**Atlantic Billfish Fishery Management Plan Amendment**

## Chapter 1

## Introduction

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## 1.1 Purpose and Need

This integrated document contains all the elements of the Fishery Management Plan (FMP) Amendment, including a revised Final Supplemental Environmental Impact Statement (FSEIS), Regulatory Impact Review (RIR), Final Regulatory Flexibility Analysis (FRFA), and Social Impact Assessment (SIA)/Fishery Impact Statement (FIS).

### 1.1.1 History of Atlantic Billfish Fishery Management

Atlantic blue and white marlin, west Atlantic sailfish and longbill spearfish resources present a unique challenge for fisheries management in the United States due to their distributional and behavioral patterns. Atlantic billfish management strategies are guided by international (International Commission for the Conservation of Atlantic Tunas; ICCAT) and national mechanisms (the Atlantic Billfish FMP). Two recent actions have changed the focus of billfish management in the Atlantic by the United States. On the national level, passage of the 1996 Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act)

initiated fundamental changes in U.S. fishery management policy, shifting emphasis to precautionary management strategies. In September 1997, the National Marine Fisheries Service (NMFS) listed fishery resources considered to be overfished, including Atlantic blue and white marlin. This agency action triggered a suite of management requirements, including development of a rebuilding plan for overfished stocks, and reduction in bycatch and bycatch mortality. Further, in 1998, west Atlantic sailfish was added to the list of overfished species. In the international arena, ICCAT made its first-ever binding recommendation for Atlantic blue and white marlin in 1997, requiring landing reductions of at least 25 percent from 1996 levels by the end of 1999. Improvements in data and monitoring were also included in this recommendation. The United States sponsored a resolution at the 1998 ICCAT meeting resulting in a recommendation that the SCRS develop stock recovery scenarios following the next assessment for Atlantic blue and white marlin in 2000 and west Atlantic sailfish in 2001

The fishery management plan for Atlantic billfish was published in March 1988, and was prepared by the South Atlantic Fishery Management Council (FMC) in cooperation with the Caribbean FMC, Mid-Atlantic FMC, New England FMC and Gulf of Mexico FMC. The FMP responded to four problems in the fishery

1. An intense competition for the available resource between the recreational fishery for billfish and other fisheries that have a bycatch of billfish

2. A developing commercial market for billfish and an increasing value for the product, thus encouraging directed fishing and/or increased retention of incidentally caught billfish, thereby jeopardizing the economically valuable, traditional recreational fishery and undermining the conservation ethic developed by the recreational user group

3. A rapidly expanding domestic tuna longline fishery, which has had a higher billfish bycatch than the historical swordfish fishery; and

- The inadequacy of the statistical and scientific database for stock assessments.

The Atlantic Billfish FMP identified three objectives to address these problems:

- Maintain the highest availability of billfishes to the U.S. recreational fishery by implementing conservation measures that will reduce fishing mortality;

- Optimize the social and economic benefits to the nation by reserving the billfish resource for its traditional use, which in the continental United States is almost entirely a recreational fishery; and

3. Increase understanding of the condition of billfish stocks and the billfish fishery.

To achieve the objectives of the FMP, the following management actions were implemented:

- No sale provision: This action prohibited the sale, barter or trade of Atlantic billfish from their management unit (see Section 1.3 for definition of management units);

- Minimum sizes: Recreational minimum sizes limits were established to reduce recreational landings (see Section 3.4.1 for summary);

- No possession by longliners and drift net vessels: Possession of Atlantic billfish in the U.S. EEZ was prohibited (see Section 3.4.1 for summary); and

- Data reporting: Several data reporting mechanisms were developed or expanded, including: Atlantic billfish was added to the previously required logbooks and observer programs for the swordfish fishery, and mandatory tournament reporting (see Section 3.8).

The 1988 FMP recognized the traditional fishing patterns of the Atlantic billfish fishery, which for the United States, was entirely a recreational fishery until the early 1980s with the development of relatively small commercial landings (approximately 10 percent of recreational Atlantic billfish landing levels) in association with the growing pelagic longline fleet. Therefore, the no sale provision in conjunction with the prohibition on retention by commercial fishing vessels and minimum size restrictions for the recreational fishery established fair and equitable allocation of these fishery resources.

More recently, on March 24, 1998, NMFS published an interim rule (63 FR 14030) under section 305(c)of the Magnuson-Stevens Act, that increased the minimum size limits for Atlantic blue marlin and Atlantic white marlin to 96 inches lower jaw-fork length (LJFL) and 66 inches LJFL, respectively, and specified requirements to notify NMFS of tournaments involving any Atlantic billfish at least 4 weeks prior to commencement. NMFS utilized the increases in size limits to immediately reduce overfishing, and to implement the 1997 ICCAT recommendation, as required by the Atlantic Tunas Convention Act (ATCA). NMFS files an extension and amendment of the interim rule on September 24, 1998 and published on September 29, 1998 (63 FR 51859). The extension of the interim rule, as amended; (1) further increased the minimum size for Atlantic blue marlin to 99 inches lower jaw fork length (LJFL); (2) restated the minimum size for Atlantic white marlin as 66 inches LJFL; (3) established a recreational bag limit of one Atlantic marlin (blue or white marlin) per vessel per trip; (4) granted the Assistant Administrator for Fisheries (AA) the authority to adjust the bag limit, with a three-day notice, including adjustment to a zero bag limit, if necessary to meet international and domestic management objectives; and (4) continued requirements to notify NMFS of tournaments involving any Atlantic billfish at least 4 weeks prior to commencement. NMFS amended the interim rule on November 13, 1998 (63 FR 63421) by removing the adjustable bag limit provision.

Atlantic billfish are taken as bycatch in the pelagic longline fisheries for swordfish, tuna and pelagic sharks. The frequency occurrence of billfish in pelagic longline gear is generally in proportion to the amount of effort expended, therefore any regulatory actions reducing target species quotas will have a concomitant impact on reducing the number of billfish taken as bycatch. Over the past decade, the North Atlantic swordfish quotas generated by ICCAT have been reduced from over 15,000 mt in the late 1980s and early 1990s, to 10,700 mt for 1999; the United States accounts for approximately 29 percent of the quota. Pelagic sharks are not subject to ICCAT quotas, but the United States has instituted a quota system for sharks. The HMS FMP includes further restrictions on pelagic shark quotas, that may result in reductions in billfish bycatch in this fishery.

### 1.1.2 The HMS Process

On November 28, 1990, the President of the United States signed into law the Fishery

Conservation Amendments of 1990 (Pub. L. 101-627). This amendment to the law gave the Secretary of Commerce (Secretary) the authority (effective January 1, 1992) to manage tunas in the exclusive economic zone (EEZ) of the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea under authority of the Magnuson Act (16 U.S.C. 1811). This law also transferred from the Fishery Management Councils to the Secretary, effective November 28, 1990, the management authority for the other highly migratory species (HMS) in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea (16 U.S.C. 1854(f)(3)).[(1)] At that time, the Secretary of Commerce designated the National Marine Fisheries Service with the responsibility to manage these Atlantic HMS. In order to accomplish this task, NMFS designed an administrative process for creating fishery management plans (FMPs) and other rulemaking.

In 1996, the Sustainable Fisheries Act (Pub. L. 104-297) amended the Magnuson Act (re-naming it the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act)) to require that NMFS establish advisory panels (APs) to assist in the development of FMPs and FMP amendments for Atlantic HMS. Given these new requirements, NMFS revised the administrative process it follows to develop FMP documents. The administrative process is outlined below

- Phase 1 -- Planning and Scoping

a. Notice-of-intent to prepare an FMP or FMP amendment;
b. Draft issues/options statement;
c. Initial consultations,
d. Scoping meetings.

- Phase 2 -- Preparation of Draft Documents; Consultations and Meetings

a. Revised issues/options statement;
b. Documents to be prepared;
c. Preparation strategy;
d. Document contents;
e. International management recommendations;
f. Timing;
g. Consultations; meetings with fishery interests.

3. Phase 3 -- Initial Public Review and Comment Period; NEPA Public Review and Comment Period; ANPR Public Review and Comment Period if Applicable; and Public Hearings

a. Notice of availability to the public; ANPR published if applicable;
b. Review periods and comments;
c. Public hearings.

- Phase 4 -- Preparation of Revised Documents and Proposed Regulations; Consultations and Meetings

a. Documents to be prepared;
b. Preparation strategy;
c. Document contents;

d. Timing;
e. Consultations; meetings with fishery interests.

- Phase 5 -- Final Public Review and Comment Period; Proposed Regulations Published for Public Review and Comment

a. Notice of availability to the public and proposed regulations published;
b. Review periods and comments.

- Phase 6 -- Preparation of Final Documents and Final Regulations

a. Documents to be prepared and document contents;
b. Preparation strategy.

- Phase 7 - Approval and implementation

a. Approval procedures and timing.

- Phase 8 - Continuing and contingency fishery management

a. Framework management measures;
b. Contingency fishery management - emergency actions.

### 1.1.3 Issues/Problems for Resolution

The Atlantic billfish complex covered by this FMP amendment includes Atlantic blue marlin (Makaira nigricanus), Atlantic white marlin (Tetrapturus albidus), west Atlantic sailfish (Istiophorus platypterus) and longbill spearfish (Tetrapturus pfluegeri). Although Atlantic swordfish are also billfish, they are not included in this FMP amendment because the directed fishery for that species is conducted primarily for commercial purposes. Atlantic billfish are managed under the FMP for Atlantic Billfish, implemented under the authority of the Magnuson-Stevens Act at 50 CFR part 644, and with the final rule for Atlantic HMS, at 50 CFR part 635. In addition, Atlantic billfish are also subject to the management authority of ICCAT, of which the United States is a member. The Secretary of Commerce is required, under ATCA, to implement all ICCAT recommendations approved by the United States.

The Atlantic billfish FMP amendment addresses the following management problems:

Overfished populations of Atlantic blue marlin and Atlantic white marlin

In 1996, Congress reauthorized the Magnuson Act by passing the Sustainable Fisheries Act (SFA), which included several provisions that directly impacted the management of highly migratory species. One of the new provisions requires NMFS to notify Congress each year on the status of U.S. fisheries. In September, 1997, NMFS submitted the first report, entitled "A Report to Congress: Status of Fisheries in the United States," which listed both Atlantic blue marlin and white marlin as overfished. The 1997 Report of the Standing Committee for Research and Statistics (SCRS) of ICCAT considered both Atlantic blue marlin and Atlantic white marlin as over-exploited, based on assessments conducted during the Third ICCAT Billfish Workshop in May, 1996. Under the Magnuson-Stevens Act, NMFS is required to submit a draft FMP amendment to the Secretary of Commerce within a year of a fishery being designated as

overfished. NMFS published a Notice of Availability for the draft Atlantic billfish FMP amendment, including a rebuilding plan, on October 9, 1998 (63 FR 54433). Management alternatives for the amendment to the Atlantic Billfish FMP were developed in consultation with the Billfish Advisory Panel (AP). The AP was created in response to another new provision included in the SFA, that mandated the establishment of APs to assist in the preparation of FMPs or plan amendments involving highly migratory species (Section 302(g)(1)). Overfishing and overfished stocks may result in reduced population stability; lower or more unpredictable yields and concomitant difficulty sustaining viable charterboat operations; reduced availability to recreational private-boat anglers; economic losses to related businesses (e.g., marinas, tackle shops); and possibly, shifts in ecosystem dynamics. Further exacerbating problems caused by overfishing of all Atlantic billfish, is the fact that the United States shares most of these stock with other countries and is responsible for only five to six percent of Atlantic-wide fishing mortality for these species.

Bycatch and discard mortality

Atlantic billfish are now caught almost exclusively on hooks fished from rods and reels or on pelagic longlines. Most rod and reel catches occur as a result of anglers targeting billfish, while most longline catches occur incidently when other species, particularly swordfish and tuna, are targeted. By statutory definition, any fish caught and released either dead or alive is considered as bycatch. The Magnuson-Stevens Act requires that bycatch be avoided to the maximum extent practicable, and if the catch is unavoidable, then the release of fish is to be done in such a manner that the probability of survival is maximized. In short, bycatch is undesirable and should be eliminated. However, the release of fish caught in a recreational fishery may not be undesirable if the survival of released fish is high because of the recreational opportunities they produce without adversely affecting the stocks. Reducing the unintended catch (and mortality) of Atlantic billfish caught on longlines while recognizing the benefits of promoting the release of live fish by recreational anglers, even though the release of these fish in both situations appears to be bycatch (as defined in the Act), is a problem requiring resolution. This problem is exacerbated because the Atlantic billfish FMP manages the directed recreational fishery, while the HMS FMP manages all other major sources of Atlantic billfish fishing mortality (i.e., pelagic longlines). Management measures designed to reduce the non-directed recreational fishing impacts are, therefore, contained in the HMS FMP.

Complicating bycatch management of Atlantic billfishes is the fact that dead discards of all Atlantic billfish combined from U.S. pelagic longline gear represents approximately one percent of the total catch of that gear. In addition, over 60 percent are released alive, based on observer information, resulting in an effective mortality rate by pelagic longlines of less than 0.5 percent of pelagic longline catch. Bycatch and discards of Atlantic billfish in HMS fisheries can be problematic because they further depress overfished stocks, impede stock rebuilding, and, in the case of target species, carry an opportunity cost of foregone harvest or enjoyment for all segments of the fisheries. There is a need to describe and manage all sources of mortality, including bycatch of Atlantic billfish and other organisms (e.g., birds, turtles, marine mammals), in all HMS fisheries. NMFS is subject to national and international requirements to avoid and reduce bycatch and bycatch mortality, most notably under the Magnuson-Stevens Act, the Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA), and the Atlantic Tunas Convention Act (ATCA), which implements ICCAT recommendations. Bycatch also

plays a role in the overall balance of the pelagic ecosystem when considering the fate of released animals, predator-prey relationships, and environmental quality.

Compliance with the 1997 ICCAT recommendation to reduce Atlantic blue marlin and Atlantic white marlin landings

In 1997, ICCAT adopted a recommendation with several measures to address billfish resources throughout the Atlantic Ocean, including reduction of Atlantic blue marlin and Atlantic white marlin landings by at least 25 percent from 1996 levels, starting in 1998, to be accomplished by the end of 1999. In response to the ICCAT recommendation, as required by ATCA, an interim final rule was published (March 24, 1998; 63 FR 14030), increasing the minimum size of blue marlin and white marlin that could be retained by U.S. recreational anglers for a period of 180 days (March 24, 1998 to September 23, 1998), as a means to initiate U.S. compliance with the ICCAT recommendation. The interim rule was extended and amended on September 24, 1998 for an additional 180 days with an additional increase in the minimum size of Atlantic blue marlin and an implementation of a single marlin per trip retention limit (September 29, 1998; 63 FR 51859). This amendment addresses the use of size limits and retention limits beyond the expiration of the extended interim rule to accomplish the 1997 ICCAT recommendation concerning reduced billfish landings.

Monitoring and data collection

Under ATCA, the United States must comply with the measure in the 1997 ICCAT recommendation requiring improvement in monitoring, data collection and reporting in all Atlantic billfish fisheries. The mandatory four-week notification requirement for tournaments to register with NMFS initiated improvements in recreational monitoring. NMFS extended this interim rule on September 29, 1998. In addition, section 971i(b)(2)(E) of ATCA requires comparable monitoring of both commercial and recreational fisheries. Monitoring the fishery and its stock requires the collection and timely analysis of fishery-dependent and -independent data. The fishery management program must include measures to ensure adequate social, economic, and biological data collection from all user groups, including, as appropriate: permitting (of vessels, dealers, and importers), observer programs, logbook reporting programs, other self-reporting mechanisms, dockside monitoring, and telephone surveys. This amendment addresses the use of logbooks, permits, observers, and tournament registration beyond the expiration of the extended interim rule to accomplish the 1997 ICCAT recommendation concerning improved monitoring of billfish landings.

Status of Atlantic sailfish and longbill spearfish populations

The SCRS completed the most recent assessment of west Atlantic sailfish and longbill spearfish (catches are reported together in ICCAT catch statistics) in 1993, and included data collected through 1991. West Atlantic sailfish biomass trends have declined to fully exploited or over-exploited levels based on these analyses; the status of longbill spearfish is difficult to determined because their relative infrequency occurrence in the pelagic longline or recreational fisheries. The SCRS estimated that the 1996 relative biomass for west Atlantic, sailfish biomass was 62 percent of the biomass needed to produce maximum sustainable yield (MSY). West Atlantic sailfish are categorized as overfished based on the status determination criteria developed in this document. NMFS listed west Atlantic sailfish among overfished species in the Atlantic Ocean in

the 1998 Report to Congress. Therefore, this amendment provides management measures to west Atlantic sailfish stock by approximately 35 percent, and implements precautionary management for spearfish due to the uncertainty of stock status.

Although NMFS must abide by all laws (Section 1.7), the primary domestic legislation constraining fishery management is the
national standards (NS) which fishery managers must consider when preparing a fishery management plan or amendment. These

- overfishing while achieving on a continuing basis, the optimum yield (OY) from each fishery for the
- information available;
- To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or
- of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and

  conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of privileges;

  Conservation and management measures shall, where practicable, consider

  have economic allocation as its sole purpose;

among, and contingencies in, fisheries, fishery resources, and catches;

unnecessary duplication;

of the Act (including the prevention of overfishing overfished stocks), take into

the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities;

Conservation and management measures shall, to the extent practicable, (A) minimize bycatch cannot be avoided, minimize the mortality of such

bycatch; and,

- Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

The national standard guidelines (NSG) on how NMFS follows the NSs are published at 50 CFR Part 600 subpart D (May 1, 1998; 63 FR 24211). In developing this final FMP amendment, NMFS considered all of the NSs, as applicable, for each final action. In some cases, the importance of a NS was large enough to merit its own section; for example, Section 3.5 specifically addresses NS9.

### 1.1.5 International Considerations

During the development of this FMP amendment and its companion document, the HMS FMP, a principal discussion at AP meetings revolved around the relationship between international management and domestic management of Atlantic billfish resources. Since 1966, ICCAT has been responsible for international conservation and management of tuna and tuna-like fishes. ICCAT's stated objective is to "cooperate in maintaining the populations of these fishes at levels which will permit the maximum sustainable catch for food and other purposes." All of the Atlantic HMS including tunas, swordfish, and billfish, but with the exception of the shark species, are currently subject to ICCAT management authority.

The United States Congress, in amending the Magnuson-Stevens Act, recognized that these species support international fisheries. For instance, the U.S. Congress included HMS in the rebuilding provisions of § 304, and directed the Secretary to address rebuilding of these stocks. Additionally, § 304(e) provides for consideration of recommendations by international organizations and specifies that rebuilding programs for HMS must reflect traditional participation in the fishery, relative to other nations, by fishermen of the United States.

International Rebuilding

NMFS recognizes that there must be international cooperation to rebuild ICCAT-managed fisheries. Atlantic billfish mortality levels from commercial (dead discards) and recreational fisheries in the United States during the 1990s averaged 5.2 percent for Atlantic blue marlin, 5.8 percent for white marlin, and 6.6 percent of west Atlantic sailfish, relative to total mortality as reported to ICCAT. Unilateral management action by the United States cannot rebuild overfished billfish stocks. Historically, the United States has been a leader in conservation of Atlantic billfish, and has taken actions (e.g., the 1988 Atlantic billfish FMP) to show our willingness to take the critical steps necessary to conserve these stocks. This fact has been a primary negotiation tool at ICCAT, and it is questionable whether recent ICCAT actions (i.e., the 1997 and 1998 ICCAT recommendations) would have been possible without the leadership of the United States. Any action to reduce Atlantic billfish bycatch from tuna and swordfish commercial fisheries must consider traditional participation in the fishery relative to foreign competitors in order to be consistent with the Magnuson-Stevens Act. By law, the United States must provide its fishing vessels with a reasonable opportunity to harvest an allocation, quota of fish, or fishing mortality level specified by international agreement. The Magnuson-Stevens Act also requires the United States to minimize, to the extent practicable, any disadvantage to U.S.

fishermen in relation to foreign competitors.

NMFS has seriously considered the concerns of the AP as well as the requirements of the Magnuson-Stevens Act in determining how to develop rebuilding plans for these internationally fished stocks. This FMP amendment addresses overfishing and rebuilding in the international context, in that it analyzes the international catch levels that would be necessary to rebuild stocks that are subject to ICCAT management authority. While NMFS recognizes that it cannot take unilateral action once it accepts an ICCAT quota recommendation, NMFS believes that it is possible to comply with the Magnuson-Stevens Act by using the rebuilding provisions in this FMP amendment as the foundation for negotiations at ICCAT. A formal rebuilding program must allow overfished stocks to rebuild to the appropriate level to produce maximum sustainable yield in a clearly specified time period that is as short as possible within the international context. The rebuilding program must include biomass and/or fishing mortality targets for recovery, limits, and explicit interim milestones expressed in terms of measurable improvement of the stock.

International Compliance

NMFS concurs with the AP's concern about the lack of international compliance with ICCAT's management regimes. The agency shares the concern of U.S. fishery participants that their sacrifices may not result in the desired conservation effects if other nations fail to implement and enforce similar measures. Lack of compliance can diminish the effectiveness of ICCAT's recommendations and could impede the progress of any rebuilding plans that ICCAT develops. As a member of ICCAT, the United States is obligated by ATCA to comply with the 1997 ICCAT Atlantic billfish recommendation. Since recreational fishermen are the only U.S. fishermen who can land billfish, the 25 percent reduction in blue and white marlin landings will result in reductions of U.S. recreational landings of approximately 21,000 pounds; however, on a larger scale, this recommendation should result in nearly a 3.4 million pound decrease in Atlantic-wide marlin landings from 1996 levels. However, these reductions in landings can only be achieved if other ICCAT member countries/entities comply with the recommendation. The impacts of these reductions in Atlantic blue and white marlin landings will be assessed as part of the 1998 ICCAT recommendation, sponsored by the United States, that will result in rebuilding scenarios, where appropriate, following SCRS stock assessments during 2000 for Atlantic marlins and 2001 for sailfish.

Consistent with other applicable laws, this FMP amendment provides a framework to take necessary action to implement ICCAT recommendations. However, while this FMP amendment forms the foundation for domestic policy, other factors may affect U.S. strategy in negotiating at ICCAT. NMFS will review of this FMP amendment on a continuing basis. Revision of conservation and management measures will promptly follow adoption of an ICCAT recommendation, as appropriate, utilizing guidelines set forth in Section 1.1.2.

### 1.1.6 Atlantic Billfish FMP Amendment Objectives

The Atlantic Billfish FMP amendment retains the original FMP objectives and identifies the following additional objectives (not in ranked order) that will be used to guide the development of management alternatives:

- Prevent and/or end overfishing of Atlantic billfish and adopt the precautionary approach to fishery management;

- Rebuild overfished Atlantic billfish stocks, and monitor and control all components of fishing mortality, both directed and incidental, so as to ensure the long-term sustainability of the stocks and promote Atlantic-wide stock recovery to the level where MSY can be supported on a continuing basis;

- Establish a foundation for the adoption of comparable international conservation and management measures, through international entities such as ICCAT, to rebuild overfished fisheries and to promote achievement of optimum yield for these species throughout their range, both within and beyond the EEZ;

- Minimize, to the extent practicable, release mortality in the directed billfish fishery, and minimize, to the extend practicable, bycatch and discard mortality of billfish on gears used in other fisheries;

- Better coordinate domestic conservation and management of the fisheries for Atlantic tunas, swordfish, sharks, and billfish, considering the multispecies nature of many highly migratory species (HMS) fisheries, overlapping regional and individual participation, international management concerns, and other relevant factors;

- Provide the data necessary for assessing the fish stocks and managing the fisheries, including addressing inadequacies in collection and ongoing collection of social, economic, and bycatch data on Atlantic billfish fisheries;

7 Coordinate domestic regulations and ICCAT conservation measures for controlling Atlantic-wide fishing mortality;

8. Consistent with other objectives of this amendment, manage Atlantic billfish f0isheries for the continuing optimum yield so as to provide the greatest overall benefit to the Nation, particularly with respect to recreational opportunities and taking into account the protection of marine ecosystems. Optimum yield is the maximum sustainable yield from the fishery, as reduced by any relevant social, economic, or ecological factors;

9. Minimize adverse social and economic effects on recreational and commercial activities to the extent practicable, consistent with ensuring achievement of the other objectives of this plan, and with all applicable laws;

10. Maximize protection of areas identified as essential fish habitat for Atlantic billfish, particularly for critical life stages; and

11. Promote the live release of Atlantic billfish through active outreach and educational programs.

**1.2 Conservation and Management Measures**

The following table compares the preferred alternatives in the draft FMP with the final

management measures taken by NMFS in the final FMP to achieve the management objectives and management concerns described in Section 1.1. All final actions are described in Chapter 3.

| **Preferred Alternative in Draft FMP Amendment** | **Final Action in Final FMP Amendment** |
|---|---|
| Rebuilding Trajectories | |
| Recover overfished billfish stocks to biomass rebuilding target within 10 years. | - Establish a foundation for negotiation with ICCAT for a 10-year rebuilding plan. |
| Size Limits | |
| Increase minimum size limits for Atlantic blue marlin to 99 inches LJFL, 66 inches LJFL for Atlantic white marlin and 63 inches LJFL for west Atlantic sailfish. | Same |
| Bycatch | |
| Not in draft FMP amendment | Catch-and-release recreational fishery management program |
| Time-area closures - Status Quo | Atlantic Billfish Bycatch Reduction Strategy, consisting of management tools included in the HMS FMP, including: proposed expanded time-area closures for greater effectiveness; limited access; reduced quotas; outreach programs; gear restrictions; and buy-back programs. |
| Gear Restrictions:<br>- Allow removal of hook from billfish; and<br>- Prohibit use of multiple hook per bait or lure by recreational billfish anglers | Drop the multiple hook prohibition and retain ability to allow hook removal from Atlantic billfish caught on fishing gear, as long as fish not removed from water. |
| Possession and Retention | |
| Establish a bag limit of 1 billfish per vessel per trip, with authority to adjust, including to zero. | No recreational retention limit |
| Prohibit retention of longbill spearfish | Same |
| Maintain current commercial prohibitions | Same |
| Monitoring, Permitting and Reporting | |

| | |
|---|---|
| Require vessel permits and logbooks, if selected. | Same |
| Require observer on charterboats. | Voluntary observer program for charterboats. If data are not sufficient to satisfy objectives, consider establishing a mandatory observer program. |
| Implement tournament notification requirements. | Same |
| Institute a June 1 to May 31 fishing year. | Same |
| Promote outreach programs | Same |
| Extension of the Management Unit and Management Authority | |
| Extend management unit for Atlantic blue marlin and white marlin to entire Atlantic Ocean and implement regulatory actions under Magnuson-Stevens Act and ATCA for Atlantic marlins. | Same |

**1.3 Management Units**

The 1988 Atlantic Billfish FMP under CFR part 644.2 defines the management unit for Atlantic blue marlin and white marlin as all fish of these species in the waters of the North Atlantic Ocean (including the Gulf of Mexico and Caribbean Sea) north of 5$^{o}$N. For west Atlantic sailfish, fish in the waters of the North and South Atlantic Oceans (including the Gulf of Mexico and Caribbean Sea) west of 30$^{o}$W longitude, and for longbill spearfish, fish in the waters of the entire Atlantic Ocean (including the Gulf of Mexico and Caribbean Sea). The specific management jurisdiction for Atlantic billfish regulations is limited to the U.S. EEZ (with the exception of the sale, trade, or barter provision, which extends to fish caught in the management unit). The Atlantic billfish FMP amendment redefines the management unit for Atlantic blue marlin and Atlantic white marlin as the waters of the entire Atlantic Ocean. The 1988 FMP's management unit definitions of longbill spearfish and sailfish are maintained in the Atlantic billfish FMP amendment.

The extension of the management unit for Atlantic blue marlin and Atlantic white marlin in the entire Atlantic Ocean reflects ICCAT's support of the total Atlantic stock hypothesis for these species (SCRS, 1997). Stock hypotheses for blue and white marlin have included a total Atlantic hypothesis, and a separate north and south Atlantic hypothesis. A latitudinal boundary of 5$^{o}$N has historically been used to separate north and south management units. The two stock hypotheses were reviewed at the Third ICCAT Billfish Workshop, held in Miami, Florida during July, 1996.

Support of a single Atlantic stock of blue marlin was based on a suite of biological studies. The pattern of blue marlin catches in the Atlantic Ocean reveals a continuous distribution of individuals across the 5$^{o}$N latitude line used to delineate north and south Atlantic blue marlin

stocks. No morphometric differences have been noted between blue marlin from the north and south Atlantic. Tag recoveries of 131 Atlantic blue marlin from NMFS tags (Jones and Prince, 1996) and 29 from The Billfish Foundation tags (Peel et al., 1996) indicate both trans-Atlantic (six fish) and trans-equatorial (two fish) movement. The population structure of blue marlin in the Atlantic Ocean was investigated using restriction fragment length polymorphism (RFLP) analysis of mtDNA (Graves and McDowell, 1996). Genetic variation was compared among samples to identify spatial (geographic) and temporal (years) variations. Although analyses of 235 marlin from the United States, Caribbean and Brazilian waters revealed relatively high levels of genetic variation (in comparison to white marlin and sailfish), no significant heterogeneity was identified between samples of blue marlin from the north and south Atlantic. In addition, levels of intraspecific genetic divergence among the Atlantic samples was much lower than those noted between Atlantic and Pacific blue marlin.

Biological information available for Atlantic white marlin evaluated by the 1996 workshop was also consistent with a single Atlantic stock. No morphometric differences have been noted between white marlin from the north and south Atlantic. White marlin catches in the Atlantic Ocean from 1950 to 1994, show a continuous distribution of individuals across the 5$^{o}$N latitude line previously used to delineate north and south Atlantic white marlin stocks (SCRS, 1997). Analysis of white marlin population structure using RFLP analysis of mtDNA (Graves and McDowell, 1996) revealed that distributions of mtDNA haplotypes among collections of white marlin from throughout the Atlantic Ocean were relatively homogenous which is consistent with a single genetic stock. Tag returns from NMFS tags (N=512; Jones and Prince, 1996) and from The Billfish Foundation tags (N=40; Peel et al., 1996) indicate extensive northerly and southerly movements. These include movements from fish tagged off the mid-Atlantic U.S. coast and recovered off the northeast coast of Brazil (including 3 below 5$^{o}$N), as well as trans-Atlantic movement; however, no trans-equatorial movements have been verified. The Workshop also concluded that the available data for sailfish were still consistent with the east/west Atlantic stock hypothesis and did not support any alternative hypotheses.

Extension of the management unit for Atlantic blue marlin and Atlantic white marlin to fish in the entire Atlantic Ocean is consistent with the biology of these species, as outlined above. Implementation of these management measures under both the Magnuson-Stevens Act and ATCA improves NMFS's ability to control Atlantic blue and white marlin fishing mortality in U.S. fisheries throughout the biological range of these overfished stocks.

### 1.4 Scientific Data and Research Needs

One of the required provisions of the Magnuson-Stevens Act for fishery management plans is the assessment and specification of the nature and extent of scientific data and research needed for effective implementation of the plan (see §303(a)(8); Section 1.9). The following research and data needs were identified in the development of this FMP amendment, including comments from the Billfish AP and public on the proposed rule:

Estimation of post-release mortality rate. U.S. commercial fishing vessels are required to release all Atlantic billfish, and recreational anglers release approximately 90 percent of all billfish caught. A quantitative estimate of survival rates of billfish from these encounters with commercial and recreational gear is a key component to fully defining the impacts of size limits

(Section 3.4.1) and bycatch, including the catch-and-release fishery management program (Section 3.5), and releases from pelagic longline gear. Components of post-release investigations for Atlantic blue marlin, Atlantic white marlin, sailfish and longbill spearfish include: handling techniques relative to measuring billfish for compliance with minimum size limits; tagging and hook removal (Section 3.4); effects of length of fight prior to release; and impacts of fishing gear (commercial and recreational), including use of circle hooks, and hooks that deteriorate quickly in a saltwater environment (Section 3.5.3).

Gear configurations and fishing strategies. The dead discard of billfish as bycatch from commercial fishing operations is the greatest source of mortality by the United States currently reported to ICCAT. Preliminary studies have shown that commercial pelagic longline gear may be configured to reduce the incidence of billfish bycatch. In addition, use of different deployment techniques may further reduce Atlantic billfish encounters with commercial fishing gear, including time of day (billfish are mainly day-time feeders), soak time and length of gear. Further research is required to fully describe and quantify possible fishing methodologies that would not impact target catch rates, while reducing billfish bycatch (Section 3.5).

Monitoring of recreational effort and landings. The total universe of recreational vessels (private and charter) targeting Atlantic billfish, the quantity of gear used, and the total landings of these anglers are currently not quantified. Minimal estimates of landings are currently based on billfish tournament reports and the Large Pelagic Survey. This amendment provides preferred management alternatives to improve monitoring (charter vessel logbooks, permits, observers, and tournament registration), but further research is needed to effectively monitor "rare event" recreational landings of species like billfish. Development of an effective self-reporting system would allow for the effective use of a landing tag or other similar tracking mechanisms. A standardized reporting methodology to monitor catch and release rates is also needed to assess the amount and type of billfish mortality in the recreational fishery (Section 3.8).

Stock assessment and projections. The next SCRS stock assessment for Atlantic blue marlin and white marlin will take place during 2000, and for west Atlantic sailfish during 2001, as outlined in the 1998 ICCAT recommendation. A vital research need is an evaluation of the adequacy of the models used in predicting stock recovery rates. The Billfish AP has expressed concern that the models used in this FMP amendment (see Section 3.2) may be overly optimistic.

Life history studies. The life histories of Atlantic billfish are not well defined and research is specifically needed on reproductive parameters (spawning locations, age-specific fecundity and maturity schedules), growth, and natural mortality rates, which will impact rebuilding and stock assessment results (Section 3.1, 3.2, 3.3).

Essential fish habitat: Research needs are provided in Section 4.5. One EFH issue that received many responses during the public comments period for the draft FMP amendment measures was the relationship of Atlantic billfish and sargassum. The South Atlantic FMC is responsible for developing FMP's for the management of sargassum in the Atlantic, and the council is currently doing so

Under § 971(i)(b), ATCA directs the Secretary to develop and implement a comprehensive research and monitoring program to support the conservation and management of Atlantic bluefin tuna and other HMS that shall identify and define the range of stocks of HMS in the

Atlantic Ocean, including Atlantic bluefin tuna; and provide for appropriate participation by nations which are members of the Commission. To support the conservation and management of HMS as required by ATCA, NMFS developed a comprehensive research and monitoring plan. This plan is consistent with the legal requirements of ATCA and with the NMFS Strategic Plan (May 1997) and the Strategic Plan for Fisheries Research (February 1998). It was developed after consultation with relevant Federal and State agencies, scientific and technical experts, commercial and recreational fishermen, and other interested persons, public and private. The objective of this comprehensive research and monitoring plan is to ensure that NMFS science is of the highest quality and that it advances the agency's ability to make sound management decisions.

This research program provides for, but is not limited to:

statistically designed cooperative tagging studies;

genetic and biochemical stock analyses;

- population censuses carried out through aerial surveys of fishing grounds and known migration areas;
- adequate observer coverage and port sampling of commercial and recreational fishing activity;
- collection of comparable real-time data on commercial and recreational catches and landings through the use of permits, logbooks, landings reports for charter operations and fishing tournaments, and programs to provide reliable reporting of the catch by private anglers;
- studies of the life history parameters of Atlantic bluefin tuna and other HMS;
- integration of data from all sources and the preparation of data bases to support management decisions; and
- other research as necessary.

In developing this program, the Secretary must ensure that the personnel and resources of each regional research center have substantial participation in the stock assessments and monitoring of HMS that occur in the region. The plan shall provide for comparable monitoring of all U.S. fishermen, subject to the authority of ATCA, with respect to fishing effort and the species composition of catch and discards. Finally, ATCA specifies that, through the Secretary of State, the Secretary of Commerce shall encourage other member nations to adopt a similar research and monitoring program for Atlantic HMS.

Section 303(a)(8) of the Magnuson-Stevens Act requires NMFS to specify the scientific data needed for effective implementation of this FMP. NMFS continues to focus significant effort on improving catch estimates in several areas, working within NMFS as well as with the constituency.

**1.5 Development of Fishery Resources**

This section of the Atlantic billfish FMP amendment identifies fishery resources associated with Atlantic billfish stocks and their potential for future development by recreational and/or commercial fishermen. Most stocks associated with Atlantic billfish are already utilized and some species are designated as overfished including bluefin tuna, large coastal sharks, and north Atlantic swordfish. Fishery resources associated with Atlantic billfish include those fish caught by offshore recreational fishermen while fishing for billfish, and commercial species caught with commercial pelagic longlines and drift gillnets

Dolphin (mahi mahi), tuna species (yellowfin, bigeye, blackfin, and bonito) and wahoo are often caught while recreational fishing for Atlantic billfish. These species are already part of offshore tournament events. While recreational fishermen attest there is no substitute for the experience of catching an Atlantic billfish, additional regulatory constraints could lead to decreased angler satisfaction and possibly shift angler preferences toward other species. In a study of resident and non-resident participants in Puerto Rican billfish tournaments, based on information collected through a mail questionnaire (Ditton and Clark, 1994), 76 percent of respondents listed blue marlin and the generic category of marlin as their most preferred species to catch. Dolphin was the only other species specifically identified by more than 10 percent of billfish anglers as their primary target species. The second most preferred target species of billfish anglers were dolphin and sailfish. Therefore, potential decreases in angler satisfaction or loss of angler participation in the billfish fishery could potentially impact the dolphin and wahoo recreational fisheries.

Atlantic billfish are caught as commercial bycatch in the pelagic longline and drift gillnet fishery and must be discarded whether dead or alive. The 1995 reported catch by U.S. longline and drift gillnet vessels (Cramer, 1996) listed approximately 38 different species, including Atlantic billfish (Table 1.5.1). The pelagic longline catch, combined by season and area, consisted of several species designated as overfished, including 12 species of large coastal sharks, north Atlantic swordfish, west Atlantic bluefin tuna, bigeye tuna, Atlantic blue marlin, and Atlantic white marlin. These species combined represent approximately 33 percent of the total catch, by number, with swordfish constituting the largest percentage (approximately 27 percent). Yellowfin tuna, dolphin, and blue sharks represent almost fifty percent of the total catch. The current stock status of these species is either fully utilized or unknown. Regardless, increased effort on these species could potentially lead to additional bycatch and subsequent discard mortality of regulated or overfished species.

Yellowfin tuna account for approximately 19 percent (by number) of the 1995 total estimated catch by U.S. pelagic longline and gillnet vessels, and are currently commercially regulated by a minimum size limit and limited entry. There is already a well-developed commercial fishery for this species. Likewise, albacore tuna and bigeye tuna (collectively 10 percent of the 1995 total estimated catch by U.S. pelagic longline and gillnet vessels) are also already well-developed fisheries and fully and/or over-utilized. In addition to their commercial value, they are also often targeted recreationally and included in tournaments. Albacore are currently not approaching an overfished condition. However, yellowfin tuna, may be approaching an overfished condition.

The dolphin fishery has historically been predominately a recreational fishery, with only a limited directed commercial fishery. However, in the past few years, there has been an increase in commercial dolphin catches from longline gear. This increase is attributed to the participation of swordfish and other pelagic longliners who have been adapting their gear to simultaneously target dolphin and focus more effort on dolphin after shark and swordfish quotas are met

(SAFMC, 1997). Commercial landings have increased from about 45,000 pounds per year during 1970 to 1988, to around 200,000 pounds per year from 1989 to 1994, to current annual landings that exceed 450,000 pounds per year (GMFMC, 1996). In 1995, dolphin constituted nearly 16 percent, by number, of the estimated catch by U.S. pelagic longline and driftnet vessels. Dolphin are fast-growing, early-maturing fish that spawn virtually year round and have a relatively short life span of about four years. These life history characteristics make them unlikely candidates for overfishing in the foreseeable future. The primary concern with the commercial fishery for dolphin, particularly longline gear, is local depletion and associated bycatch, which includes Atlantic billfish. Uncontrolled increases in pelagic longlining efforts targeting dolphin could confound the recovery of overfished stocks. In addition to concerns regarding associated overfished populations and bycatch, competition among user groups is also a problem. The relative movement closer to shore in recent years by pelagic longline vessels, reportedly to target dolphin, has commercial entities in direct competition with offshore recreational fishermen and charter vessels for fishing areas and fish (Daniel, 1998). Existing conflicts could be further complicated if, as noted above, billfish anglers increase their activity in the dolphin fishery.

Management measures for dolphin have been considered previously in the public hearing drafts for Amendment 5 and Amendment 8 to the Fishery Management Plan for Coastal Pelagic Resources, managed jointly by the South Atlantic Fishery Management Council (SAFMC) and the Gulf of Mexico Fishery Management Council (GMFMC). In each case, after reviewing public hearing testimony, both Councils have chosen to forego any management for these species due to lack of public support for any specific measures. However, the issue of dolphin management has resurfaced as a result of increased effort for this species in waters off South Carolina and the increases in commercial catch per trip throughout the U.S. South Atlantic area. During the latter part of 1996 and early 1997, the SAFMC received correspondence expressing concern over increased landings of dolphin by longliners and decreased recreational catches off South Carolina. In August 1997, the SAFMC approved a motion to begin development of a fishery management plan for dolphin and wahoo. On September 11, 1997 the SAFMC notified the Regional Administrator requesting designation as the lead Regional Fishery Management Council to prepare an FMP and subsequent amendments for the fisheries for dolphin and wahoo throughout their range in the exclusive economic zone (EEZ) of the Atlantic Ocean, including the Gulf of Mexico and the Caribbean Sea. A Federal Register notice of the SAFMC's request was published on March 9, 1998 (63 FR 11422) with a comment period to end on April 8, 1998. On April 13, 1998 an additional 45 days were added to the comment period at the request of the GMFMC to allow more time to fully consider the issues and impacts and develop and submit more specific and extensive comments on the proposal. A dolphin and wahoo workshop was held on May 6-8, 1998, in Charleston, SC, at which panel members from the Caribbean and Southeast United States discussed the current status of dolphin and wahoo research. The SAFMC has created a Dolphin/Wahoo Committee and Advisory Panel to begin looking at possible management measures.

Blue sharks account for approximately 15 percent, by number, of the 1995 total estimated catch by U.S. longline and gillnet vessels. Despite the large number caught, 98 percent of blue sharks are discarded. The meat of blue sharks is not currently marketed due to its high urea content. In the Pacific, many blue sharks are utilized only for the fin market. After finning the sharks, the remaining carcasses are usually discarded, a practice that is prohibited for Atlantic sharks. Blue sharks can also be marketed for their cartilage, and are used in several medical and food products

in Asia (Rose, 1996). In the Atlantic, however, where the carcasses must be landed in addition to the fins, most blue sharks are discarded because the value of their fins is not worth the space their carcasses take up on a vessel. Besides potential overfishing problems with further development, conflicts between commercial and recreational fishermen would also be a potential problem. Blue sharks are often targeted by tournament anglers in the Mid-Atlantic states and Southern New England, but commercial fishermen generally discard their blue shark catches.

Oilfish are taken in the pelagic longline fishery and represent a little over 2 percent of the total 1995 estimated catch, by number, by U.S. pelagic longline and gillnet vessels. There are two different species reported under this common name. With roughly 40 percent of oilfish caught discarded, they also appear to be underutilized. However, in 1992 the Food and Drug Administration (FDA) issued a recommendation to all U.S. fish dealers to not market oilfish in interstate commerce following several complaints of their purgative properties. Consequently, development of oilfish markets could be very difficult.

In summary, opportunities for development of fishery resources associated with Atlantic billfish are very limited. Even if a related species could sustain increased fishing pressure, effects on already overfished related stocks from bycatch could be very detrimental and further stimulate increasing conflicts between commercial and recreational fishermen.

**Table 1.5.1.** 1995 Estimated Pelagic Longline and Drift Gillnet Reported Catch (Number of fish landed and/or discarded) by Area (Cramer, 1996)

### 1.6 Total Allowable Level of Foreign Fishing

Title II of the Magnuson-Stevens Act establishes the system for the regulation of foreign fishing within the U.S. EEZ. These regulations are published in 50 CFR 611, and provide for the setting of a total allowable level of foreign fishing (TALFF) for specific species based on the portion of the optimum yield that will not be caught by U.S. vessels. At the present time, no TALFF is available for Atlantic billfish , since the United States has the capacity to harvest up to the level of optimum yield of all species subject to this fishery management plan. One objective of the HMS FMP is to match domestic fleet capacity with resource status (and thus, available quota) suggesting that no TALFF is likely to be available during or following rebuilding of overfished HMS stocks.

The 1988 Atlantic Billfish FMP described competition for billfish resources between the U.S. recreational fishery and foreign commercial fisheries. Although the gear conflicts with foreign longline gear within the U.S. EEZ have been resolved since that time, the issue of billfish catches by foreign fisheries and the resultant impact on the status of the stock is still a concern to U.S. fishery managers and all stakeholder groups. The relative biomass estimates for Atlantic blue marlin is near 24 percent of the biomass associated with $B_{MSY}$ (Section 2.1.1), while Atlantic white marlin are at about 23 percent and approximately 62 percent for west Atlantic sailfish. Therefore, any additional mortalities can not be sustained by these Atlantic billfish stocks.

### 1.7 Relationship to International Agreements, Applicable Laws and Other Fishery Management Plans

While the Magnuson-Stevens Act, ATCA, Marine Mammal Protection Act (MMPA), and Endangered Species Act (ESA) guide most basic fishery management, these management programs must also be consistent with several other laws, including the National Environmental Policy Act (NEPA), the Administrative Procedures Act (APA), the Regulatory Flexibility Act (RFA), Executive Order 12866, and the Paperwork Reduction Act (PRA). These applicable laws help ensure that NMFS considers the full range of alternative actions and their expected impacts on the marine environment, living marine resources, and the fishing businesses and communities that could be affected. This section addresses the requirements of these applicable laws. In addition, because they are fished by many nations, Atlantic HMS, including billfish, are also subject to international agreements and their domestic implementing legislation. This section discusses the relationship between management under this FMP amendment and requirements of these statutes. The Final Regulatory Flexibility Analysis (FRFA) (which is required by RFA) and the Regulatory Impact Review (RIR) (which is required by E.O. 12866) are contained in Chapter 5; the Revised Final Supplementary Environmental Impact Statement (FSEIS) (which is required by NEPA) is contained in Chapter 6; and the Social Impact Assessment (SIA)/Fishery Impact Statement (FIS) is contained in Chapter 7.

### 1.7.1 ICCAT and its relationship to ATCA and the Magnuson-Stevens Act

The United States fisheries for Atlantic HMS are managed by NMFS, acting for the Secretary under authority of ATCA and the Magnuson-Stevens Act. Since 1966, ICCAT has been responsible for international conservation and management of tuna and tuna-like fishes. ICCAT's stated objective is to "cooperate in maintaining the populations of these fishes at levels which will permit the maximum sustainable catch for food and other purposes." All of the Atlantic HMS including tunas, swordfish and billfish, with the exception of the shark species, are currently subject to ICCAT management authority. Data collection and research recommendations for sharks are considered by ICCAT's Subcommittee on Bycatch.

The conservation and management recommendations of ICCAT include total allowable catches, sharing arrangements for member countries, minimum size limits, effort controls, time/area closures, trade measures, and monitoring and inspection programs. If the United States accepts an ICCAT recommendation, ATCA provides the Secretary with the necessary authority to implement these binding ICCAT recommendations in the United States. However, no regulation promulgated under ATCA may have the effect of increasing or decreasing any allocation or quota of fish or fishing mortality level to which the United States agreed pursuant to a recommendation of ICCAT.

Similarly, the Magnuson-Stevens Act specifies that NMFS must provide fishing vessels of the United States with a reasonable opportunity to harvest any allocation or quota of an ICCAT species to which the United States has agreed. The FMP or amendment must specify a time period for ending overfishing and rebuilding the fishery that shall:

- be as short as possible, taking into account the status and biology of the stock of fish, the needs of fishing communities, recommendations by international organizations in which

the United States participates, and the interaction of the overfished stock within the marine ecosystem; and

- not exceed ten years, except in cases where the biology of the stock of fish, other environmental conditions, or management measures under an international agreement in which the United States participates dictate otherwise.

Further, the Magnuson-Stevens Act requires NMFS to allocate both overfishing restrictions and recovery benefits fairly and equitably among sectors of the fishery. Fisheries managed under an international agreement must reflect traditional participation of U.S. fishermen in the fishery, relative to other nations. In preparing any FMP or amendment for Atlantic HMS, NMFS must "evaluate the likely effects, if any, of conservation and management measures on participants in the affected fisheries, and minimize, to the extent practicable, any disadvantage to United States fishermen in relation to foreign competitors."

In 1997, ICCAT adopted its first-ever binding recommendation for Atlantic billfish, including a reduction in Atlantic blue marlin and white marlin landings of 25 percent from 1996 levels, starting in 1998, and to be complete in 1999; enhancement of monitoring programs; and promotion of voluntary release of live Atlantic marlin. In 1998, the United States sponsored another ICCAT recommendation directing the SCRS to develop rebuilding scenarios, as appropriate, following the 2000 assessment of Atlantic blue and white marlin and 2001 assessment of eastern and west Atlantic sailfish resources. The last SCRS assessment for Atlantic marlin was in 1996 and in 1992 for west Atlantic sailfish. These conservation and management recommendations are presented in Appendix B. ATCA provided the Secretary of Commerce with the necessary authority to implement these binding ICCAT recommendations in the United States.

### 1.7.2 The United Nations Agreement on Straddling Fish Stocks and HMS

On December 4, 1995, the United States signed the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea (U.N. Agreement) relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. The U.N. Agreement has its origins in Agenda 21, the detailed plan of action adopted by the 1992 U.N. Conference on Environment and Development. It builds upon certain fisheries-related provisions of the 1982 U.N. Convention on the Law of the Sea, and reaffirms the central role of the Convention as the accepted foundation and framework for this critical body of international law. While all States have the right to engage in fishing on the high seas, the Convention qualifies this right with the duty to conserve high sea resources and to cooperate with other States in conservation efforts. In fulfilment of these obligations, multilateral fishery agreements and organizations such as ICCAT have been established to conserve and manage high sea fisheries.

The U.N. Agreement is designed to strengthen and make more specific the provisions of the Convention, and back the provisions with effective enforcement techniques and compulsory dispute settlement. This should give the international community mechanisms to reverse overfishing trends and create an opportunity to ensure sustainable marine fisheries. While the Agreement recognizes that most of the actual conservation and management work for highly

migratory fish stocks must be carried out through regional fisheries organizations (e.g., ICCAT), it recommends some specific measures to strengthen the operations of such organizations. For example, Article 8(3) requires any State whose fishermen wish to harvest a stock that is governed by such an organization either to join or to agree to apply the conservation and management measures established by the organization. This Article, if properly implemented, could greatly reduce the problems associated with "non-party" fishing.

The U.N. Agreement sets forth general principles for fishery conservation and management, including obligations to:

- ensure the long-term sustainability of these stocks;
    - take measures that are based on the best scientific information available;
    - assess relevant environmental impacts;
    - adopt conservation and management measures for other stocks belonging to the same ecosystem;
    - minimize catch of non-target species; and
    - take measures to prevent or eliminate overfishing and excess fishing capacity.

### 1.7.3 Other Fishery Management Plans

The Atlantic billfish FMP amendment may effect management of other fisheries managed by an FMP under one or more of the five Fishery Management Councils with authority in the Atlantic Ocean. A reduction in recreational effort directed toward Atlantic billfish may result in increased activity targeting other pelagic species (e.g., dolphin, king mackerel, wahoo). Conversely, management of the dolphin fishery and dogfish fishery may affect the management of HMS, including Atlantic billfish. The dolphin fishery is currently managed under the Coastal Migratory Pelagics of the Gulf of Mexico and South Atlantic FMP, prepared jointly by the South Atlantic and Gulf of Mexico Fishery Management Councils. The dolphin fishery may be directly affected by final management action of this FMP amendment that result in a shift in recreational efforts, further increasing recreational participation in the dolphin and other coastal pelagic fisheries. The SAFMC is currently working on a separate fishery management plan for dolphin and wahoo (Section 1.5). Spiny dogfish and smooth dogfish are the subject of a management program under development by the New England and Mid-Atlantic Fishery Management Councils. On January 1998, the 26$^{th}$Northeast Regional Stock Assessment Workshop determined that the spiny dogfish stock is over-exploited based on evidence that mean lengths of spiny dogfish are declining rapidly, minimum biomass estimates of mature females have decreased by nearly 50 percent since 1990, and fishing mortality rates are well above sustainable levels. On April 3, 1998, NMFS notified the Mid-Atlantic and New England Fishery Management Councils, which share joint management responsibilities for spiny dogfish, that the fishery was overfished, thus initiating the one-year time frame for development of an FMP, as required under the Magnuson-Stevens Act. NMFS also published notice that spiny dogfish were being added to the list of overfished fisheries on April 10, 1998 (63 FR 17820).

### 1.7.4 Relationship of this FMP to Existing HMS Management

The HMS FMP incorporates all existing management measures for Atlantic tunas and north Atlantic swordfish that have been issued previously under the authority of ATCA. It also incorporates all existing management measures for north Atlantic swordfish and Atlantic sharks that have been issued previously under the authority of the Magnuson-Stevens Act. The HMS FMP replaces the existing FMPs for Atlantic swordfish and sharks and establishes an FMP for Atlantic tunas. Notable modifications or additions to the existing management program are discussed in the HMS FMP, along with a discussion of all existing management measures retained by the plan and any modifications.

### 1.7.5 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act (PRA) is to limit the paperwork burden on the public and constituents. The Director of the Office of Management and Budget has the authority to manage information collection and record keeping requirements in order to reduce paperwork burdens. This authority encompasses the establishment of guidelines and policies and the approval of information collection requests.

This FMP amendment contains collection-of-information requirements subject to PRA. Fishing tournament registration and selective reporting in §644.5 is approved by OMB under control number 0648-0323 and is estimated at 10 minutes per report. This FMP amendment also includes a new collection-of-information requirement, in conjunction with the HMS FMP, for permits and logbook submissions from charter/headboats targeting Atlantic HMS and other highly migratory species. PRA packages for all requests for data outlined in this FMP have been submitted to OMB for approval as required by law.

### 1.7.6 Coastal Zone Management

Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451) requires that all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. The Eastern coastal states and the U.S. territories of Puerto Rico and the U.S. Virgin Islands all have programs approved by the Secretary of Commerce. Based upon the assessment of this amendment's impacts, the final actions in this FMP amendment are an improvement to Federal regulations governing Atlantic billfish, and is consistent to the maximum extent practicable with the approved coastal zone management programs of affected states in the management area. This determination has been submitted to the responsible state agencies administering approved Coastal Zone Management programs for review under Section 307 of the CZMA.

### 1.7.7 Endangered Species Act

The ESA provides for the protection and conservation of threatened and endangered species of fish, wildlife, and plants. Section 7(a)(1) of the ESA requires Federal agencies to use their

authorities to conserve endangered or threatened species. Furthermore, section 7(a)(2) requires Federal agencies to ensure that any action authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of an endangered or threatened species, or result in the destruction or adverse modification of critical habitat of a listed species. Of the listed endangered and threatened species under NMFS jurisdiction that occur in the Atlantic billfish management unit, there are several species caught as bycatch in the pelagic longline fishery. These include the following sea turtle species: green, hawksbill, Kemp's (Atlantic) ridley, leatherback, and loggerhead. A section 7 consultation was recently completed to assess the impacts of this FMP amendment, with a finding of no impacts on endangered species.

### 1.7.8 Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 (MMPA) is the principal Federal legislation that guides marine mammal species protection and conservation policy. The 1994 Amendments to the MMPA introduced substantial changes to the provisions of the MMPA, including the establishment of a new regime governing interactions between marine mammals and commercial fisheries.

The 1994 Amendments require that NMFS publish, at least annually, a list of fisheries that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals in each fishery. NMFS classifies each U.S. fishery according to whether it has a frequent (Category I), occasional (Category II), or a remote likelihood of (Category III) incidental mortality and serious injury to marine mammals. The categorization of a fishery in the List of Fisheries determines whether the fishery is subject to certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. Fishers participating in Category I and II fisheries are required to comply with any applicable take reduction plans. Rod and reel gear is listed as Category 3.

### 1.7.9 Federalism

This FMP does not contain policies with federalism implications sufficient to warrant the preparation of an assessment under E.O. 12612. The affected states have been closely involved in developing the management measures through their participation in the HMS Advisory Panel. The states were invited specifically to the February 1999 joint Advisory Panel meeting to discuss state and Federal concerns.

### 1.7.10 Executive Order 12866 (E.O. 12866)

Based on the definition of "significant regulatory action" in Section 3(f) of E.O. 12866, NMFS concludes that the final actions in the Atlantic billfish FMP amendment are not significant. The Office of Information and Regulatory Affairs, Office of Management and Budget, will be

notified concerning the final FMP amendment and the agency's determination that this FMP amendment is not significant.

### 1.7.11 Executive Order 12962 (E.O. 12962)

On June 7, 1995, the President signed E.O. 12963 - Recreational Fisheries to improve the quality, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities nationwide. This E.O. is of particular relevance to the Atlantic billfish FMP amendment since the 1988 FMP reserved the Atlantic billfish resource within the U.S. EEZ for recreational anglers. Measures contained within the FMP amendment meet Section 1 requirements of E.O. 12962 by implementing actions to rebuild overfished Atlantic billfish stocks toward improving the sustainability of recreational fishing for U.S. anglers, and developing outreach programs designed to enhance conservation measures.

### 1.7.12 Applicable State Laws and Policies

Atlantic billfish federal regulations currently govern conservation and management measures of billfish off the Atlantic, Gulf of Mexico, and Caribbean coastal states, and prohibit the possession onboard a commercial vessel or sale in any state of a billfish harvested from its management unit. Federal regulations currently apply to Atlantic billfish shoreward of the outer boundary of the EEZ regardless where caught; however, under the final actions for Section 3.9, regulations will be extended to U.S. citizens and vessels operating throughout the Atlantic Ocean by expanding the management unit definitions and implementing regulations under both the Magnuson-Stevens Act and ATCA.

Several states have billfish regulations that are more restrictive than current federal regulations, including:

Florida: Bag limit of 1 fish per person per day (aggregate);

Georgia: Bag limit of 1 of each species of Atlantic billfish per person per day, including Atlantic blue marlin, Atlantic white marlin, and sailfish;

Massachusetts: Bag limit of 1 of each species of Atlantic billfish per person per trip, including Atlantic blue marlin, Atlantic white marlin, and sailfish;

North Carolina: Bag limit of 1 of each species of Atlantic billfish per person per trip, including Atlantic blue marlin, Atlantic white marlin, and sailfish; and

Texas: Minimum size limits of 114 inches TL for blue marlin, 81 inches TL for white marlin and 76 inches TL for west Atlantic sailfish.

## 1.8 What's in the Atlantic Billfish FMP Amendment

This final Atlantic billfish FMP amendment is arranged differently than the draft Amendment.

The first chapter of the document includes an introduction that provides background information on the history of Atlantic billfish management, issues and problems, objectives, summary of management measures of the final FMP amendment, research needs, and association with other laws, international agreements and FMPs. Chapter 2 contains information on the status of the stocks, aspects of the international and domestic Atlantic billfish fisheries, social and economic components of Atlantic billfish fisheries, a description of gear types, the permitting and reporting regime before implementation of this FMP amendment, and existing time/area closures. Chapter 3 contains management measures designed to rebuild overfished stocks and maintain the stocks that are rebuilt, along with the frameworking procedure. Chapter 4 contains the Atlantic billfish essential fishery habitat information, including information on habitat, Atlantic billfish life histories, threats to essential fishery habitat, and research needs. Chapter 5 includes the Regulatory Impact Review (RIR) and the Final Regulatory Flexibility Analysis (FRFA). The Revised Final Supplemental Environmental Impact Statement (FSEIS) is found in Chapter 6. The Social Impact Assessment (SIA) and Fishery Impact Statement are contained in final chapter. The final FMP amendment also contains appendices in support of information provided in various chapters.

### 1.9 Relationship of the Atlantic Billfish FMP to the Magnuson-Stevens Act Requirements

The Magnuson-Stevens Act establishes the authority and responsibility of the Secretary of Commerce to develop fishery management plans and subsequent amendments for Atlantic HMS. Magnuson-Stevens Act requires NMFS to allocate both overfishing restrictions and recovery benefits fairly and equitably among sectors of the fishery. As discussed previously, fisheries managed under an international agreement, such as HMS, must reflect traditional participation in the fishery, relative to other nations, by fishermen of the United States. In preparing any FMP or amendment for Atlantic HMS, NMFS must "evaluate the likely effects, if any, of conservation and management measures on participants in the affected fisheries, and minimize, to the extent practicable, any disadvantage to United States fishermen in relation to foreign competitors."

The content of this Atlantic billfish FMP amendment is consistent with the required provisions of section 303(a) and other provisions of the Magnuson-Stevens Act, including the assistance of the Atlantic billfish Advisory Panel in its development. This section lists the required provisions for a FMP.

SEC. 303. CONTENTS OF FISHERY MANAGEMENT PLANS 16 U.S.C. 1853
95-354, 99-659, 101-627, 104-297

(a) REQUIRED PROVISIONS.--Any fishery management plan which is prepared by any Council, or by the Secretary, with respect to any fishery, shall--

(1) contain the conservation and management measures, applicable to foreign fishing and fishing by vessels of the United States, which are--

(A) necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term

(B) described in this subsection or subsection (b), or both; and

consistent with the national standards, the other provisions of this Act, regulations implementing recommendations by international organizations in which the United States

applicable law;

(2)
involved, the type and quantity of fishing gear used, the species of fish involved and their location, the cost likely to be incurred in management, actual and potential revenues from the

Indian treaty fishing rights, if any;

(3)
yield and optimum yield from, the fishery, and include a summary of the information utilized in making such specification;

assess and specify--

(A)
will harvest the optimum yield specified under paragraph (3),

(B)
vessels of the United States and can be made available for foreign fishing, and

(C)
process that portion of such optimum yield that will be harvested by fishing vessels of the United States;

specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, and charter fishing in the fishery, including, but not limited to,

fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, and the estimated processing capacity of, and the actual processing capacity utilized by, United

(6) consider and provide for temporary adjustments, after consultation with the Coast Guard and

harvesting because of weather or other ocean conditions affecting the safe conduct of the fishery; except that the adjustment shall not adversely affect conservation efforts in other fisheries or

(7) describe and identify EFH for the fishery based on the guidelines established by the Secretary

caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat;

in the case of a fishery management plan that, after January 1, 1991, is submitted to the

Secretary for review under section 304(a) (including any plan for which an amendment is submitted to the Secretary for such review) or is prepared by the Secretary, assess and specify the nature and extent of scientific data which is needed for effective implementation of the plan;

(9) include a fishery impact statement for the plan or amendment (in the case of a plan or amendment thereto submitted to or prepared by the Secretary after October 1, 1990) which shall assess, specify, and describe the likely effects, if any, of the conservation and management measures on-

(A) participants in the fisheries and fishing communities affected by the plan or amendment; and

(B) participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants;

(10) specify objective and measurable criteria for identifying when the fishery to which the plan applies is overfished (with an analysis of how the criteria were determined and the relationship of the criteria to the reproductive potential of stocks of fish in that fishery) and, in the case of a fishery which the Council or the Secretary has determined is approaching an overfished condition or is overfished, contain conservation and management measures to prevent overfishing or end overfishing and rebuild the fishery;

(11) establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority-

(A) minimize bycatch; and

(B) minimize the mortality of bycatch which cannot be avoided;

(12) assess the type and amount of fish caught and released alive during recreational fishing under catch and release fishery management programs and the mortality of such fish, and include conservation and management measures that, to the extent practicable, minimize mortality and ensure the extended survival of such fish;

(13) include a description of the commercial, recreational, and charter fishing sectors which participate in the fishery and, to the extent practicable, quantify trends in landings of the managed fishery resource by the commercial, recreational, and charter fishing sectors; and

(14) to the extent that rebuilding plans or other conservation and management measures which reduce the overall harvest in a fishery are necessary, allocate any harvest restrictions or recovery benefits fairly and equitably among the commercial, recreational, and charter fishing sectors in the fishery.

97-453, 99-659, 101-627, 102-251, 104-297

(b) DISCRETIONARY PROVISIONS.--Any fishery management plan which is prepared by any Council, or by the Secretary, with respect to any fishery, may--

(1) require a permit to be obtained from, and fees to be paid to, the Secretary, with respect to--

(A) any fishing vessel of the United States fishing, or wishing to fish, in the exclusive economic zone [or special areas,]* or for anadromous species or Continental Shelf fishery resources beyond such zone [or areas]*;

(B) the operator of any such vessel; or

(C) any United States fish processor who first receives fish that are subject to the plan;

(2) designate zones where, and periods when, fishing shall be limited, or shall not be permitted, or shall be permitted only by specified types of fishing vessels or with specified types and quantities of fishing gear;

(3) establish specified limitations which are necessary and appropriate for the conservation and management of the fishery on the-

(A) catch of fish (based on area, species, size, number, weight, sex, bycatch, total biomass, or other factors);

(B) sale of fish caught during commercial, recreational, or charter fishing, consistent with any applicable Federal and State safety and quality requirements; and

(C) transshipment or transportation of fish or fish products under permits issued pursuant to section 204;

(4) prohibit, limit, condition, or require the use of specified types and quantities of fishing gear, fishing vessels, or equipment for such vessels, including devices which may be required to facilitate enforcement of the provisions of this Act;

(5) incorporate (consistent with the national standards, the other provisions of this Act, and any other applicable law) the relevant fishery conservation and management measures of the coastal States nearest to the fishery;

(6) establish a limited access system for the fishery in order to achieve optimum yield if, in developing such system, the Council and the Secretary take into account-

(A) present participation in the fishery,

(B) historical fishing practices in, and dependence on, the fishery,

(C) the economics of the fishery,

(D) the capability of fishing vessels used in the fishery to engage in other fisheries,

(E) the cultural and social framework relevant to the fishery and any affected fishing communities, and

(F) any other relevant considerations;

(7) require fish processors who first receive fish that are subject to the plan to submit data (other than economic data) which are necessary for the conservation and management of the fishery;

(8) require that one or more observers be carried on board a vessel of the United States engaged in fishing for species that are subject to the plan, for the purpose of collecting data necessary for the conservation and management of the fishery; except that such a vessel shall not be required to carry an observer on board if the facilities of the vessel for the quartering of an observer, or for carrying out observer functions, are so inadequate or unsafe that the health or safety of the observer or the safe operation of the vessel would be jeopardized;

(9) assess and specify the effect which the conservation and management measures of the plan will have on the stocks of naturally spawning anadromous fish in the region;

(10) include, consistent with the other provisions of this Act, conservation and management measures that provide harvest incentives for participants within each gear group to employ fishing practices that result in lower levels of bycatch or in lower levels of the mortality of bycatch;

(11) reserve a portion of the allowable biological catch of the fishery for use in scientific research; and

(12) prescribe such other measures, requirements, or conditions and restrictions as are determined to be necessary and appropriate for the conservation and management of the fishery

**1.10 List of Preparers**

The development of this FMP involved input from numerous government agencies and constituent groups, including: the NMFS Southeast Fisheries Science Center; the NMFS Northeast Fisheries Science Center; the NMFS Northeast Regional Office; the NMFS Southeast Regional Office; NMFS Headquarters Staff (F/SF; F/PR; F/HC; F/ST; F/PA); and the U.S. ICCAT Advisory Committee. Staff members of the Highly Migratory Species Management Division, Office of Sustainable Fisheries (OSF), National Marine Fisheries Service involved in preparing this FMP amendment include:

| | | |
|---|---|---|
| Eric Barber | Karyl Brewster-Geisz | Kathy Goldsmith |
| Rachel Husted | Sari Kiraly | Jenny Lee |
| Rebecca Lent | Brad McHale | Sarah McLaughlin |
| Steve Meyers | Mark Murray-Brown | Ron Rinaldo |
| Christopher Rogers | Margo Schulze | Pat Scida |
| Jeron Stannard | Jill Stevenson | Buck Sutter |
| Maria Uitterhoeve | Pat Wilbert | |
| Valuable assistance was provided by staff of other OSF and NMFS offices. Staff members of these other offices who were greatly involved in the development of this FMP are: | | |

| | | |
|---|---|---|
| Anna | George Bell | Guy |
| Donna Brewer | Barbara Comstock | Enric Cortes |
| Jean Cramer | Otha Easley | Mark Farber |
| Mike Fraser | Ron Hill | Herb Kumpf |
| Catherine Lewers | Pamela Mace | Gary Matlock |
| Mariam McCall | John Poffenberger | Joe Powers |
| Eric Prince | Paul Raymond | William Richards |
| Rick Roberts | Gerry Scott | Helen Troupos |
| Tracy Thompson | Doris Tucker | Steve Turner |
| | Kathy Wang | |
| In addition, a number of NMFS contractors and Sea Grant fellows helped develop and create this FMP including: | | |
| Perry Allen | Lee Benaka | Liz Lauck |
| Monica Lara | Alicon Morgan | Chris Perle |
| Dan Utech | Robyn Wingrove | Doug Wilson |

Besides NMFS employees and contractors, NMFS consulted with and received comments from many groups and agencies. NMFS would like to thank the participants of the HMS AP, the Billfish AP, and the Longline AP for their assistance both during the development phase and during the comment phase in preparing this FMP. In addition, NMFS received valuable support in the development of this FMP from commercial and recreational fishermen who have provided NMFS with valuable comments, information about the fisheries, and data in the form of mandatory logbooks, voluntary economic information, and observer information for many years. Comments received from the environmental community and other concerned constituents were also helpful in the development of the alternatives considered in this FMP.

### 1.11 List of Agencies and Organizations Consulted

As part of the HMS management process, "consulting parties" participate in the preparation and evaluation of draft FMP amendment documents. The consulting parties include the U.S. Department of State (DOS); the U.S. Coast Guard (USCG); the New England Fishery

Management Council; the Gulf of Mexico Fishery Management Council; the South Atlantic Fishery Management Council; the U.S. ICCAT Advisory Committee; the ICCAT
Magnuson-Stevens Act. Copies of

period. NMFS carefully considered all comments received from the public and the consulting parties before developing the final actions in this FMP amendment.

Advisory Committee) are represented on the APs, providing them the opportunity to comment on

Billfish AP met seven times during development of this document. The AP is composed of representatives of the commercial and recreational fisheries, the commercial trade sector, the headboat sector, conservation organizations, academic institutions, regional fishery management councils, state fishery management agencies, and the U.S. ICCAT Advisory Billfish AP are listed in Appendix A. All AP meetings are open to the public and each meeting includes a public comment period.

independent reviews of the species information in the essential fish habitat chapter for accuracy, clarity and completeness: Drs. E.D. D.P. de Sylva, and B. B.

**Chapter 1 References**


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1. The Magnuson-Stevens Act, at 16 U.S.C. 1802(14), defines the term "highly migratory species" as tuna species, marlin (Tetrapturus spp. and Makaira spp.), oceanic sharks, sailfishes (Istiophorus spp.), and swordfish (Xiphias gladius). Further, the Magnuson-Stevens Act, at 16 U.S.C. 1802(27), defines the term "tuna species" as albacore tuna (Thunnus alalunga), bigeye tuna (Thunnus obesus), bluefin tuna (Thunnus thynnus), skipjack tuna (Katsuwonus pelamis), and yellowfin tuna (Thunnus albacares).