a “point of no return.” Vessel owners will not invest in a larger vessel to continue in a business that is restricted in growth. The longer a fishery recovery program is drawn out, the faster that the fishing infrastructure will decay. There may soon be no docks left for HMS vessels to land swordfish in certain areas. NMFS should not encourage people to upgrade or buy a newer or larger boat, unless it can provide assurances that it will not regulate them out of business in the future. NMFS could open selected closed areas using intensive observer coverage. This would allow for an increase in catch while simultaneously providing important data. If any adverse trends are detected, the areas could immediately be closed. If NMFS opens some closed areas, the boats may be willing to give a percentage of their gross revenues to cover the cost of observers. To reduce bycatch, the PLL fleet has already transitioned to circle hooks, uses careful release and disentanglement gear, and is prohibited from using live bait in the Gulf of Mexico.

The commercial PLL industry requests to work with NMFS on an Exempted Fishing Permit (EFP) that would provide data on PLL gear and lead to the eventual reopening of the PLL closed areas. The first PLL time/area closure that should be

reconsidered is the area extending from the Straits of Florida up to, and including, the Charleston Bump area. This area is currently producing large volumes of high quality swordfish that average about 80 lb each. The bycatch of marine mammals and protected species in this area is low. There is also real time information available from mandatory Vessel Trip Reports and dealer reports. This information would support what appears to be a revitalized fishery when compared to landings in the same area ten years ago.

NMFS should also consider a small-scale, cooperative research program (six to seven pelagic longline vessels) in the Charleston Bump time-area closure with 18/0 circle hooks and 100 percent observer coverage to monitor catch, discards and protected species interactions. This would provide important data on the swordfish population and the impacts of circle hooks and bait restrictions that have gone into effect since the inception of the closure. There are not many small fish, sea turtles, or marine mammals in the Charleston Bump at that time of the year. There are also a limited number of directed swordfish vessels, so adverse ecological impacts would likely be minimal. Re-opening the area would allow for a short-term increase in commercially harvested swordfish on the market during the late winter and early spring.

Finally, NMFS should reopen the southern portion of the DeSoto Canyon, because more area than necessary is closed in the Gulf of Mexico. Smaller boats cannot travel farther out west to fish in the Gulf of Mexico. The northern portion of the DeSoto Canyon should remain closed because it is a nursery ground for swordfish.

In conclusion, NMFS has already implemented many bycatch mitigation measures for PLL vessels, based on the NED experimental fishery. Another experimental fishery in the current PLL time-area closures would provide additional important information. Re-opening portions of the PLL closed areas is essential to fully harvest the U.S. swordfish quota.

Response: The current time/area closures were implemented for specific management objectives. NMFS may modify the existing closures, as appropriate, to allow utilization of a given fishery, consistent with the Consolidated HMS FMP, once the objective of the time/area closure had been met. However, NMFS must balance many factors when considering whether to re-open or to modify the HMS time/area closures. These include the bycatch of protected species, non-target species, and undersized fish. Also, socio-economic issues must be considered. A reexamination of the PLL closed areas, using information that has become available since the implementation of circle hooks in the PLL fishery, may be warranted because much of that information was not available during the recent development of the Consolidated HMS FMP.

NMFS has received an application for an EFP to collect data from PLL vessels in the East Florida Coast and Charleston Bump closed areas to gather data on circle hook performance, and target and bycatch species composition. This information could be compared with historical PLL logbook and observer data to determine if the new PLL practices warrant a review of fishing in the PLL closed areas. NMFS published a notice in the Federal Register on March 13, 2007, to solicit public comments on the EFP request. NMFS published an additional notice in the Federal Register on April 11, 2007, extending the comment period to April 25, 2007.

Finally, the Agency recently established new criteria in the Consolidated HMS FMP to be considered when deciding whether to add, change, or modify time/area

closures. These criteria include, but are not limited to, the following: (1) ESA related issues, concerns, or requirements; (2) bycatch rates of protected species, prohibited HMS, or non-target species; (3) bycatch rates and post-release mortality rates of bycatch species associated with different gear types; (4) new or updated landings, bycatch, and fishing effort data; (5) evidence or research indicating that changes to fishing gear and/or fishing practices can significantly reduce bycatch; (6) social and economic impacts; and (7) the practicability of implementing new or modified closures compared to other bycatch reduction options. For ICCAT managed species, NMFS will also consider the overall effect of U.S. catches on that species before implementing time/area closures. If the public believes that modification of an existing closure or the establishment of a new closure is warranted based upon these criteria, they may submit a petition for rulemaking to NMFS. It should contain sufficient information to consider the substance of the petition. The specific information that should be included in the petition is described in the Consolidated HMS FMP. Ultimately, NMFS will determine whether or not to reopen or modify the PLL closed areas based upon the results of the analysis.

Comment 45: NMFS must not implement any new regulations that would allow PLL fishing in the closed areas, or increase longline activity for the U.S. commercial fleet in the vicinity of the U.S. EEZ. These PLL closures are the only reason why swordfish abundance has increased. The recreational fishery has improved for every pelagic species, not just swordfish, since the PLL time/area closures were first implemented. These areas are extremely important management features that benefit swordfish, billfish, tuna, and protected species and must remain intact. There are still many undersized swordfish in these areas. If NMFS allows PLL vessels in the closed areas, the swordfish fishery will collapse again.

Response: As indicated in response to Comment 44, the current time/area closures were implemented for specific management objectives. NMFS may modify existing closures, as appropriate, consistent with the FMP, once the objective of the time/area closure has been met. Additionally, because fisheries, fishing gear, fishing practices, and stock status change over time, NMFS must periodically examine the continued need for the existing time/area closures. The criteria that NMFS will consider are described in the response to Comment 44. NMFS will ultimately decide whether or not to reopen or modify the PLL closed areas based upon the results of such an analysis.

Comment 46: Swordfish abundance has increased because of the PLL closed areas. The DeSoto Canyon provides Florida recreational fishermen in the Gulf of Mexico with better fishing opportunities. The Mississippi Canyon and Green Canyon are also biologically rich areas. Perhaps NMFS should consider reopening portions of the DeSoto Canyon in exchange for closing portions of the Mississippi or Green Canyons. This could benefit species that reside or transit the western Gulf of Mexico.

Response: These are options that NMFS could consider in the future. In analyzing the time/area closures, NMFS will strive to balance protection for overfished species, undersized fish, threatened and endangered species, and marine mammals, while providing opportunities for financially solvent fisheries.

## **Recommendations for Future Management of the U.S. Swordfish Fishery**

Comment 47: To increase swordfish landings and/or improve management, NMFS should consider restructuring its HMS permit system. Specific suggestions include: (1) place swordfish in the General Category tuna permit; (2) allow Incidental swordfish permits to be converted to directed swordfish permits; (3) remove the restriction that requires three permits to fish for swordfish; (4) reinstate lapsed permits in the Barnegat Light area; (5) allow for the leasing of inactive permits; (6) allow all vessels that hold an *Illex* moratorium permit to apply for an Incidental swordfish permit; (7) implement a commercial rod and reel permit (not limited access) that would allow sport fishermen to sell their swordfish; and (8) issue more swordfish permits.

Response: NMFS notes these very specific and informative comments from the public and will take them into consideration in the future, as warranted.

Comment 48: If U.S. fishermen substantially increase their swordfish catch from July to October, along with the Canadian production, the market will not be able to support all of the fresh product in the first couple of years, which is when we need to make a difference. To retain the U.S. swordfish quota, NMFS should allow U.S. vessel owners to deploy large freezer vessels (50 meters or larger with  $-60^{\circ}$  C freezers) to substantially increase catches without destroying the fresh swordfish market. These types of vessels can stay at sea for two to three months at a time. The Grand Banks are fishable from June-November, so these vessels could take two trips annually to the Grand Banks, and then fish offshore in the south during winter months, freezing the entire catch at  $-60^{\circ}$  C. The vessels would be fishing rather than steaming back and forth to the dock. The landed fish would be sold on an entirely different market than fresh product. This is what the United States needs to catch its swordfish quota, and it would not affect local fresh markets. It would also create an exportable product. To deploy a vessel of this caliber in time for the 2007 Grand Banks season, U.S. vessel captains need permission to contract or lease an existing, ready-to-fish vessel. This would be a vessel flagged outside of the United States. For the short term (three to five years), U.S. owners should be allowed to obtain existing foreign-flagged vessels. Then, after three to five years, they should be allowed to bring these same vessels under U.S. ownership and flag. It would be necessary to consider permits for these vessels too. Perhaps NMFS should allow for a 50-percent or larger increase, instead of a 35-percent increase in vessel upgrading.

Response: As indicated in the response to Comment 36, NMFS may consider the concept of freezer vessels fishing for swordfish. Under the final management measures, some vessels potentially could be upgraded, through conversion or permit transfer, to be utilized as freezer vessels, depending upon the size of the baseline vessel. In the longer-term, it may be necessary to further analyze the potential impacts associated with a freezer fleet to determine the appropriate number of vessels, permit qualification criteria, and environmental impacts. Under the Magnuson-Stevens Act, foreign vessels may only harvest the portion of the optimum yield that will not be harvested by vessel of the United

States. Foreign vessels fishing in the U.S. EEZ must also comply with the requirements of Title II of the Magnuson-Stevens Act.

Comment 49: It is important to open the Windward Passage and the area off the Yucatan to allow a larger percentage of the Atlantic swordfish fleet to fish in the winter.

Response: The Windward Passage is a strait in the Caribbean Sea, between Cuba and Haiti. The waters off the Yucatan peninsula are largely within Mexican jurisdiction. Therefore, NMFS does not have the authority to open these waters to U.S. vessels.

Comment 50: The swordfish market has collapsed in terms of price. The problem is not with the fish, but with the prices that commercial longliners receive for their swordfish. These boats fish for tunas because of the price. There is a limited U.S. market for fresh swordfish. Therefore, market revitalization to increase public demand for swordfish is critical. Promotional marketing of domestic swordfish would help reduce imports. Also, NMFS must combat media perceptions that swordfish are unsafe due to mercury, and that swordfish are endangered. U.S. fishermen get hurt every year by swordfish imports from Canada, especially in September when the domestic ex-vessel price plummets from over \$4/lb to around \$2/lb.

Response: Market considerations are important. In October 2006, NMFS announced the results of a government-sponsored study conducted by the National Academy of Sciences addressing seafood safety and the health benefits associated with eating seafood. NMFS intends to continue to distribute fact-based information to the public regarding seafood consumption. For example, it is important to publicize the fact that swordfish are almost fully rebuilt to refute persistent perceptions that the stock is severely overfished. Exploring potential cooperative efforts with the seafood industry may further serve to promote domestic markets. Also, NMFS published a final rule in the Federal Register (April 11, 2007, 72 FR 18105) that provides for the establishment of Seafood Promotion Councils designed to help market and promote seafood to U.S. consumers, to eliminate confusion by providing the public with accurate information on the health benefits of eating seafood, and to assist the seafood industry to better market its products.

Comment 51: NMFS must stop swordfish imports from flooding the U.S. market with cheap product. The United States should require that imported pelagic species be harvested according to the same conservation standards as domestic fish.

Response: NMFS continues to conduct bilateral and multilateral outreach efforts with foreign countries, particularly regarding the use of circle hooks. In addition, the international provisions of the newly re-authorized Magnuson-Stevens Act will support the United States' continued efforts at the international level to pursue conservation measures comparable to the United States, while taking into account differing conditions.

Comment 52: NMFS should establish in-season adjustments to PLL closed areas to improve the ability of the longline fleet to better harvest the swordfish quota.

Flexibility is necessary to adjust pre-established criteria, as is currently conducted in the bluefin tuna fishery. For example, in the Charleston Bump Area, the average swordfish size is increasing. The objective of that closed area has been met, but the area is still closed due to a lack of flexibility in the regulations. The swordfish industry has been denied a reasonable opportunity to catch a greater share of the U.S. quota, because NMFS lacks the authority to modify or waive closures on a real-time basis.

Response: In-season adjustments are pre-specified modifications to existing management measures, and are typically used to change subquotas, retention limits, or some time/area closures such as restricted fishing days (RFDs,) based on landing trends, seasonal distribution of the species, availability, abundance, migration patterns, and other factors. The impacts associated with in-season adjustments are limited, and have already been analyzed in other supporting documents. For time/area closures that are more significant in scope, NMFS specified seven criteria in the Consolidated HMS FMP that may be considered when implementing or adjusting time/area closures. These are described in the response to Comment 44.

Comment 53: The United States needs to show other countries that circle hooks are reducing bycatch while fostering an economically viable fishery. This would encourage other countries to use them and reduce bycatch throughout the Atlantic Ocean.

Response: NMFS has conducted, and will continue to conduct, bilateral and multilateral outreach efforts with foreign countries regarding the use of circle hooks. In 2004, NMFS demonstrated the use of circle hooks at ICCAT. In 2005, ICCAT passed a non-binding measure regarding the use of circle hooks. These types of activities, in combination with economically viable domestic fisheries, may be an effective way to reduce bycatch throughout the Atlantic Ocean.

Comment 54: NMFS received comments regarding the need to either increase or decrease the swordfish minimum size requirement. Comments include: The swordfish minimum size should be increased to at least 55 inches. This would allow the fish to grow larger and rebuild the stock. NMFS should reduce the minimum swordfish size to increase catches. This would be more effective than the preferred alternatives at attaining the U.S. quota.

Response: The current minimum size and weight for swordfish is 29 inches (73 cm) from cleithrum to caudal keel (CK); 47 inches (119 cm) lower jaw fork length (LJFL); or 33 lb (15 kg) dressed weight (dw). These minimum sizes are established by ICCAT. However, the United States does have some discretion to negotiate a higher minimum size, considering domestic requirements. NMFS will consider this in the future, as appropriate.

Comment 55: We do not support enacting measures to revitalize the PLL fishery, per se, because the gear results in intolerable levels of bycatch of protected and other species. Therefore, NMFS is urged to investigate other gears that will allow the United States to capture its swordfish quota without excessive bycatch.

Response: This final rule is intended to facilitate the ability of U.S. vessels to fully harvest the domestic swordfish quota. The PLL fleet is a major component of the swordfish fishery. Therefore, NMFS believes that appropriate measures to revitalize the domestic PLL fleet are necessary, as are other measures to increase swordfish landings in other sectors. The number of active vessels that reported fishing with PLL gear has declined by approximately 68 percent since 1997, the last year that the United States fully harvested its swordfish quota. However, in that same time period, the swordfish stock has rebuilt from 65 percent of Bmsy to 99 percent of Bmsy. This indicates that a balanced approach is necessary to increase swordfish landings, while ensuring that the fishery remains sustainable and that bycatch is minimized to the extent practicable. The HMS PLL fishery is currently subject to many regulations that were implemented to reduce bycatch and bycatch mortality. These include circle hook requirements, bait restrictions, mandatory possession and use of careful handling and release equipment, protected species safe handling, release, and identification certification workshops, and time/area closures. In addition, PLL vessels must utilize VMS, submit logbook reports, and adhere to retention limits, quotas, minimum sizes, prohibited species restrictions, and other regulations. The measures in this final rule are anticipated to modestly increase swordfish landings, with only minor environmental impacts. NMFS will consider additional actions in the future. In the meantime, NMFS encourages investigations of other gears that will allow the United States to fully capture its swordfish quota without excessive bycatch.

Comment 56: NMFS should allow greenstick gear in the Longline and General category tuna fisheries because the reduction in billfish bycatch in the tuna fishery may significantly offset any potential negative impact that swordfish revitalization may have on billfish bycatch. Greenstick gear is the most environmentally friendly method to commercially harvest tunas (including bluefin tuna) because it minimizes the discard mortality of undersized tunas and virtually eliminates any billfish bycatch.

Response: NMFS did not modify the list of authorized gears to include green stick gear in the Consolidated HMS FMP due to confusion over the gear and concerns regarding bluefin tuna stock status. Rather, NMFS clarified the use of the gear and stated it would conduct additional outreach regarding its use. NMFS is continuing to examine the use of green stick gear and its impact on the environment, as well as its social and economic benefits and consequences.

Comment 57: NMFS should implement the same regulations for swordfish that currently apply to yellowfin tuna in the CHB fishery. NMFS should allow charter boats to conduct either charter or commercial trips and allow the swordfish to be sold.

Response: HMS CHB vessels may sell up to three yellowfin tuna per person per day when engaged on a for-hire trip, and there are no limits on the amount of yellowfin tuna that may be retained and sold when on a non for-hire trip. CHB vessels may not sell swordfish, unless the vessel also possesses a swordfish Handgear permit. This restriction was first implemented when swordfish were overfished, and the United States was fully

harvesting its quota prior to 1997. Because these conditions have changed, NMFS may further analyze and reconsider the restriction in the future.

Comment 58: Please consider limiting or banning buoy gear. We oppose granting additional buoy permits, and favor 100 percent VMS coverage for vessels fishing with buoy gear. Other restrictions on the buoy gear fishery must be considered, including circle hook requirements and geographical restrictions. Fishermen are concerned about the significant growth of this fishery in the last few months. Gear conflicts are a constant concern by both commercial and recreational interests. Keeping the buoy gear fishery small, with controlled growth, would reduce conflicts and allow for a sustainable fishery.

Response: NMFS received many comments regarding the buoy gear fishery, especially as it occurs in the Straits of Florida. The public is reminded that, prior to 2006, the HMS buoy gear fishery was largely unregulated. NMFS significantly restricted the fishery in the Consolidated HMS FMP by authorizing buoy gear only for swordfish Handgear and Directed permit holders, limiting the number of floatation devices that could be deployed, limiting the number of hooks per buoy gear, and requiring that monitoring devices be attached to each gear. In addition, NMFS amended the definition of handline by requiring that they remain attached to vessels. The effect of these regulations was to limit the buoy gear fishery only to commercial fishermen, reduce the likelihood of lost gear, and provide for the collection of logbook information. As logbook and other research information become available, NMFS will consider whether additional regulations or restrictions are necessary.

Comment 59: We oppose the issuance of any type of commercial swordfish permit to current recreational fishermen to fish in the closed zones. Making numerous commercial permits available would cause far too many buoy gear conflicts with the recreational fleet in the Florida Straits.

Response: All commercial swordfish permits are limited access, which means that no new permits are being issued. However, persons may obtain an existing commercial limited access fishing permit through the permit transfer regulations specified at § 635.4(1). The PLL and BLL closed areas apply only to those specific gears, and are not for the exclusive use of recreational fishing. For example, in the East Florida Coast closed area, holders of swordfish Handgear or Directed permits may fish for swordfish using handgear and buoy gear. Similarly, commercial shark permit holders may fish for sharks using BLL gear in this area. As logbook and other research information regarding buoy gear become available, NMFS will consider whether additional regulations or restrictions are necessary.

Comment 60: Careful handling and release equipment should be required for HMS CHB, especially in the Gulf of Mexico. Terminal tackle should be removed to help increase post-release survival.

Response: Terminal tackle should be removed from all species prior to their release in order to increase post-release survival. Current HMS regulations require that

all fish that are not retained must be released in a manner that will ensure the maximum probability of survival, but without removing the fish from the water. Billfish that are not retained must be released by cutting the line near the hook or by using a dehooking device, in either case without removing the fish from the water. NMFS' Southeast Regional Office (SERO) recently published Amendment 18A to the Gulf of Mexico Reef Fish Management Plan on August 9, 2006 (71 FR 45428). Amendment 18A required that all for-hire reef fish permitted vessels must possess and utilize release gear and careful handling protocols to reduce injuries to sea turtles and smalltooth sawfish. SERO estimated that 1,500 – 1,600 for-hire reef fish vessels would be affected by this requirement. Because many reef fish permitted for-hire vessels in the Gulf of Mexico also possess an HMS CHB permit, they are already required to possess and utilize careful handling and release equipment. Depending upon future analyses, NMFS may consider requiring other HMS permitted vessels to possess and utilize careful handling and release equipment.

Comment 61: NMFS should keep the live bait prohibition for PLL vessels in the Gulf of Mexico, because live bait results in higher rates of white marlin bycatch. If white marlin is listed under the ESA, most fisheries will be out business.

Response: The live bait prohibition for HMS PLL vessels is not being modified in this final rule. However, NMFS has received several requests to reconsider the regulation because mandatory circle hooks have effectively reduced marlin bycatch and bycatch mortality. As more information becomes available through logbooks, observer data, and research efforts, NMFS may re-evaluate this requirement.

Comment 62: Any effort to increase U.S. recreational swordfish landings is worthless unless adequate data collection methods are in place to monitor and report these landings. Accurate data is important. NMFS should reach out to the recreational fishing industry to work on these improvements. Outside of Florida, recreational swordfish landings are considered rare events and are not likely to be recorded by traditional data collections like the Marine Recreational Fisheries Statistical Survey (MRFSS), the Large Pelagic Survey (LPS), and the Recreational Billfish Survey (RBS). MRFSS is fatally flawed, especially for swordfish. It is difficult for MRFSS surveyors to see if people are swordfish fishing because they are typically caught at night, oftentimes on a tuna or snapper/grouper trip. Therefore, there may not be many swordfish recorded in the MRFSS survey. NMFS should start using CHB logbooks to assess recreational swordfish landings. Additionally, NMFS should consider using a catch card program for swordfish similar to programs used by Maryland and North Carolina for BFT.

Response: Accurate recreational landings data are important. For this reason, all non-tournament swordfish landings by HMS Angling category permit holders are required to be reported by calling (800) 894-5528. In Maryland and North Carolina, vessel owners should report their swordfish landings at state-operated reporting stations. For information on these state's reporting stations, please call (410) 213-1531 (MD) or (800) 338-7804 (NC). Swordfish landed in a registered tournament may be reported by the tournament operator. However, vessel owners are responsible for reporting if the

tournament operator does not. HMS CHB permit holders must complete a logbook with landings information and submit it to NMFS, if selected. Finally, the newly re-authorized Magnuson-Stevens Act has new MRFSS-related provisions which NMFS will address, as required under the Act.

Comment 63: NMFS should consider allowing recreational anglers 48 hours to report their recreational swordfish and billfish catches, instead of 24 hours. This would increase recreational reporting and, thus, recorded U.S. swordfish landings.

Response: Currently, all recreational landings of swordfish must be reported to NMFS within 24 hours of landing. This ensures timely and accurate data collection. NMFS may consider extending the time period, if warranted, if it does not compromise data collection. The Agency is also currently testing an on-line reporting system to facilitate recreational reporting.

Comment 64: NMFS should allow recreational fisherman to retroactively report previous swordfish landings. It would substantially increase historical recreational swordfish catches.

Response: The recreational reporting requirement has been in place since 2003. NMFS is concerned that data quality and accuracy would be compromised if an amnesty program were implemented to allow for retroactive reporting of recreational landings. Unless the angler kept very detailed catch records, much of the data would be based upon personal recollection and have limited usefulness. It would also be very difficult to verify the reports.

Comment 65: NMFS needs to employ a tagging system where only legal, tagged swordfish may be sold and distributed. This would help to track the removal of swordfish biomass.

Response: NMFS received numerous comments regarding the illegal sale of recreationally caught swordfish. A tagging system could reduce this activity. Tags have been used effectively in the bluefin tuna fishery for many years, and could be appropriate for the swordfish fishery. However, domestic swordfish landings have historically been much higher than bluefin tuna landings, so the logistics associated with administering a swordfish tagging program would have to be addressed.

Comment 66: Recreational fisherman need to have the current regulations presented to them in a way that makes them understand how to identify catches, know if they are legal, and know if they need to be reported. Perhaps mandatory workshops should be required for recreational fishermen. NMFS could also include information on fishing regulations and species identification with permit mailings or when renewing permits.

Response: It is important for recreational fishermen to know and understand the regulations that affect their fishery. Due to the size and diversity of the HMS recreational

fishing community, and because some anglers may fish only a few times a year, this sector presents a unique challenge. In addition to current outreach methods such as the HMS website and the e-mail list, additional outreach efforts are being explored with local newspapers, magazines, and other websites. Mandatory workshops for recreational anglers are not being considered at this time because they would likely be expensive and difficult to administer, given the large number of recreational anglers.

Comment 67: Socio-economic data on recreational swordfishing is almost non-existent. NMFS must thoroughly evaluate socio-economic ramifications before making any major changes in swordfish fishery dynamics. This is a requirement of the Magnuson-Stevens Act.

Response: The recreational swordfish fishery has developed relatively rapidly within the past three to six years, as the swordfish stock has continued to rebuild. For this reason, detailed socio-economic data are limited. However, NMFS collects mandatory recreational swordfish landings data and mandatory swordfish tournament registration forms. In addition, NMFS has received many comments from recreational fishery participants in recent years regarding a variety of proposed management measures. Swordfish fishing is an important and growing recreational activity off the southeast coast of Florida, and is starting to spread to other regions as well. NMFS thoroughly considered verifiable information available on the socio-economic ramifications of the final management measures on the recreational swordfish fishing community during this rulemaking. As the swordfish stock continues to rebuild and the recreational fishery continues to grow, it will be necessary to obtain more socio-economic data regarding this activity.

### **Questions Regarding the U.S. ICCAT Swordfish Quota**

Comment 68: How many years is the current swordfish quota from ICCAT valid for?

Response: In 2006, ICCAT-recommended a 3,907 mt (ww) U.S. North Atlantic swordfish quota for 2007 and 2008.

Comment 69: Are dead discards counted against the ICCAT swordfish quota or used in stock assessments?

Response: Yes. Estimated dead discards from scientific observer and logbook sampling programs are counted against the U.S. North Atlantic swordfish quota, and are used in the swordfish stock assessments conducted by ICCAT's SCRS.

Comment 70: If the United States loses its ICCAT swordfish quota, would it affect recreational fisheries in this country as well?

Response: It is possible that recreational fisheries could be directly or indirectly affected if the United States loses a portion of its swordfish quota. Recreational

swordfish landings are included within the Incidental quota allocation, currently at 300 mt. Depending upon the size of any potential reduction in the overall U.S. swordfish quota, the Incidental quota allocation or recreational retention limits could be reduced correspondingly. Indirect impacts could occur if foreign nations are given a larger quota share, and those foreign vessels exert additional fishing effort on swordfish without measures to reduce the bycatch of protected species, undersized swordfish, and billfish. This is one of the primary reasons why NMFS believes it is imperative to retain the historical U.S. North Atlantic swordfish quota share.

Comment 71: If the U.S. swordfish quota is not being caught by 2009, does NMFS have a contingency plan?

Response: NMFS intends to continue monitoring U.S. swordfish landings and may adjust management measures in the future to provide additional opportunities for U.S. vessels to land the domestic swordfish quota.

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