

ENVIRONMENTAL ASSESSMENT,
REGULATORY IMPACT REVIEW,
AND
INITIAL REGULATORY FLEXIBILITY ANALYSIS

FOR A PROPOSED RULE

TO

IMPLEMENT MANAGEMENT MEASURES IN THE RECREATIONAL ATLANTIC
BILLFISH FISHERY CONSISTENT WITH ICCAT RECOMMENDATIONS
AND TO
CLARIFY RECREATIONAL NON-TOURNAMENT REPORTING REQUIREMENTS

September 2003

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

FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT

The Highly Migratory Species (HMS) Management Division of the Office of Sustainable Fisheries submits the attached Environmental Assessment (EA) for a proposed rule to implement management measures in the recreational Atlantic blue and white marlin fishery consistent with ICCAT recommendations and to achieve consistent recreational reporting requirements for Atlantic HMS for Secretarial review under the procedures of the Magnuson-Stevens Fishery Conservation and Management Act. This EA was developed as an integrated document that includes a Regulatory Impact Review (RIR) and an Initial Regulatory Flexibility Analysis (IRFA). Copies of the EA and RIR/IRFA are available at the following address:

Highly Migratory Species Management Division, F/SF1
National Marine Fisheries Service
1315 East West Highway
Silver Spring, MD 20910
(301) 713-2347

or

<http://www.nmfs.noaa.gov/sfa/hmspg.html>

The proposed action would implement the following measures:

- An annual recreational landing limit of 250 Atlantic blue and white marlin, combined, with a provision allowing for underages/overages of the limit to be added to/deducted from a subsequent year's landing limit
- Consistent recreational reporting requirements for Atlantic Highly Migratory Species

Having reviewed the EA, I have determined that this action would not have a significant impact on the quality of the human environment, thus preparation of an EIS on the action is not required by Section 102(2)(c) of the National Environmental Policy Act or its implementing regulations.

DRAFT

William T. Hogarth, Ph.D.
Assistant Administrator for Fisheries, NOAA

Date

Proposed Rule to Implement Management Measures in the Recreational Atlantic Billfish Fishery Consistent with ICCAT Recommendations and to Implement Consistent Recreational Reporting Requirements for Atlantic HMS

Proposed Actions: Establish an annual domestic landing limit of 250 Atlantic white and blue marlin, combined, and attendant compliance mechanisms; establish a mechanism to carry forward overages/underages of the marlin landing limit to subsequent years; and, achieve consistent recreational reporting requirements for Atlantic HMS.

Type of Statement: Environmental Assessment, Regulatory Impact Review, Initial Regulatory Flexibility Analysis

Lead Agency: National Marine Fisheries Service (NOAA Fisheries)

For Further Information: Russell Dunn/Richard A. Pearson
Highly Migratory Species Management Division
Office of Sustainable Fisheries (F/SF1)
National Marine Fisheries Service
Southeast Regional Office
9721 Executive Drive North
St. Petersburg, FL 33702

Abstract: ICCAT Recommendations 00-13 and 02-13 require that the United States limit total annual landings of Atlantic blue and white marlin to 250 fish, combined, through 2005. In addition, ICCAT Recommendation 00-14 allows for carry-over of underharvest/overharvest to subsequent management periods. This action proposes to codify an annual landings limit of 250 Atlantic blue and white marlin combined, and to implement a provision to carry forward overages/underages of the Atlantic blue and white marlin landing limit into subsequent fishing years, consistent with ICCAT recommendations. To stay in compliance with the landing limit, and to maximize allowable landings, NOAA Fisheries proposes to increase the legal recreational minimum size of Atlantic blue and white marlin for the remainder of a fishing year when 80 percent of the landing limit is projected to be achieved and, if the landing limit is attained, allow only catch and release fishing for these species for the remainder of the fishing year.

In addition, this action proposes to achieve consistent recreational reporting requirements for Atlantic HMS by clarifying the regulations to specify that the owner of a vessel permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category is required to report recreational landings of Atlantic bluefin tuna, and non-tournament landings of billfish and swordfish. Sections of the current regulations indicate that anglers are responsible for reporting non-tournament recreational landings of marlin, sailfish and swordfish, whereas other HMS regulations require the vessel owner to report.

TABLE OF CONTENTS

FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT	i
ABSTRACT	ii
TABLE OF CONTENTS	iii
1.0 PURPOSE AND NEED FOR ACTION	1
1.1 Management History	1
1.2 Need for Action and Objectives	3
2.0 SUMMARY OF MANAGEMENT ALTERNATIVES	4
2.1 <u>Issue 1</u> - Implement ICCAT Recommendations 00-13 and 00-14 to Limit Annual U.S. Recreational Landings to 250 Atlantic Blue and White Marlin, Combined, with an Annual Carryover Provision for Landings Above/Below the Marlin Landing Limit.	4
2.1.1 <u>Alternative 1a</u> - No-action alternative	4
2.1.2 <u>Alternative 1b</u>	4
2.1.3 <u>Alternative 1c</u>	5
2.1.4 <u>Alternative 1d</u> - (PREFERRED ALTERNATIVE)	5
2.1.5 <u>Alternative 1e</u>	5
2.2 <u>Issue 2</u> - Clarify and Make Consistent Recreational Reporting Requirements by Specifying that Vessel Owners, Rather Than Anglers, Are Required to Report Non-Tournament Recreational landings of HMS.	5
2.2.1 <u>Alternative 2a</u> - No-action alternative	5
2.2.2 <u>Alternative 2b</u> - (PREFERRED ALTERNATIVE)	6
3.0 DESCRIPTION OF AFFECTED ENVIRONMENT	6
3.1 Status of Atlantic Marlin Stocks	6
3.2 Fishery Participants and Gear Types	7
3.3 Habitat (Including Essential Fish Habitat (EFH))	11
3.4 Protected Species under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA)	13
4.0 ENVIRONMENTAL CONSEQUENCES OF MANAGEMENT ALTERNATIVES ..	14
4.1 Implement ICCAT Recommendations to Limit Annual U.S. Recreational Landings to 250 Atlantic Blue and White Marlin, Combined, with an Annual Carryover Provision for Landings Above/Below the Marlin Landing limit	14
4.1.1 Ecological Impacts	17
4.1.2 Economic Impacts	19
4.1.3 Social Impacts	21
4.1.4 Conclusion	23

4.2	Clarify, and Make Consistent, Recreational Reporting Requirements by Specifying that Vessel Owners, Rather Than Anglers, Are Required to Report Non-Tournament Recreational Landings of HMS	24
4.2.1	Ecological, Economic, and Social Impacts Associated With Alternative 2a (No Action Alternative)	24
4.2.2	Ecological, Economic, and Social Impacts Associated With Alternative 2b (Preferred Alternative)	25
4.3	Impacts on Essential Fish Habitat	25
4.4	Impacts on Protected Species	26
4.5	Environmental Justice Concerns	26
4.6	Coastal Zone Management Act Concerns	26
4.7	Comparison of Alternatives	27
4.8	Cumulative Impacts	28
5.0	MITIGATION AND UNAVOIDABLE ADVERSE IMPACTS	28
5.1	Mitigating Measures	28
5.2	Unavoidable Adverse Impacts	30
5.3	Irreversible and Irrecoverable Commitment of Resources	30
6.0	ECONOMIC EVALUATION	30
6.1	Implement ICCAT Recommendations to Limit Annual U.S. Recreational Landings to 250 Atlantic Blue and White Marlin, Combined, with an Annual Carryover Provision for Landings Above/Below the Landing limit	30
6.1.1	Number of Fishing and Dealer Permit Holders	30
6.1.2	Gross Revenues of Fishermen	31
6.1.3	Variable Costs and Net Revenues to Fishermen	38
6.1.4	Expected Economic Impact of the Alternatives	39
6.2	Clarify, and Make Consistent, Recreational Reporting Requirements by Specifying that Vessel Owners, Rather Than Anglers, Are Required to Report Non-Tournament Recreational Landings of HMS	40
6.2.	Expected Economic Impacts of the Alternatives	46
7.0	REGULATORY IMPACT REVIEW	40
7.1	Description of the Management Objectives	40
7.2	Description of the Fishery	41
7.3	Statement of the Problem	41
7.4	Description of Management Alternatives	41
7.5	Economic Analysis of Expected Effects of Each Alternative Relative to the Baseline	41
7.6	Conclusion	41
8.0	INITIAL REGULATORY FLEXIBILITY ANALYSIS	43
8.1	Description of the Reasons Why the Actions are Being Considered	43
8.2	Statement of the Objectives of, and Legal Basis for, the Proposed Rule	43
8.3	Description and Estimate of the Number of Small Entities to which the Proposed	

	Rule Will Apply	44
8.4	Description of the Projected Reporting, Record-Keeping, and Other Compliance Requirements of the Proposed Rule	44
8.5	Identification of all Relevant Federal Rules which may Duplicate, Overlap, or Conflict with the Proposed Rule	44
8.6	Description of any Significant Alternatives to the Proposed Rule that would Accomplish the Stated Objectives of the Applicable Statutes, and that Minimize any Significant Economic Impact of the Proposed Rule on Small Entities	44
9.0	COMMUNITY PROFILES	47
10.0	OTHER CONSIDERATIONS	48
10.1	National Standards	48
10.2	Paperwork Reduction Act	49
10.3	State Jurisdiction Pertaining to Atlantic Tunas Convention Act	49
11.0	CONSIDERATION OF NOAA AND CEQ SIGNIFICANT IMPACT CRITERIA ...	49
12.0	LIST OF PREPARERS	52
13.0	LIST OF AGENCIES AND PERSONS CONSULTED	52
14.0	REFERENCES	53
15.0	APPENDIX: 2000 ICCAT RECOMMENDATIONS FOR ATLANTIC BLUE AND WHITE MARLIN	55

1.0 PURPOSE AND NEED FOR ACTION

1.1 Management History

Atlantic blue marlin (*Makaira nigricans*) and white marlin (*Tetrapturus albidus*), as well as Atlantic sailfish (*Istiophorus platypterus*), have historically supported important recreational fisheries along the Atlantic coast of the United States, the Gulf of Mexico and the Caribbean Sea. The first reported marlin landing was in 1903. The United States first initiated efforts to reduce fishing mortality on Atlantic billfish in 1988 with the implementation of the Atlantic Billfish Fishery Management Plan (Billfish FMP) (NMFS 1988), which required the release of all Atlantic billfish, whether alive or dead, caught by commercial fishing operations inside the U.S. Exclusive Economic Zone (EEZ). Regulations were also implemented through the Billfish FMP to prohibit the sale of Atlantic billfish from their management unit, and to prohibit the possession of billfish onboard commercial fishing vessels inside the U.S. EEZ. The 1988 Billfish FMP additionally implemented a recreational minimum size limit to reduce Atlantic billfish mortality.

In 1997, NOAA Fisheries identified Atlantic blue marlin, Atlantic white marlin and North Atlantic swordfish as overfished. The same year, the International Commission for the Conservation of Atlantic Tunas (ICCAT), of which the United States is a contracting party, adopted a recommendation to reduce Atlantic blue and white marlin landings by at least 25 percent from 1996 levels starting in 1998, and to be accomplished by the end of 1999. A 1998 ICCAT recommendation extended the effective period of the landings reduction through 2000. The Secretary of Commerce has the authority, and the obligation under the Atlantic Tunas Convention Act (ATCA), to promulgate regulations that may be necessary and appropriate to implement ICCAT recommendations.

Amendment One to the Atlantic Billfish FMP (Billfish Amendment) (NMFS 1999a) was developed in 1999 to meet the mandates of the Magnuson-Stevens Act for overfished fishery resources and to comply with ICCAT recommendations. Prior to the beginning of the 1999 fishing year (June 1, 1999 - May 31, 2000), NOAA Fisheries increased recreational minimum sizes of Atlantic blue and white marlin and sailfish to 99 inches, 66 inches, and 63 inches, respectively, in order to reduce domestic landings by the requisite 25 percent (May 28, 1999, 64 FR 29090). The Billfish Amendment is implemented by regulations at 50 CFR part 635, and is issued under the authority of the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act), and the ATCA.

In November 2000, ICCAT adopted additional recommendations regarding Atlantic billfish, including a two-phased rebuilding plan for Atlantic blue and white marlin (see Appendix). Phase I of the plan required that countries (other than the United States) capturing marlins in commercial fisheries reduce white marlin landings from pelagic longline and purse seine fisheries by 67 percent and blue marlin landings by 50 percent from 1999 levels. ICCAT adopted the marlin rebuilding strategy based on the most recent stock assessments completed by ICCAT's Standing Committee for Research and Statistics (SCRS) which indicated that marlin stocks continued to be severely overfished. ICCAT Recommendation 00-13 also recommended

that the United States restrict annual landings by U.S. recreational fishermen to 250 Atlantic blue and white marlin, combined, for 2001 and 2002 (Phase I). This recommendation was subsequently extended through 2005. It has not yet been codified and is the subject of this rulemaking.

In September 2001, NOAA Fisheries received a petition filed pursuant to the Endangered Species Act (ESA) to list white marlin as endangered or threatened throughout its range and to designate critical habitat. After conducting a comprehensive review of the status of the species, NOAA Fisheries determined in September 2002, that, while Atlantic white marlin abundance had declined from historical levels, the stock was not at a level that warranted listing under the ESA. The ESA determination specified that another stock status review would occur in 2007. Also, in 2001, the HMS and Billfish Advisory Panels (Billfish AP), a group of state representatives, regional Fishery Management Council members, commercial fishing representatives, recreational fishing representatives, academics, and environmental interest group representatives, indicated that it was necessary to improve the monitoring of recreational swordfish and Atlantic billfish landings.

In 2002, Phase 1 of the ICCAT Atlantic marlin rebuilding plan was extended through the year 2005. ICCAT amended the rebuilding program by specifying that, through 2005 (Phase One), the annual amount of blue marlin that can be harvested and retained by pelagic longline and purse seine vessels must be no more than 50 percent of the 1996 or 1999 landing levels, whichever is greater. For white marlin, the annual amount that can be harvested and retained by pelagic longline and purse seine vessels must be no more than 33 percent of the 1996 or 1999 landing levels, whichever is greater. The United States had already prohibited commercial retention of billfish since the implementation of the 1988 Atlantic Billfish FMP, so it was already compliant with this recommendation. For ICCAT members other than the United States, the plan required the release of all live marlins taken as bycatch in commercial fisheries, but provided an allowance for the landing of fish unavoidably killed, provided that they were not sold. For its part of the rebuilding program, the United States agreed to limit recreational landings of Atlantic blue and white marlin to 250 fish, annually, maintain its regulations prohibiting the retention of marlins by U.S. pelagic longline vessels, and continue monitoring billfish tournaments through scientific observer coverage of at least 5 percent initially, with the objective of 10 percent coverage by 2002. At present, the United States complies with the ICCAT observer requirements because it requires all HMS tournaments to register with NOAA Fisheries, selects all billfish tournaments for reporting the results, and assigns observers to many billfish tournaments.

In 2002, the HMS and Billfish APs again discussed monitoring U.S. recreational billfish landings, and focused upon both a landings tag program (similar to those operating for the recreational bluefin tuna fisheries in North Carolina and Maryland) and a call-in requirement for all billfish landings.

A key element to comply with Phase I of the billfish rebuilding plan and to improve the monitoring of recreational billfish and swordfish landings was to establish a comprehensive

monitoring program for all recreational landings of marlin, sailfish and swordfish, particularly those landed outside of fishing tournaments (which are monitored through the Recreational Billfish Survey (RBS)). On December 18, 2002 (67 FR 77434), NOAA Fisheries published a final rule requiring all vessel owners fishing for Atlantic HMS to obtain an Atlantic HMS recreational angling category permit. On January 7, 2003 (68 FR 711), a final rule establishing a mandatory reporting system for all non-tournament recreational landings of Atlantic marlins, sailfish, and swordfish was published. These requirements became effective in March 2003. These new requirements, in combination with mandatory tournament reporting, are expected to enable the United States to accurately monitor all recreational landings of Atlantic marlins, sailfish, and swordfish.

In addition to codifying the 250-fish annual Atlantic marlin landing limit and compliance measures, this rule also proposes to clarify a recreational reporting requirement for bluefin tuna, billfish and swordfish that was originally specified in the January 7, 2003, (68 FR 711) final rule. The regulatory language at § 635.5(c)(2), § 635.71(c)(6), and § 635.71(e)(15) indicated that anglers are required to report all non-tournament landings of billfish and swordfish to NMFS. Also, § 635.71(b)(6) currently indicates that anglers are required to report landings of bluefin tuna. However, § 635.5(c)(1) indicates that owners of vessels permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category must report bluefin tuna landings that are under the Angling category quota designated at § 635.27(a). This proposed rule would clarify, and make consistent, the recreational reporting requirement by specifying that owners of vessels owners permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category must report landings of bluefin tuna under the Angling category, and that owners of vessels permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category must report all non-tournament recreational landings of billfish and swordfish. This clarification is being proposed because permits under the Atlantic HMS Angling category and the Atlantic HMS Charter/Headboat category are issued to vessel owners. Therefore, the requirement to report landings should logically, and for enforcement purposes, be similarly incumbent upon owners of vessels permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category.

1.2 Need for Action and Objectives

Although the United States has already implemented a system to monitor recreational landings of Atlantic blue marlin, white marlin, sailfish and swordfish, it has not yet codified ICCAT recommendations requiring an annual recreational landing limit of 250 Atlantic blue and white marlin, combined, or a carryover mechanism for landings over/under the limit. Further, NOAA Fisheries does not have measures in place to ensure compliance with the 250-fish Atlantic blue marlin and white marlin limit, except through the use of emergency action. Therefore, to comply with the relevant ICCAT recommendations and to improve the management of these species, the objectives of this action are to: (1) codify an annual U.S. recreational landing limit of 250 Atlantic blue and white marlin, combined; (2) establish specific management measures to comply with the landing limit; and, (3) establish an overage/underage provision whereby

landings above the landing limit in a given year would be deducted from the limit in the subsequent year, and underages of a given year may be added to the limit in the subsequent year.

This proposed action would also clarify and make consistent, for enforcement purposes, final regulations which were published in the Federal Register of Tuesday, January 7, 2003, by specifying that owners of vessels permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category must report landings of bluefin tuna under the Angling category, and that owners of vessels permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category must report all non-tournament recreational landings of billfish and swordfish. Inadvertently, the regulations of January 7, 2003 (68 FR 711) indicated that anglers are required to report non-tournament recreational landings of billfish and swordfish, while other regulations currently indicate that vessel owners are required to report recreational landings of bluefin tuna under the Angling category. The proposed action would remove these inconsistencies and clarify NOAA Fisheries' intent that the vessel owner, rather than the angler, is responsible for reporting non-tournament recreational landings of HMS. This proposed action is within the scope of the final regulations published January 7, 2003 (68 FR 711), and would not increase the reporting burden or impacts on regulated entities beyond those that have already been analyzed in the EA prepared pursuant to the January 7, 2003, final rule.

2.0 SUMMARY OF MANAGEMENT ALTERNATIVES

This section summarizes the alternatives that are being considered in this proposed rulemaking. Under all of these alternatives, a carryover provision would apply whereby overages of the landing limit in a given year (beginning with the 2003 fishing year) would be deducted from the limit in a subsequent year (beginning with the 2004 fishing year), and underages of a given year (beginning with the 2003 fishing year) could be added to the limit in subsequent year (beginning with the 2004 fishing year). Because Atlantic marlin occur predominantly in Federal waters, the proposed regulations include a rebuttable presumption that any landed Atlantic marlin were taken seaward of the inner boundary of the U.S. Atlantic EEZ.

2.1 Issue 1 - Implement ICCAT Recommendations 00-13 and 00-14 to Limit Annual U.S. Recreational Landings to 250 Atlantic Blue and White Marlin, Combined, with an Annual Carryover Provision for Landings Above/Below the Marlin Landing Limit.

2.1.1 Alternative 1a - No-action alternative.

The No-Action Alternative (1a) would maintain the current regulations, which do not contain management measures to ensure that marlin landings remain below the 250 fish landing limit.

2.1.2 Alternative 1b - Year-round catch and release fishing for Atlantic marlin.

This alternative would implement a year-round catch and release only fishery for Atlantic blue and white marlin. Anglers would not be allowed to retain any Atlantic marlin, and would be required to release all blue and white marlin to ensure a maximum chance of survival if they were hooked.

2.1.3 Alternative 1c - Catch and release fishing after the date upon which the landing limit is projected to be achieved.

This alternative would maintain the existing regulations until the landing limit is projected to be achieved. Under this alternative, when 80 percent of the limit is achieved, NOAA Fisheries would make a projection to determine the date upon which 100 percent of the limit would be landed. From the projected date, the marlin fishery would become catch and release, if necessary, until the end of the fishing year. If the landing limit is not projected to be achieved (e.g., 80 percent of the limit is attained with only a few days left in the fishing year), then no closure would be implemented. If a closure is implemented during a given fishing year, the fishery would reopen at the start of the next fishing year.

2.1.4 Alternative 1d - (PREFERRED ALTERNATIVE) - Minimum size increase when 80 percent of the marlin landing limit is achieved.

This alternative would maintain the existing regulations until 80 percent of the landing limit is achieved. At that point, the Atlantic blue and white marlin minimum sizes would be increased for the remainder of the fishing year, if necessary, to an appropriate length, whereby the landing limit would be achieved but not exceeded. If the landing limit is not projected to be achieved (e.g., 80 percent of the limit is attained with only a few days left in the fishing year), then no minimum size increase would be implemented. As a backstop, if the landing limit is achieved, even with an increase in minimum sizes, then the fishery would become catch and release only for the remainder of the fishing year. If marlin minimum sizes are increased to slow landings during a given fishing year, they would revert back to the prior year's minimum sizes at the start of the next fishing year.

2.1.5 Alternative 1e - Marlin landings tag program.

This alternative would implement a program whereby landing tags would be issued in an amount equivalent to the landing limit. Only vessel owners possessing a landing tag would be allowed to retain marlin. Possible methods of distributing the tags include, but are not limited to, using a vessel's fishing history, fee payments, a lottery, or a first come-first serve basis.

2.2 Issue 2 - Clarify and Make Consistent Recreational Reporting Requirements by Specifying that Vessel Owners, Rather Than Anglers, Are Required to Report Non-Tournament Recreational landings of HMS.

2.2.1 Alternative 2a - No action alternative.

This alternative would retain the current regulatory language at § 635.5(c)(2), which specifies that anglers, rather than vessel owners, must report all non-tournament landings of Atlantic blue marlin, Atlantic white marlin, Atlantic sailfish, and North Atlantic swordfish by calling NOAA Fisheries.

2.2.2 Alternative 2b - (PREFERRED ALTERNATIVE) - Specify that vessel owners must report non-tournament recreational landings.

This alternative would amend the current regulatory language at § 635.5(c)(2), by specifying that vessel owners must report all non-tournament landings of Atlantic blue marlin, Atlantic white marlin, Atlantic sailfish, and North Atlantic swordfish by calling NOAA Fisheries.

3.0 DESCRIPTION OF AFFECTED ENVIRONMENT

A summary of the life history information for Atlantic HMS is provided in the HMS FMP (NMFS, 1999b). A summary of the life history information for Atlantic marlin is provided in the Billfish Amendment (NMFS, 1999a), and the 2003 HMS Stock Assessment and Fisheries Evaluation (SAFE) report (NMFS, 2003).

3.1 Status of Atlantic Marlin Stocks

The 2003 HMS SAFE report (NMFS, 2003) includes the latest stock assessment information, and recommendations and resolutions from ICCAT and its Standing Committee on Research and Statistics (SCRS) through December 2002.

Atlantic blue marlin and white marlin are overfished and overfishing continues internationally. The most recent stock assessment for Atlantic blue marlin was conducted in 2000. The SCRS suggested that substantial investments in research on the habitat requirements of marlins, as well as the verification of historical catch data, are needed to reduce uncertainties in the assessment.

The 2000 blue marlin stock assessment is somewhat more optimistic than the previous 1998 assessment, however, it found that stock productivity (MSY and stock's capacity to replenish) is lower than previous estimates. Total Atlantic blue marlin stock abundance is at approximately 40% of B_{msy} (range: 0.25 - 0.6), and the current fishing mortality rate is approximately four times higher than F_{msy} (range: 2.5 - 6.0). Overfishing of blue marlin has taken place for the last 10-15 years and is still occurring. Blue marlin landings declined in 1999 by 14% from 1996 levels. The 2000 SCRS recommended that ICCAT take additional steps to reduce the catch of Atlantic blue marlin as much as possible.

Atlantic white marlin have been overfished for many years. The most recent stock assessment was conducted in May 2002. The previous two white marlin assessments, made in 1996 and 2000, indicated that the biomass of white marlin had been below B_{msy} for more than two decades. The 2002 stock assessment suggested that the total Atlantic white marlin stock, in 2000, remained overfished and that overfishing was continuing to occur. Total Atlantic white marlin

stock abundance is at approximately 12% of B_{msy} (range: 0.06 - 0.25), and the current fishing mortality rate is approximately 8.3 times above F_{msy} (range: 4.5 - 15.8). Given that the stock is severely depressed, the SCRS concluded that ICCAT take steps to reduce the catch of white marlin as much as possible.

3.2 Fishery Participants and Gear Types

History of the Fisheries

The HMS FMP (NMFS, 1999b) and the Environmental Assessment prepared for a final rule to improve monitoring and management of billfish and swordfish recreational fisheries (NMFS 2002) provide a complete history of Atlantic HMS fisheries.

Atlantic Marlin

The Billfish Amendment (NMFS, 1999a), the Environmental Assessment prepared for a final rule to improve monitoring and management of billfish and swordfish recreational fisheries (NMFS 2002), and the 2003 Stock Assessment and Fishery Evaluation for Atlantic Highly Migratory Species (NMFS 2003) provide a complete history of Atlantic marlin fisheries.

Atlantic billfish have historically been landed as incidental catch by foreign and domestic commercial pelagic longline vessels, and in directed recreational and subsistence handline fisheries. Since the majority of billfish fishing mortality in the Atlantic Ocean has occurred as the result of international commercial pelagic fisheries (see Table 4.1, 2003 HMS SAFE report; (NMFS, 2003)), catch estimates have risen and fallen with the overall catch estimates for the commercial pelagic fisheries.

Recreational fishing for billfish is conducted in nearly all warm water ocean areas, generally in the deeper waters of tropical and subtropical areas, from 120 ft. to 6,000 ft. (Lucy *et al.*, 1990). By far, the majority of billfish fishing activity is concentrated in Florida. However, billfish fishing extends from the Gulf of Mexico through the Mid-Atlantic coastal states and into the Caribbean, depending upon the species and season. The ten states with the highest number of billfish anglers are: 1) Florida; 2) California; 3) North Carolina; 4) Hawaii; 5) Texas; 6) New Jersey; 7) New York; 8) South Carolina; 9) Maryland; and 10) Delaware. Atlantic blue marlin are most abundant off the mid-Atlantic coast in the summer, the east coast of Florida and the Bahamas in the spring, Puerto Rico and the Virgin Islands in the summer and fall, and the Florida Keys in the fall. White marlin are available in the Gulf of Mexico from June through October. The northeastern limit of the summer coastal occurrence of white marlin is Nantucket Island, MA. Spring is the peak white marlin season in the Straits of Florida, the Bahamas, Puerto Rico, and the Virgin Islands.

Domestic fishing activity directed on Atlantic billfish, including blue and white marlin, is restricted to recreational fishing on private vessels and on charter/headboats. The only authorized gear is rod and reel. A detailed description of the current Atlantic billfish recreational

fishery, including participating user groups, historical descriptions, and social and economic values of the fishery is provided in the Billfish Amendment (NMFS, 1999a), and in the 2001, 2002, and 2003 SAFE reports (NMFS, 2001; NMFS, 2002b; NMFS 2003). In brief, Ditton and Stoll (1998) reported that 230,000 anglers in the United States spent 2,136,899 days fishing for various billfish species in 1991. According to Fisher and Ditton (1992), fishery participants are generally college-educated males, with a mean age of 46, median household income of \$115,000, and more than 11 years of experience fishing for billfish.

Several characteristics of the billfish recreational fisheries challenge the use of traditional recreational angler surveys to monitor catches. U.S. recreational fisheries activities, including HMS recreational landings, are generally monitored by the Marine Recreational Fisheries Statistics Survey (MRFSS). However, recreational catches of billfish are difficult to assess because they are relatively rare in comparison with other species targeted by marine anglers and because there are comparatively few recreational billfish fishermen. Monitoring is further limited because landings occur over a wide geographic range. When landings of species occur as a “rare event,” MRFSS may not provide a robust estimate of recreational fishing activity. In addition, billfish-specific landings data are derived primarily from tournament reports. Thus, many billfish landings outside of tournaments have historically gone unreported.

Atlantic billfish are also monitored through the Recreational Billfish Survey (RBS) which began in 1971 in the Gulf of Mexico and was expanded to include the U.S. East Coast and U.S. Caribbean in 1972. Since 1992, the RBS data have almost exclusively been derived from recreational billfish tournaments or other recreational HMS species tournaments that have an award category for billfish. Non-tournament landings are normally included each year from voluntary reports, but these data are not systematically collected. Historically, tournaments sampled by the RBS do not represent a census of all billfish tournaments that included U.S. citizen participants. Therefore, the sampled catch (*i.e.*, boated fish) and reported effort represent minimum estimates and cannot be effectively extrapolated to derive an estimate of total catch or landings. Amendment One to the Atlantic Billfish FMP (NMFS, 1999a) established a regulatory requirement for billfish tournaments to register with NOAA Fisheries at least four weeks prior to the event to improve upon the robustness of the RBS. While landings reporting for HMS tournaments have become more comprehensive, a significant amount of recreational fishing effort for Atlantic HMS, including billfish, tunas and swordfish, occurs outside of the tournament context.

Using standardized recreational catch rates from fishing tournaments, Ortiz and Farber (2000) calculated indices of abundance for Atlantic blue and white marlin. They used an index of weight caught per 100 hours of fishing reported through tournament operators and NOAA Fisheries observers through the RBS program. The RBS database included a total of 11,066 records of information (from a total of 459 tournaments) between 1973 and 1999, including species, disposition (lost, released, tagged, or boated), and morphometric information (size, weight) for billfish that were landed. Ortiz and Farber noted that the average catch rate of blue marlin was 307.5kg/100 hours of fishing effort between 1973 and 1999. In recent years, the mean size of blue marlin reported by recreational tournaments has been in an increasing trend,

most likely a reflection of the recent increase in the minimum size limit from 86 inches lower jaw-fork length (LJFL) to 99 inches LJFL. However, using the number of fish caught per 100 hours of fishing metric, they noted that recent catch rates have been below average levels. Catch rate trends in numbers landed per unit effort for blue marlin are shown in Figure 1.

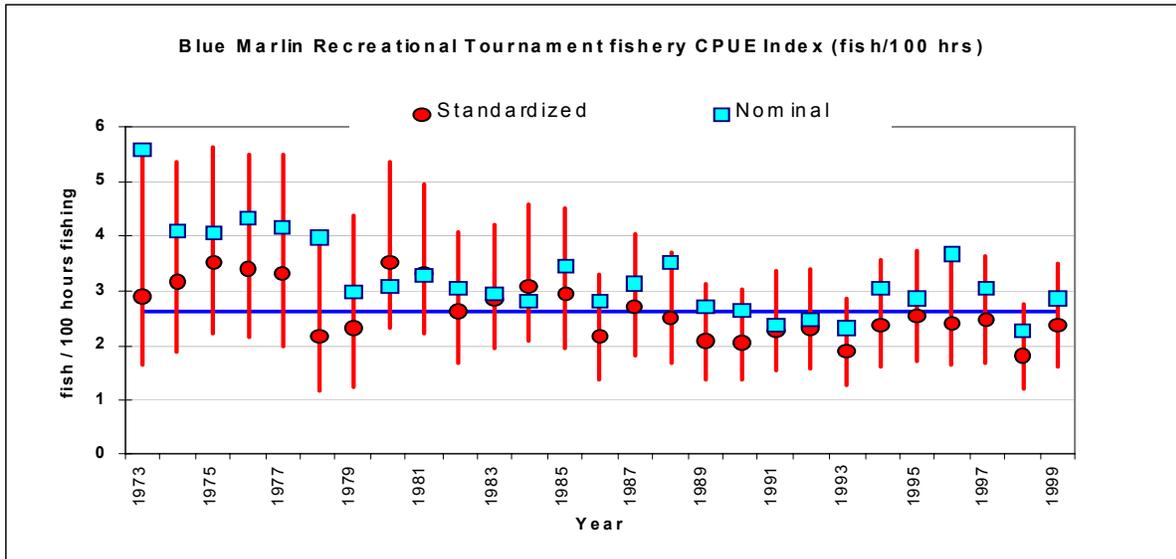


Figure 1. Standardized catch rates by numbers (CPUE) of blue marlin (1973-1999) from recreational tournaments ($\pm 95\%$ CI). Solid line represents the overall average for the standardized catch rates (Ortiz and Farber, 2000).

Figure 2 indicates that catch trends for white marlin are declining using the number per unit effort analyses by Ortiz and Farber. Since 1985, catch rates have been below the overall mean

(Figure 2).

The NOAA Fisheries Southeast Fisheries Science Center (SEFSC) compiled recreational

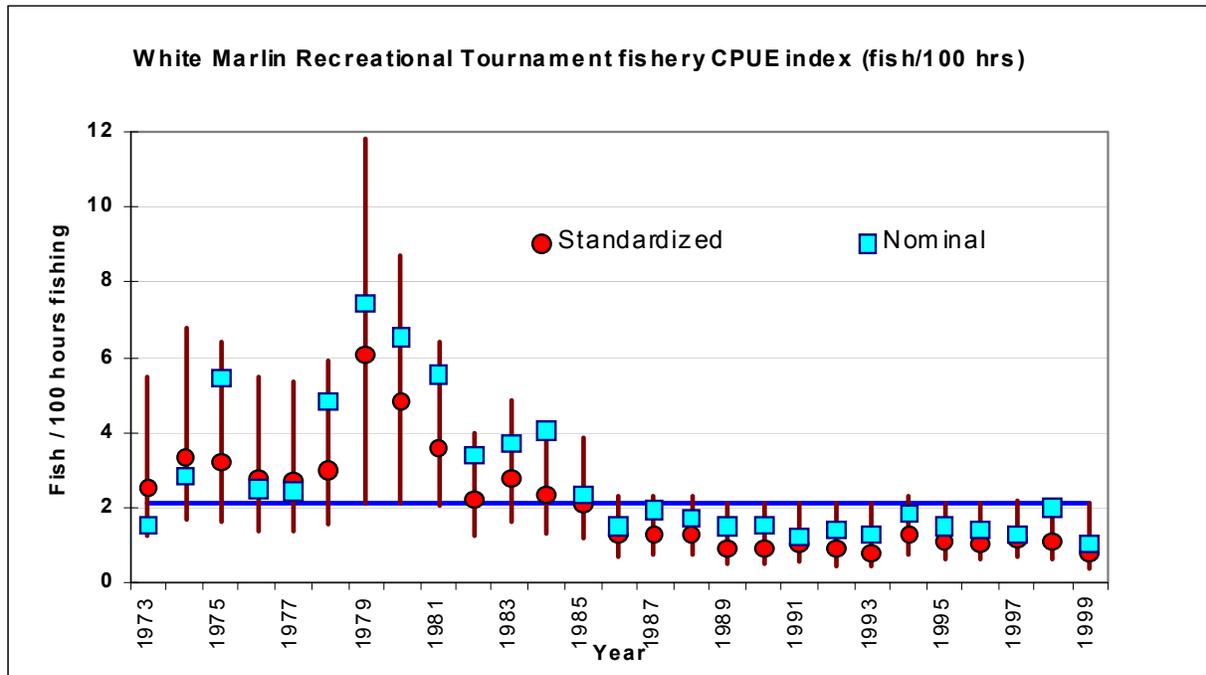


Figure 2. Nominal and standardized catch rates by numbers (CPUE) of white marlin (1973-1999) from recreational tournaments ($\pm 95\%$ CI). Solid line represents the overall average for the standardized catch rates (Ortiz and Farber, 2000).

landings derived from the RBS for Atlantic blue and white marlin for the 1996 and 1999 calendar years; and for the 1999, 2000, and 2001 fishing years (June through May), which are provided in Table 1. The table indicates that annual U.S. recreational landings of Atlantic marlin have declined below the proposed 250 marlin landings threshold for the past three fishing years. The decline in marlin landings may partially be attributable to increased minimum size limits that were implemented midway through the 1999 fishing year through the Billfish Amendment (64 FR 29090), and to the conservation ethic of many billfish anglers. Based on information from the RBS, if the minimum size limit for Atlantic blue marlin had been implemented for the entire 1999 calendar year, then blue marlin landings would have been only 25.47 mt (128 fish) rather than 32.8 mt (177 fish), as noted by Farber and Venizelos (2000).

Table 1. U.S. recreational landings of Atlantic blue and white marlin.

Year	Number of Blue Marlin	Number of White Marlin	Total
1996 (Calendar Year)	208	74	282
1999 (Calendar Year)	177	36	213
1999 (June 1999-May 2000)*	155	36	191
2000 (June 2000-May 2001)*	119	8	127
2001 (June 2000-May 2002)*	75	22	97
2002 (June 2001-May 2003)**	96	33	129

* The U.S. reports ICCAT compliance with the marlin limit based on fishing year estimates.

** Preliminary.

Because the MRFSS, LPS, and RBS only provide an estimate of HMS recreational fishing activities, NOAA Fisheries recently implemented two important management measures to improve upon the quality of data in the recreational HMS fisheries. These measures include a requirement for vessel owners fishing recreationally for Atlantic HMS to obtain an Atlantic HMS recreational permit (December 18, 2002; 67 FR 77434) and a mandatory requirement for anglers to report all non-tournament recreational billfish and swordfish landings (January 7, 2003; 68 FR 711). These programs, implemented to comply with the 2000 ICCAT recommendations, improve upon NOAA Fisheries' ability to determine the magnitude of landings from private vessels, charter boats and other platforms, both inside the U.S. EEZ and throughout the Atlantic Ocean (range of Atlantic billfish stocks).

3.3 Habitat (Including Essential Fish Habitat (EFH))

Atlantic marlin EFH is described, and EFH charts are provided, in the Billfish Amendment (NMFS, 1999a). EFH for other HMS is described, and EFH charts are provided, in the EFH section of the HMS FMP (NMFS, 1999b). The proposed recreational regulations are not expected to adversely effect EFH for billfish or other species, as the activity is conducted largely with rod and reel gear which does not substantially interact with benthic habitat.

The Billfish Amendment indicates that marlin occupy pelagic oceanic environments through all phases of their life histories. Likewise, North Atlantic swordfish EFH is comprised of oceanic environments, but with more clearly defined nursery areas. These nursery areas are located along the Florida east coast and northeastern Gulf of Mexico, including areas encompassed by pelagic longline closures. The following section provides the specific definitions of EFH that have been established for Atlantic blue marlin and Atlantic white marlin.

Atlantic Blue Marlin EFH

Spawning, Eggs and Larvae: Offshore Florida, identical to adult EFH in that area: from offshore Ponce de Leon Inlet (29.5° N) south to offshore Melbourne, FL from the 100 m isobath to 50 mi seaward 79.25° W); from offshore Melbourne, FL south to Key West from the 100 m isobath to the EEZ boundary; also, off the northwest coast of Puerto Rico (from Arecibo to Mayaguez), bounded by the 2000 m isobath to the north and 18° N to the south.

Juvenile/Subadults (20-189 cm LJFL): Pelagic surface waters not less than 24° C, offshore Delaware Bay to Cape Lookout, NC from the 100 to the 2000 m isobath, and grading further offshore to 73.25° W at 35° N; continuing south from offshore Cape Lookout to Cumberland Island, GA (30.75° N), from the 200 to 2000 m isobath; offshore St. Augustine, FL (30° N) south to 26° N, (Ft. Lauderdale, FL) from the 100 m isobath offshore an additional 30 miles to 29° N, then south of 29° N, seaward from the 100 m isobath to the EEZ boundary; off southwest Florida from 24.5° N between the 200 m isobath and the EEZ boundary, north to 28° N, west to 86.25° W, and south to the EEZ boundary; offshore Choctawhatchee Bay to Terrebonne Parish, LA, from the 100 to the 2000 m isobath, continuing west along the 200 m isobath to the Texas/Mexico border out to 2000 meters.

Adults (\geq 190 cm LJFL): Pelagic surface waters not less than 24° C, from offshore Delaware Bay (38.5° N) south to offshore Wilmington, NC (33.5° N) between the 100 to the 2000 m isobaths, offshore Charleston, SC (32° N) from 100 m to 78° W to offshore the Georgia/Florida border (30.75° N); from offshore Ponce de Leon Inlet (29.5° N) south to offshore Melbourne, FL from the 100 m isobath to 50 mi seaward 79.25° W); from offshore Melbourne, FL south to Key West from the 100 m isobath to the EEZ boundary; from offshore Choctawhatchee Bay (86° W) to Terrebonne Parish, LA (90° W) between the 100 to the 2000 m isobaths, from Terrebonne Parish, LA south to offshore Galveston, TX (95° W) between the 200 and 2000 m isobaths; Puerto Rico and the U.S. Virgin Islands: from 65.25° W east and south to the EEZ northern boundary along the 100 m isobath. Also, off the northern shore of Puerto Rico out to the 2000 m isobath from 65.5° W west to the EEZ boundary, and along the southern coast of Puerto Rico out to the 2000 m isobath, east to 66.5° W.

Atlantic White Marlin EFH

Spawning, Eggs and Larvae: At this time, the available information is insufficient to identify EFH for this life stage.

Juvenile/Subadult (20 - 158 cm LJFL): Pelagic waters warmer than 22° C, from offshore the U.S. east coast from the 50 to the 2000 m isobath from the EEZ at Georges Bank at 41° N, south to offshore Miami FL at 25.25° N; off the west coast of Florida, between the 200 and 2000 m isobath from 24.75° N to 27.75° N; the continuing between the 200 and 2000 m isobath west from 86° W to 93.5° W, then off the coast of Texas from west of 95.5° W to the 50 m isobath and south to the EEZ boundary.

Adults (\geq 159 cm LJFL): Pelagic waters warmer than 22° C, from offshore the northeast U.S. coast from the 50 to the 2000 m isobath from 33.75° N, then extending along 39.25° N out to the

EEZ boundary; off the coast of South Carolina in the Charleston Bump area, in the region starting from the 200 m isobath at 32.25° N, east to 78.25° W, south to 31° N, west to 79.5° W and north to the 200 m isobath; offshore Cape Canaveral, FL from the 200 m isobath, east at 29° N to the EEZ boundary, south along the 200 m isobath and out to the EEZ boundary to 82° W, in the vicinity of Key West, FL; in the Gulf of Mexico, from 86.5° W to the EEZ boundary, along the 50 m isobath near De Soto canyon, then along the 100 m isobath west to the EEZ boundary offshore the United States/Mexico border.

3.4 Protected Species under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA)

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 NOAA Fisheries jurisdiction that occur in the Atlantic billfish and swordfish management unit, there are several species of sea turtles caught as bycatch in the pelagic longline fishery. These include the following: green, hawksbill, Kemp's Atlantic ridley, leatherback, and loggerhead.

Sea turtles have been known to be captured in rod and reel fisheries at relatively low rates. On September 7, 2000, NMFS reinitiated formal consultation for all HMS fisheries under Section 7 of the ESA. A Biological Opinion issued June 14, 2001, concluded that continued operation of the Atlantic pelagic longline fishery is likely to jeopardize the continued existence of leatherback and loggerhead sea turtle species under NMFS jurisdiction. The Biological Opinion also concluded that the rod and reel fishery may adversely affect, but is not likely to jeopardize the continued existence, of any threatened or endangered sea turtles. NOAA Fisheries issued a Final Supplemental Environmental Impact Statement (FSEIS) and final rule on July 9, 2002 (67 FR 45393), to implement the reasonable and prudent alternative required by the Biological Opinion. The activities associated with the proposed alternatives in this rulemaking will not affect listed species in any manner not already considered in the Biological Opinion, because they are not expected to alter fishing practices or fishing effort in any way that has not been previously considered.

In September, 2001, NOAA Fisheries received a petition to list Atlantic white marlin as endangered or threatened throughout its range, and to designate critical habitat under the ESA. Based on a review of the best available scientific and commercial information on the status of the species, it was determined on September 3, 2002 (September 9, 2003, 67 FR 57204), that listing Atlantic white marlin was not warranted at the time. A reevaluation of the status of Atlantic white marlin will be conducted in 2007.

The MMPA of 1972 is the principal Federal legislation that guides marine mammal species

protection and conservation policy. Amendments to the MMPA in 1994 introduced substantial changes to the provisions of the Act, including the establishment of a new regime governing interactions between marine mammals and commercial fisheries. At least annually, NOAA Fisheries is required to prepare a list of fisheries that places all fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals in each fishery. Fishers participating in Category I and II fisheries are required to comply with regulations established by required take reduction plans. This rulemaking affects fishing activities that are conducted largely with rod and reel. Rod and reel gear is listed as a Category III fishery under the MMPA, because of its low likelihood of interacting with marine mammals. Although a few reports of entanglements in handline and harpoon gear exist, these were likely non-injurious entanglements from which the whales could easily disentangle themselves or be disentangled. Increased development of the Disentanglement Network under the Atlantic large whale Take Reduction Plan should provide adequate mitigation for these infrequent (and thus far, non-lethal) entanglements.

At a sub-group meeting of the Atlantic States Marine Fisheries Commission (ASMFC), NOAA Fisheries and state agency staff discussed the need for collecting additional information about protected species bycatch in recreational fisheries. The sub-group recommended that agencies investigate options for quantifying fisheries interactions with recreational gear. The impetus for this recommendation was based upon the perception that there may be an increasing problem of interactions (i.e., entanglements) between recreational fishing gear and marine mammals. Although stranding data are preliminary, there is some evidence of protected species entanglements (primarily bottlenose dolphin) with recreational fishing gear (primarily monofilament line and fishing lures). Although neither the states nor NOAA Fisheries have any directed monitoring program to identify recreational fishing interactions with protected species, limited information is collected via the LPS/MRFSS interviews and certain segments of the CHB fleet as reported by the logbook program. Interactions between recreational anglers and seabirds has also been noted as a potential area of concern. NOAA Fisheries' HMS program will continue to investigate enhanced data collection activities through logbooks, surveys, and where appropriate, observers.

4.0 ENVIRONMENTAL CONSEQUENCES OF MANAGEMENT ALTERNATIVES

4.1 Implement ICCAT Recommendations to Limit Annual U.S. Recreational Landings to 250 Atlantic Blue and White Marlin, Combined, with an Annual Carryover Provision for Landings Above/Below the Marlin Landing limit

The success of the ICCAT Atlantic marlin rebuilding plan is predicated primarily upon international cooperation to reduce landings. In fact, the magnitude of the required mortality reductions to rebuild these overfished stocks are such that, if all sources of U.S. marlin mortality were eliminated (*i.e.*, both from recreational and commercial fisheries), the cumulative impact of the U.S. action (*e.g.*, prohibition of commercial retention of Atlantic billfish, extensive time/area closures along U.S. Atlantic coast, gear restrictions, etc.) would not be sufficient to provide for rebuilding under the current plan. Therefore, the brunt of the reductions required to rebuild

overfished Atlantic blue and white marlin stocks falls on those countries whose vessels currently produce the greatest landings and mortality. To that end, ICCAT members, not including the United States, have been required to implement a 50 percent reduction in Atlantic blue marlin landings from 1999 or 1996 levels, and a 67 percent reduction in white marlin landings from 1999 or 1996 levels. Currently, Japan, Chinese-Taipei, Brazil, Cote D'Ivoire, and Venezuela account for over 80 percent of the Atlantic marlin landings. For its part, the United States has agreed to limit annual recreational landings to 250 Atlantic blue and white marlin through 2005, as part of Phase I of the ICCAT Atlantic marlin rebuilding plan (ICCAT Recommendation 00-13). Codification and implementation of that agreement is the subject of this rulemaking.

The proposed carryover provision for marlin landings above or below the annual limit is an important component of each of the alternatives that are discussed in Section 4.1 (with the exception of the no-action alternative). ICCAT Recommendation 00-14 specified that, for any species under catch limit management, underages/overages from one year may be added to/must be subtracted from the catch limit of the management period immediately after, or one year after, that year, unless any other recommendation dealing with overages/underages takes precedent. Therefore, if the United States lands less than 250 Atlantic blue and white marlin, combined, in one year then the following year's allocation could be increased by an amount equivalent to the underage. This provision has obvious importance when discussing the impacts of each of the alternatives.

The environmental (biological, social, economic) impacts of the proposed carryover provision can vary widely and are, therefore, difficult to quantify. However, a brief qualitative discussion is possible. Implementation of a carryover provision can result in both positive and negative environmental consequences. From a biological standpoint, accumulations of quota or landings under the limit are generally either neutral or positive, so long as those fish remain part of the fishery. However, the removal or landing of "banked" fish in subsequent years can pose a threat to overfished populations under certain circumstances. For example, the availability of carried-over quota could allow for increased fishing mortality on a given year class that may be important to the maintenance or rebuilding of a fish stock. The increased concentration of such mortality on a sensitive year class could harm that population's ability to sustain or rebuild itself to a greater extent than would a lower, steady rate of removal of fish from that fishery. Conversely, requiring overages to be deducted from a future management period can reduce the mortality inflicted upon a given fish population in a given year, potentially making a positive contribution to stock maintenance or rebuilding.

From a social and economic perspective, carryover can also result in either positive or negative economic and social benefits. Carry over of uncaught quota allows for the possible realization of social and economic benefits stemming from what would otherwise be lost fishing opportunities. For example, additional trips to catch available, "carried-over" quota that would otherwise not have been available could result in increased benefits from the sale of additional fuel, tackle, and ice, more tournaments being held, and more charters trips being booked, etc. Depending upon the size of the carryover, these benefits could be large or small. Conversely, carrying forward a quota overage into a subsequent management period can have significant negative social and

economic consequences by truncating fishing opportunities, thereby reducing attendant economic and social benefits during a future fishing year. Depending upon the size of the overage being carried over, the negative social and economic impacts could be large or small.

An analysis of the environmental consequences of the alternatives, including economic impacts, is further complicated by two additional factors. As discussed in Section 3.2, MRFSS landings estimates are not always useful for species such as marlin, whose landings are considered a “rare event.” The Proportional Standard of Error (PSE), a measure of precision, associated with all of the marlin landings estimates are very high (average PSE = 84.5). The most reliable marlin landings data are those derived from the RBS, which focuses mainly upon tournaments. As a result, some recreational billfish landings have historically gone unreported. This lack of a precise landings estimate makes an assessment of the impacts of the alternatives much more difficult. Anecdotal information suggests that the minimum sizes implemented in 1999 have effectively kept landings below the 250 fish limit, but this cannot yet be verified. The RBS documented 127 marlins landed in 2000, and 97 marlins landed in 2001, and has provided a preliminary estimate of 129 marlins in fishing year 2002. However, these should be considered minimum estimates, with an upper estimate that is largely unknown. If annual marlin landings have actually been below 250 fish, and they remain below 250 fish, then the impacts associated with a landing limit are expected to be minimal or non-existent. Currently, using existing data through July 2003, it appears that annual marlin landings have continued to remain below 250 fish.

A second complicating factor is the difficulty associated with determining angler behavior if the marlin fishery was to become catch and release only. Fisher and Ditton (1992) indicated that between 74 to 99 percent of recreationally caught marlin are released. The unresolved question is whether or not anglers would continue to take directed marlin trips, or stop fishing altogether, if the opportunity to land a marlin is eliminated. If anglers continue to take marlin trips, then many of the negative economic impacts associated with the landing limit would be minimal or non-existent.

In consideration of the difficulty in predicting whether anglers would stop fishing, practice catch and release fishing, or switch to alternative species if a zero-retention limit for marlin were implemented it is similarly difficult to predict whether Alternatives 1c through 1e would be constraining to anglers, given that marlin landings have been well below the landing limit in recent years. For the overall purpose the analyses contained in this document, NOAA Fisheries anticipates that marlin landings will be below the landing limit and, in all likelihood, not require a fishery closure (*i.e.* catch and release). Therefore, no significant impacts are expected any of the alternatives, with the possible exception of Alternatives 1b and 1e.

All of the alternatives in Section 4.1, and discussed below, would potentially apply to vessels holding an HMS Charter/Headboat permit or an HMS Angling Category permit. As described in Section 2.1, the alternatives being considered to limit annual U.S. recreational landings to 250 Atlantic blue and white marlin, combined, with an annual carryover provision for landings above/below the landing limit are:

Alternative 1a - No-action alternative (*i.e., status quo* with no new management measures);

Alternative 1b - Year-round catch and release fishing for Atlantic marlin;

Alternative 1c - Catch and release fishing after the date upon which the landing limit is projected to be achieved;

Alternative 1d - (PREFERRED ALTERNATIVE) - Minimum size increase when 80 percent of the marlin landing limit is achieved;

Alternative 1e - Marlin landings tag program.

4.1.1 Ecological Impacts

The no-action alternative, 1a, would retain all existing management measures without change, including current minimum size limits. There would be no mechanism in place to ensure that marlin landings stay within the ICCAT-mandated limit of 250 fish. This alternative was discussed in the EA prepared pursuant to a final rule to improve monitoring and management of billfish and swordfish recreational fisheries (NMFS 2002). At the time, it was noted that reported marlin landings for calendar year 1999 (213 fish) were below the 250 fish annual limit (see Table 1). To more fully assess the effect of the minimum size limit for Atlantic marlin that was enacted in May 1999 the analysis indicated that, if landings of fish below the limits enacted mid-season are removed from the landings for the 1999 calendar year to adjust for mid-year implementation of the minimum size limits, then it would yield an “adjusted” total of 164 Atlantic marlin, or 128 blue marlin and 36 white marlin, (Farber and Venizelos, 2000). Furthermore, RBS landings information for 2000 indicated that 127 Atlantic marlin were landed (Table 1), which is well below the 250 annual ICCAT limit. Reported RBS marlin landings for 2001 are 97 fish. Thus, using the available data, albeit incomplete, Atlantic marlin landings have remained below the proposed 250-fish limit under the regulatory *status quo*. However, given the nature of open access fisheries, without a mechanism in place to prevent exceeding the 250-fish limit, fishing effort and landings could increase unchecked. Also, as mentioned in Section 3.2, the RBS primarily documents landings from registered tournaments that have an award category for billfish. As such, RBS documented landings represent only a minimum estimate. Billfish landings from private and charter/headboat vessels that do not participate in tournaments have historically been undercounted. A requirement to report all recreational billfish landings, which was implemented on March 2, 2003 (68 FR 711), is expected to alleviate the undercounting problem. However, because the marlin fishery is open access and actual levels of billfish landings are presently incomplete, there is no assurance that Alternative 1a (no action or *status quo*) would be effective at keeping landings below the ICCAT-mandated 250 fish landing limit. If domestic marlin landings exceed the 250-fish limit under this alternative, and emergency action is not implemented, some negative ecological impacts, such as a delay in stock rebuilding, could result. Also, the no-action alternative would not ensure U.S. compliance with ICCAT Recommendation 00-13. The no action alternative would not be expected to result in significant

ecological impacts, either positive or negative, on bycatch of target and non-target species, protected species, and EFH because changes to existing management measures are not contemplated.

Alternative 1b, catch and release fishing only, would prohibit all marlin landings on a year-round basis. This prohibition would apply to both tournament and non-tournament fishing activities. This alternative would ensure compliance with the ICCAT-mandated 250 fish marlin landing limit. Variations of this alternative (*i.e.* a zero-fish bag limit) were considered during the development of the Billfish Amendment (NMFS, 1999a). The analysis indicated that the majority of recreationally-caught fish are released, ranging from 74 to 99 percent (Fisher and Ditton, 1992), depending upon area, with many of the released fish being tagged as part of NOAA Fisheries' Cooperative Tagging Center program (Jones *et al.*, 1997). Therefore, from an ecological perspective, if most marlin are currently being released, then this alternative may not substantially reduce fishing effort. However, without factoring in post-release mortality, positive ecological effects would be expected under this alternative because some marlin would likely be conserved, if it results in a reduction in overall fishing effort. Additionally, expected impacts on bycatch of non-target species, protected species and EFH would either be neutral or slightly positive, if that effort is not redirected to other species. If, however, fishing effort is redirected to other pelagic species such as tuna, sailfish, pelagic sharks, swordfish, dolphin and wahoo, then these species could experience some adverse ecological effects.

Alternative 1c combines Alternatives 1a and 1b. If the *status quo* is not effective at keeping landings below the 250 fish limit, then the fishery would become catch and release. Some marlin could be conserved if fishing effort is reduced. However, this alternative would not have as high a probability at conserving billfish as Alternative 1b, simply because more fish could be landed. Since the fishery is already largely catch and release, expected impacts on bycatch of non-target species, protected species, and EFH would likely not change, or possibly, be slightly positive. However, if the marlin fishery becomes catch and release only and effort is redirected to other pelagic species such as tuna, sailfish, pelagic sharks, swordfish, dolphin, and wahoo, these species could experience some adverse ecological effects. Any adverse ecological effects due to redirected fishing effort would likely be minimal because a closure would probably occur very late in the fishing year.

Alternative 1d (Preferred Alternative) would forestall closure of the fishery (catch and release only) by increasing marlin minimum sizes, if necessary, for the remainder of the fishing year when 80 percent of the limit has been landed. The temporary minimum size increase is expected to allow landings to approach the limit, but not exceed it. Some marlin could be conserved if fishing effort is reduced. This alternative could also slightly reduce mortality on juvenile fish, assuming post-release mortality is not high. This alternative would not have as high a probability at billfish conservation as Alternative 1b, because more fish would be landed. Since the fishery is already largely catch and release, expected impacts on bycatch of non-target species, undersized target species, protected species, and EFH would likely not change or, possibly, be slightly positive. However, if the marlin fishery were to become catch and release at some point during a fishing year (*e.g.*, the limit is attained even with higher minimum sizes)

and effort was redirected to other pelagic species such as tuna, sailfish, pelagic sharks, swordfish, dolphin and wahoo, these species could experience some adverse ecological effects. Any adverse ecological effects due to redirected fishing effort would likely be minimal because a closure would probably occur very late in the fishing year, if at all.

Alternative 1e, allocation of 250 Atlantic marlin landing tags, represents another method to facilitate compliance with ICCAT's 250 fish marlin limit. Depending upon how a tag program is implemented (*i.e.*, distribution based on fishing history, fee payments, a lottery, or on a first come-first serve basis), this alternative could result in changes to the fishery. The extent to which these changes reduce marlin fishing effort cannot be reliably predicted. If an angler knew at the start of the season that they are unable to land a marlin because they do not possess a tag, they might be less likely to target marlins and, instead, redirect their effort onto other species. Some marlin would likely be conserved because, under any distribution scenario, there would not be enough tags to meet expected demand from tournaments and anglers. However, post release mortality could still occur. Overall, this alternative would have positive ecological impacts for target species, but not to the degree that Alternative 1b has. Expected impacts on bycatch of non-target species, protected species, and EFH would be either neutral or slightly positive, similar to Alternatives 1c and 1d. If anglers not possessing tags redirect fishing effort onto other pelagic species such as tuna, sailfish, pelagic sharks, swordfish, dolphin and wahoo, some negative ecological impacts could result.

4.1.2 Economic Impacts

The economic importance and the value of the recreational marlin fishery are discussed in the Billfish Amendment (NMFS, 1999a) and the 2001, 2002, and 2003 SAFE reports (NMFS, 2001; NMFS 2002b; NMFS 2003). Section 6.1 of this document discusses the economic impacts of the alternatives on affected entities. As discussed above, recreational anglers voluntarily release most marlin. Similarly, many big game fishing clubs utilize an all catch and release format for billfish. Billfish fishing is generally conducted by persons with personal incomes that are above the average U.S. per capita income (Ditton and Stoll, 1998). The value is in the experience of catching a billfish but, during a tournament, the possibility of bringing in "the big one" contributes to the experience. In addition, RBS data suggest that annual domestic landings of marlin are already below the 250 fish landing limit, although non-tournament landings are incomplete. The recent implementation of mandatory reporting of recreational landings is expected to improve the quality of U.S. landings data. If marlin landings are below the 250 fish limit and if anglers maintain current levels of fishing effort, then the economic impacts of each of the alternatives are expected to be minimal.

Alternative 1a, the no-action alternative, would not cause direct economic impacts to the U.S. recreational marlin fishery. However, if the landing limit is achieved, NOAA Fisheries would likely need to take emergency action to close the fishery (*i.e.*, catch and release only), which could cause adverse economic impacts. Emergency action would not promote stability or predictability within the fishery's management regime due to uncertainties regarding when, and if, a closure would be implemented.

Alternative 1b, year-round catch and release only, was discussed and analyzed in the Billfish Amendment (NMFS, 1999a). This alternative could potentially lead to negative economic impacts. Although 74 to 99 percent of recreationally caught billfish are released, it is difficult to estimate the percentage of fishing trips that would not be taken if catch and release fishing was mandatory. Tournaments that require landings as part of the criteria used to determine winners and trophy anglers (*e.g.*, for a marlin mount) would be prohibited from landing Atlantic blue or white marlin. This could reduce the number of tournaments and tournament participation, thereby resulting in economic losses to associated businesses. Similarly, if potential charter/headboat anglers choose to forego a fishing trip altogether because there is no possibility of landing a marlin, economic losses would result. The impact would be multiplied if the economic losses of dependent shoreside businesses such as tackle shops, taxidermists, marinas, restaurants, and hotels were considered. The total annual expenditure estimates generated by Fisher and Ditton (1992) indicated that in 1989, billfish tournament anglers spent an estimated \$180 million in attempting to catch billfish (tournament and non-tournament trips), giving an average equivalent expenditure of \$4,242 for each fish caught or \$32,381 for each billfish landed. If the \$32,281 figure for each landed billfish is used, then the potential annual short-term economic impact of a zero bag limit (*i.e.*, the projected impact of not landing 250 marlin) could range from \$3.1 to \$8.1 million in reduced expenditures. However, this alternative could have long- term positive impacts and result in an increase in net benefits as stocks rebuild and recreational encounters become more frequent.

Alternative 1c, catch and release fishing after 250 marlin have been landed, would produce minimal economic impacts prior to landing 250 marlin. However, afterwards, if landings are prohibited, negative economic impacts similar to those discussed in Alternative 1b could result for the remainder of the fishing year. There could be some short-term increases in management costs associated with communicating the closure to the recreational fishing community. In addition, this alternative could adversely affect fishing activities and tournaments that occur later in the year that require, or rely upon, landings. In summary, it is considered most likely under this alternative that NOAA Fisheries would determine that a landings prohibition is not necessary (for instance, if the projected closure date occurs after the end of the fishing year). In that situation, there would be no negative economic impacts relative to *status quo*.

Alternative 1d (Preferred Alternative), which would increase the minimum size for the remainder of the fishing year, if necessary, when 80 percent of the landing limit has been achieved, is intended to reduce landings in order to remain below the 250-fish limit, without actually prohibiting all landings. Under this alternative, there would be minimal economic impacts prior to landing 200 marlin. Afterwards, there may be limited negative economic impacts. The severity of the impacts would depend upon the date at which the minimum size was increased and angler behavior. However, it is not known with certainty whether the change would reduce angler participation or result in significant negative economic impacts. There is some indication that economic impacts could be minor as evidenced by the fact that many, if not more, tournaments are being held, albeit with lower numbers of marlin landed, than before regulations increasing the minimum size limits became effective (May 29, 1999; 64 FR 29090). Further, many tournaments already specify a minimum size for tournament landed fish that exceed

Federal minimum sizes. Enforcement costs for this alternative would not increase since size limits already exist under current regulations. However, there would be some short-term increases in management costs associated with communicating new size limits to the recreational fishing community. This alternative does contain a preventive backstop measure that would close the fishery (i.e., catch and release only) if the 250 fish landing limit is attained. If the backstop is implemented, then the negative economic impacts associated with Alternative 1b could be realized for a period of time. Fishing activities, such as tournaments, that occur later in the year could be adversely affected under this alternative, as with Alternative 1c. In summary, it is considered most likely under this alternative that NOAA Fisheries would determine that a minimum size increase and a closure are not necessary (for instance, if the 80 percent level is reached very late in the fishing year). In that situation, there would be no negative economic impacts relative to *status quo*.

Alternative 1e, a landing tag program, would most likely produce negative economic impacts on those fishery participants that do not receive a tag(s). Concerns with the initial distribution of the 250 tags would be expected. Prior to implementation, criteria would need to be established to determine how the tags would be allocated. The criteria could be based upon historical participation, landings, geography, other social and economic factors, a lottery-based system, or simply based on a first-come first-serve or some other basis. Conversely, it is possible that this alternative could produce economic efficiencies if the tags are transferrable. Depending upon how the alternative is implemented, anglers who are willing to pay for the privilege of landing a marlin could potentially obtain tags from those anglers who are willing to sell the privilege of landing a marlin. This could lead to concerns about potential consolidation of landings by a few entities. In all likelihood, the administrative costs and potential complexity associated with this alternative, or some variation thereof, are expected to be sizeable. If this alternative is chosen, these issues would be addressed in a separate rulemaking.

4.1.3 Social Impacts

The *status quo* alternative would not have any negative social impacts on the recreational HMS fishing community unless the landing limit was reached and emergency action was needed to close the fishery. However, there would be no mechanism in place to ensure that marlin landings stay within the ICCAT-recommended limit of 250 Atlantic blue and white marlin other than emergency action. Relying upon emergency action to ensure compliance with the limit would not promote stability or predictability within the fishery's management regime due to uncertainties regarding when, and if, a closure would be implemented.

Alternative 1b (catch and release only) could generate negative social impacts, although the magnitude is difficult to assess. In a study of U.S. recreational billfish tournament anglers fishing in the Atlantic, Fisher and Ditton (1992) found that most fishermen were either neutral (16.3 percent), agreed (24.1 percent) or strongly agreed (33.8 percent) with a zero bag limit. In a study of billfish anglers fishing in Puerto Rico, Ditton and Clark (1994) found that residents generally disagreed with a zero bag limit (49.3 percent), while non-residents supported this management measure (58.9 percent). It is also unknown what the reaction would be from non-

tournament billfish anglers. Although there is some evidence that this measure would be supported by the recreational community from these opinion surveys, when faced with an actual zero bag limit, anglers may be much more resistant to this management measure. Previous proposals to restrict landings, other than through the use of minimum sizes, have met with strong social opposition, such as during development of the Billfish Amendment, and in subsequent actions.

Alternative 1c (catch and release fishing after the landing limit is attained) would not have any negative social impacts on the recreational HMS fishing community prior to landing 250 Atlantic blue and white marlin. After the landing limit has been achieved, and the fishery becomes catch and release, negative social impacts similar to those discussed in Alternative 1b could be likely. In addition, this alternative could adversely affect areas and tournaments where fishing activity occurs later in the fishing year. It is considered most likely under this alternative that NOAA Fisheries would determine that a landings prohibition is not necessary (for instance, if the limit is projected to be reached after the end of the fishing year). In that situation, there would be no negative social impacts relative to the *status quo*.

Alternative 1d (minimum size increase when 80% of limit is achieved) (Preferred Alternative) would not have any negative social impacts on the recreational HMS fishing community prior to landing 80 percent of the limit (200 fish). Once 200 fish have been landed, the blue and white marlin minimum sizes could be increased to an appropriate size that would allow the 250 fish limit to be achieved, but not exceeded. This alternative is intended to allow marlin landings for the longest period of time possible to minimize any potential negative social and economic impacts, yet comply with ICCAT recommendation 00-13. It is not anticipated that the temporary change in minimum size would significantly reduce angler participation or result in sizeable negative social impacts. Recreational billfish anglers have generally been supportive of increased minimum fish sizes in lieu of more restrictive measures (e.g., catch and release only). Nevertheless, to the degree that a minimum fish size increase does generate negative social impacts, this alternative could adversely affect fishing activity and tournaments that occur later in the fishing year. This alternative does contain a preventive backstop measure that would close the fishery (*i.e.*, catch and release only) if 100 percent of the landing limit is reached. Given historical fishing patterns and current landings, if the backstop is implemented, then the negative social impacts associated with Alternative 1b would likely be realized for only a short period of time, as the limit would likely be reached late in the fishing season. It is considered most likely under this alternative for NOAA Fisheries to determine that a minimum size increase and a closure are not necessary (for instance, if the 80 percent level is reached very late in the fishing year). In that situation, there would be no negative social impacts, relative to *status quo*.

Alternative 1e (landing tag program) would most likely produce negative social impacts for those fishery participants that do not receive a tag(s). There could be concerns associated with the initial distribution of the 250 tags that are beyond the scope of this EA, and would be analyzed in a separate rulemaking if this alternative is chosen. Prior to implementation, criteria would need to be established to determine how the tags would be allocated. The criteria could be based upon a lottery, historical participation, landings, geography, or on a first-come first

serve basis or other factors. Depending upon how this alternative is implemented, anglers who are willing to pay for the privilege of landing a marlin could possibly obtain tags from anglers who are willing to sell the privilege of landing a marlin. In that situation, there may be social issues associated with consolidation of landings by a few entities. If this alternative is chosen, these issues would be addressed in a separate rulemaking.

4.1.4 Conclusion

Available data suggest that the United States has been below the 250 marlin landing limit in recent years. If this pattern were to continue, only Alternative 1b (year-round catch and release fishing), and possibly Alternative 1e (landings tag program), would be expected to produce adverse social and economic impacts. However, while figures on marlins landed in tournaments are considered reliable, non-tournament landings are less certain. Therefore, it is difficult to precisely estimate the ecological, economic, and social impacts associated with implementation of a 250-fish Atlantic marlin landing limit. Monitoring of landings is expected to improve with the recent implementation of a mandatory reporting requirement (January 7, 2003; 68 FR 711). If the United States remains below the 250-fish Atlantic marlin landing limit, which is expected to occur, then any negative ecological, economic, and social impacts associated with the other proposed alternatives would not change, or would be minimal. Also, if recreational anglers continue to take fishing trips and tournaments continue to occur under a catch and release scenario, then any negative economic and social impacts associated with the other alternatives would be far less. If domestic Atlantic marlin landings do exceed 250 fish, it is difficult to predict ecological, economic, and social impacts, as angler response could vary from redirecting fishing effort onto other pelagic species, or by not fishing altogether.

In summary, the preferred Alternative 1d (a minimum size increase at 80 percent of the limit) is intended to ensure compliance with ICCAT Recommendation 00-13, yet still allow some level of landings throughout the year. It is expected to produce the fewest negative social and economic impacts (unless the landing limit is achieved despite the increase in minimum sizes). Alternative 1a (*status quo*) could potentially produce few, if any, adverse social or economic impacts, but it would not ensure compliance with ICCAT Recommendation 00-13 and could result in emergency action to close the fishery if the limit is attained. Alternative 1b (year-round catch and release fishing), if selected, would likely have the largest negative social and economic impacts but would have the greatest likelihood at conserving marlin. Alternative 1c (catch and release fishing after achieving the limit) would not result in a change in impacts if the limit is not achieved, but could produce negative social and economic impacts if the limit is achieved and adversely affect areas where fishing activity occurs later in the fishing year. Finally, Alternative 1e (landings tag program) would likely have associated negative social impacts, and high administrative costs.

With regards to ecological impacts, Alternative 1b (year round catch and release fishing) would have the greatest probability of conserving Atlantic marlins. All of the other alternatives would allow some marlin to be landed, however that level would be within the constraints of the

rebuilding program (250 fish). Any closure (catch and release fishing) has the potential of redirecting fishing effort onto other pelagic species, but not at levels that would be expected to produce adverse effects.

4.2 Clarify and Make Consistent Recreational Reporting Requirements by Specifying that Vessel Owners, Rather Than Anglers, Are Required to Report Non-Tournament Recreational Landings of HMS

This proposed action would clarify, and make consistent, final regulations which were published in the Federal Register of Tuesday, January 7, 2003, by specifying that owners of vessels permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category must report landings of bluefin tuna under the Angling category, and that owners of vessels permitted, or required to be permitted, in the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category must report all non-tournament recreational landings of billfish and swordfish. Inadvertently, the regulations of January 7, 2003 (68 FR 711) indicated that anglers are required to report non-tournament recreational landings of billfish and swordfish, while other regulations currently indicate that vessel owners are required to report recreational landings of bluefin tuna under the Angling category. The proposed action would remove these inconsistencies and clarify NOAA Fisheries' intent that the vessel owner, rather than the angler, is responsible for reporting non-tournament recreational landings of HMS. The alternatives are:

Alternative 2a - (No Action Alternative) Retain current regulations specifying that anglers, rather than vessel owners must report all non-tournament billfish and swordfish landings.

Alternative 2b - (PREFERRED ALTERNATIVE) Amend regulations to specify that vessel owners must report non-tournament recreational landings.

4.2.1 Ecological, Economic, and Social Impacts Associated With Alternative 2a (No Action Alternative)

This alternative would retain the current regulatory language at § 635.5(c)(2), which specifies that anglers, rather than vessel owners, must report all non-tournament landings of Atlantic blue marlin, Atlantic white marlin, Atlantic sailfish, and North Atlantic swordfish by calling NOAA Fisheries. There would be no significant ecological or economic impacts associated with this alternative because recreational reporting is primarily an enforcement and administrative function and involves only a toll-free call to NOAA fisheries when a billfish or swordfish is landed. There would be no change in fishing effort or activity as a result of retaining the *status quo*. There would, however, be adverse social impacts and enforcement problems because of inconsistencies with similar regulations for bluefin tuna which specify that vessel owners are required to report landings which are regulated under the Angling category. Furthermore, as permits are issued to vessel owners, not anglers, the recreational reporting requirement should logically, and for enforcement reasons, be similarly incumbent on vessel owners. Because vessel

owners are the permittees, they are more likely to be familiar with the regulations governing their fishery as opposed to an angler onboard, possibly for just a day. Also, if several fish are landed on a vessel by different anglers, the current regulations would require each angler to report their fish as opposed to just the vessel owner reporting all of the fish. Finally, the current regulations are inconsistent with the original intent of NOAA Fisheries in implementing the regulation. In response to a comment on the proposed rule (January 7, 2003, 68 FR 711), NOAA Fisheries said, “Owners of HMS Angling permitted vessels and Charter/Headboat operators are responsible for reporting all non-tournament billfish/swordfish landings because not all charter/headboat vessels are selected to submit logbooks as specified under 50 CFR 635(a).”

4.2.2 Ecological, Economic, and Social Impacts Associated With Alternative 2b (Preferred Alternative)

This alternative would amend the current regulatory language at § 635.5(c)(2), by specifying that vessel owners must report all non-tournament landings of Atlantic blue marlin, Atlantic white marlin, Atlantic sailfish, and North Atlantic swordfish by calling NOAA Fisheries. For the same reasons discussed above, there would be no significant ecological or economic impacts associated with this alternative because recreational reporting is primarily an enforcement and administrative function. There would be no change in fishing effort or activity as a result of amending the regulations consistent with Alternative 2b. There would, however, be positive social impacts because recreational reporting responsibilities would be consistent for all HMS. Also, because permits are issued to vessel owners, enforcement and compliance would be enhanced by potentially linking non-reporting to permit sanctions. Compliance would be further enhanced because vessel owners (*i.e.* permittees) are likely to be more familiar with the regulations governing their fishery. Finally, this proposed regulation could reduce the number of reporting calls to be made if, for example, several fish are landed on a vessel by different anglers.

4.3 Impacts on Essential Fish Habitat (EFH)

The Billfish Amendment (NMFS, 1999a) and Section 3.3 of this document provide a complete description of Atlantic marlin EFH. EFH for other HMS is described, and EFH charts are provided, in the EFH section of the HMS FMP (NMFS, 1999b). Generally, marlin occupy pelagic oceanic environments throughout all phases of their life. The alternatives to limit annual U.S. recreational landings to 250 Atlantic blue and white marlin, combined, with an annual carryover provision for landings above/below the landing limit, are not expected to have any negative impacts on nursery or pelagic EFH utilized by these or other species. These recreational fisheries are prosecuted with rod and reel gear, which do not significantly interact with benthic habitat. The alternatives that would clarify that vessel owners are required to report recreational non-tournament landings of billfish and swordfish are solely administrative, and are not expected to have any negative impacts on EFH.

4.4 Impacts on Protected Species

The proposed actions are not expected to create any additional negative impacts on protected species, because recreational fishing practices or fishing effort are not anticipated to change substantially under any of the alternatives. The billfish fishery is conducted solely with rod and reel gear. The ESA Biological Opinion of June 14, 2001, concluded that the rod and reel fishery may adversely affect, but is not likely to jeopardize the continued existence, of any threatened or endangered sea turtles. Similarly, rod and reel gear is listed as a Category III fishery under the MMPA, because of its low likelihood of interacting with marine mammals. Recreational fishing interactions with protected species (e.g., marine mammals, sea turtles, sea birds) are receiving increased attention by various management entities including NOAA Fisheries. Improved bycatch monitoring measures may be implemented in future rulemaking to better assess impacts of recreational fishing on protected species. The alternatives that would clarify that vessel owners are required to report recreational non-tournament landings of billfish and swordfish are solely administrative, and are not expected to have any negative impacts on protected species.

4.5 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 preferred alternatives should not have a disproportionate effect on minority and low-income communities. The preferred alternatives would not have any effects on human health. Economic and social effects would be in communities associated with Atlantic billfish and North Atlantic swordfish recreational angling (*i.e.*, motels, restaurants, marinas, tackle shops, and charter/head boats), and are expected to be minor and should not disproportionately impact minority or low income communities.

4.6 Coastal Zone Management Act Concerns

This proposed rule is consistent to the maximum extent practicable with the enforceable policies of the approved coastal management programs of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas. This determination will be submitted for review by the responsible state agencies prior to publication of the final rule.

4.7 Comparison of Alternatives

Table 2 provides a relative qualitative comparison of the marlin alternatives described in Section 2.1 with regard to their ecological, economic, and social impacts. A positive sign (+) indicates positive impacts such as increased stock abundance, increased gross revenues, or social satisfaction. A negative sign (-) indicates negative impacts such as decreased stock abundance, decreased gross revenues, or social dissatisfaction. N/C indicates that there would be no change to existing impacts. A question mark (?) indicates that the impacts are unknown. The most recent angler survey indicates that 74 percent to 99 percent of recreationally caught marlin are released. However, it is difficult to predict if anglers would stop fishing, practice catch and

release fishing, or switch to alternative species if a zero-retention limit for marlin were implemented, which is why some impacts are unknown. Also, it is difficult to predict whether Alternatives 1c through 1e would be constraining to anglers, given that marlin landings have been well below the landing limit in recent years. For the purpose of the analysis in Table 2, NOAA Fisheries currently anticipates that marlin landings will be below the landing limit and not require a fishery closure (*i.e.* catch and release). Therefore, no change in impacts is expected under many of the alternatives.

Table 2. Relative Comparison of Impacts Associated with the Marlin Alternatives.

	Ecological Impacts (target species)	Ecological Impacts (non-target species, EFH, & PR)	Economic Impacts	Social Impacts
Alternative 1a (no action)	N/C	N/C	N/C	N/C
Alternative 1b (catch & release)	++	?	-	-
Alternative 1c (c & r at 250)	+	N/C	N/C	N/C
Alternative 1d (▲ min size at 200 fish)	+	N/C	N/C	N/C
Alternative 1e (tag program)	+	?	-	-

Table 3 provides a relative qualitative comparison of the alternatives described in Section 2.2 (owner/angler recreational reporting requirements) with regard to their ecological, economic, and social impacts. A positive sign (+) indicates positive impacts such as increased stock abundance, increased gross revenues, or social satisfaction. A negative sign (-) indicates negative impacts such as decreased stock abundance, decreased gross revenues, or social dissatisfaction. N/C indicates that there would be no change to existing impacts.

Table 3. Relative Comparison of Impacts Associated with the Reporting Alternatives.

	Ecological Impacts (target species)	Ecological Impacts (non-target species, EFH, & PR)	Economic Impacts	Social Impacts
--	--	---	-------------------------	-----------------------

Alternative 2a (no action)	N/C	N/C	N/C	-
Alternative 2b (owners report)	N/C	N/C	N/C	+

4.8 Cumulative Impacts

Section 1.1.1 of the Billfish Amendment (NMFS 1999) provides a complete history of Atlantic billfish fishery management. Sections 1.1 and 3.2 of this EA summarize the history of the billfish fishery and provide information on participants and recent management activities. Overall, the alternatives considered in this EA/RIR/IRFA, which include the implementation of an annual 250 fish landing limit for Atlantic marlin, and clarification that vessel owners are required to report recreational non-tournament landings of billfish and swordfish are not expected to significantly change current fishing practices or create impacts beyond those previously addressed in the HMS FMP or in the Billfish Amendment. NOAA Fisheries is not aware of any other major present, or reasonably foreseeable, impacts as a result of actions taken on behalf of other governmental agencies or third parties that would affect Atlantic marlin or other HMS. For the foreseeable future, NOAA Fisheries is considering on-line tournament registration and reporting, an EFH review for HMS, reevaluation of authorized fishing gears and techniques, and reevaluation of HMS logbook reporting and cost-earnings reporting. This proposed action is expected to be consistent with these future activities, and consistent with the goals and objectives of the HMS FMP and Atlantic Billfish FMP. Thus, NOAA Fisheries considers that this action is consistent with past, current, and foreseeable actions with no adverse, cumulative impacts on the environment resulting from the alternatives that are being considered.

5.0 MITIGATION AND UNAVOIDABLE ADVERSE IMPACTS

5.1 Mitigating Measures

The United States is obligated, under ATCA, to implement ICCAT recommendations. A failure to do so in a timely manner could increase the need for more restrictive measures in the future. Any adverse impacts associated with alternatives are expected to be minor if U.S. marlin landings remain below the proposed 250 fish annual landing limit. However, to mitigate any potential adverse impacts from this action, NOAA Fisheries will undertake or continue the following measures:

Promotion of a Circle Hook Outreach Program

Through various constituent groups, trade publications and federal and state agencies, NOAA Fisheries will promote a circle hook outreach program and encourage charter boat and headboat operators and recreational anglers to use circle hooks. Use of circle hooks in other large pelagic recreational fisheries has been shown to reduce foul-hooking, which would

potentially decrease discard mortality levels for released billfish and swordfish. This will be especially beneficial for the recreational swordfish fishery, where there is concern about levels of mortality on juveniles.

Atlantic Billfish Carryover Provision

The proposed carryover provision for marlin landings above or below the annual limit is an important component of each of the Atlantic marlin alternatives (with the exception of the no-action alternative). For landings under/over the 250-fish limit, underages/overages from one year may be added to/must be subtracted from the catch limit of the management period immediately after or one year after that year. Therefore, if the United States lands less than 250 Atlantic blue and white marlin, combined, in one year then the following year's allocation may be increased by an amount equivalent to the underage. This increases the likelihood of maximizing the available catch and has obvious mitigating importance when considering the potential social and economic impacts of the alternatives. Any negative economic and social impacts would be reduced if an underage in one year translates into a higher landing limit the next year. However, any negative economic and social impacts would be greater if an overage in one year translates into a lower landing limit the next year.

HMS Recreational Fishing Permit

NOAA Fisheries has recently implemented a requirement for an HMS Angling category fishing permit. This permit is expected to improve recreational monitoring and assessment, and support angler outreach and education initiatives.

HMS Recreational Monitoring Program

NOAA Fisheries has recently implemented a mandatory HMS recreational monitoring program whereby all recreational landings of Atlantic marlin, sailfish and swordfish are required to be reported. This reporting requirement is expected to improve recreational monitoring and assessment.

Non-Target Finfish and Protected Species

NOAA Fisheries will investigate enhanced data collection activities on interactions with non-target finfish and protected species through logbooks, surveys, and where appropriate, observers.

5.2 Unavoidable Adverse Impacts

Only minimal adverse impacts are expected from any of the alternatives considered here, with the exception of potential adverse ecological, economic or social impacts associated with non-preferred Alternatives 1a, 1b, and 1e. Any short-term adverse impacts imposed by the preferred alternatives are necessary to comply with Phase I of the Atlantic blue and white marlin rebuilding plan as established by the 2000 ICCAT recommendations. In addition, NOAA

Fisheries has provided for mitigating measures under Section 5.1.

5.3 Irreversible and Irretrievable Commitment of Resources

No irreversible or irretrievable commitment of resources is expected under any of the alternatives.

6.0 ECONOMIC EVALUATION

6.1 Implement ICCAT Recommendations to Limit Annual U.S. Recreational Landings to 250 Atlantic Blue and White Marlin, Combined, with an Annual Carryover Provision for Landings Above/Below the Landing limit

The overall economic effects of the preferred and other alternatives are provided in Section 4.1.2. This section examines the economic effects upon charter vessels and other affected entities.

6.1.1 Number of Fishing and Dealer Permit Holders

The universe of potentially affected vessel owners could include the following: the 13,263 vessels permitted as of October 31, 2002, in the Atlantic tunas Angling (recreational) category, and, the 3,659 vessels permitted as of October 31, 2003, in the HMS Charter/Headboat permit category. The Atlantic tunas Angling category permit was replaced with the Atlantic HMS Angling (recreational) category permit on March 1, 2003. The new Atlantic HMS Angling category permit is now required to fish recreationally for Atlantic tunas, swordfish, sharks, and billfish. The extent of overlap between vessels that already had an Atlantic tunas Angling category permit and those that are now required to obtain an Atlantic HMS Angling category permit is expected to be relatively high, possibly as much as 90 percent. This would result in approximately 1,326 additional HMS Angling category permit holders. Thus, the universe of affected vessel owners (*i.e.*, those vessels with either an Atlantic HMS Angling category permit or an HMS Charter/Headboat permit) could potentially be as high as 18,248 vessels.

The total population of billfish anglers has not been definitively quantified. Not all vessels possessing an HMS Angling category permit or an HMS Charter/Headboat permit actively participate in the Atlantic billfish fishery. The proposed marlin action would most directly affect only active participants in the recreational Atlantic marlin fishery. The Billfish Amendment estimated that there were approximately 7,915 U.S. tournament billfish anglers in the western Atlantic in 1989. An estimate of 10,000 affected billfish anglers is being used for the purpose of this analysis, based on figures contained in the Environmental Assessment to Amend the HMS Fishery Regulations Associated with Charter/Headboat Operations and Require Permits for Vessels Fishing Recreationally for HMS (November 2002). NOAA Fisheries anticipates that the newly required HMS Angling category permit will provide more precise estimates in the future. Since the proposed action only affects recreational fishing and no sale of the catch is allowed, there are no affected dealers.

Atlantic billfish tournaments could also be potentially affected by the proposed marlin action. The Billfish Amendment (NMFS 1999) estimated that there are approximately 300 - 400 HMS tournaments per year along the U.S. Atlantic coast (including the Gulf of Mexico and the Caribbean). An examination of more recent data indicates approximately 103 annual marlin-specific tournaments.

As mentioned above, recently implemented regulations requiring an Atlantic HMS angling category permit and mandatory self-reporting of recreationally-landed Atlantic billfish are expected to significantly improve the quality of data regarding the HMS recreational fishery by providing a more accurate estimate of the universe of affected entities, total effort in the recreational sector, and billfish and swordfish recreational landings.

6.1.2 Gross Revenues of Fishermen

As indicated in Section 6.1.1, the proposed action could potentially affect HMS recreational anglers, charter/headboats, and tournaments. Gross revenue information is available only for charter/headboats.

Recreational Anglers

Recreational fisheries have a large influence on the economies of coastal communities. An economic survey done by the U.S. Fish and Wildlife Service in 2001 found that 9.1 million saltwater anglers went on approximately 72 million fishing trips and spent approximately \$8.4 billion (USFWS, 2001). Expenditures included lodging, transportation to and from the coastal community, vessel fees, equipment rental, bait, auxiliary purchases (e.g. binoculars, cameras, film, foul weather clothing, etc.), and fishing licenses (USFWS, 2001). Saltwater anglers spent \$4.5 billion on trip related costs and \$3.9 billion on equipment (USFWS, 2001). Unfortunately, NOAA Fisheries currently has little specific information on the costs and expenditures of HMS recreational anglers or the businesses that rely on them.

In general, most recreational anglers do not target HMS. According to the American Sportfishing Association (ASA), in 1996 the most commonly caught species by number overall were spotted seatrout, summer flounder, Atlantic croaker, black sea bass, bluefish, and striped bass. Thirteen percent of the total recreational harvest came from the Atlantic and Gulf of Mexico Exclusive Economic Zone (EEZ). The species most commonly caught in federally-managed waters were black sea bass, Atlantic mackerel, dolphin, red snapper, and bluefish.

In 2001, the most commonly caught species, by number, in the Atlantic by recreational fishers were summer flounder, Atlantic croaker, bluefish, black sea bass, and striped bass. The top five most commonly caught recreational fish, by weight, included yellowfin tuna, the only HMS on the list. The most commonly caught species in federally-managed Atlantic waters were black sea bass, dolphin, Atlantic cod, summer flounder, Atlantic mackerel, and bluefish. The most commonly caught species, by number, in the Gulf of Mexico were spotted and sand seatrouts, red drum, white grunt, blue runner, Spanish mackerel, and Atlantic croaker. No HMS made the

top five list for most commonly caught recreational species by weight in the Gulf of Mexico. The most commonly caught species, by number, in federally-managed Gulf of Mexico waters were white grunt, red snapper, black sea bass, dolphin, and greater amberjack.

Charter/Headboats

In 2001, NOAA Fisheries began requiring all charter/headboat vessels fishing for Atlantic HMS to have a permit. The information below summarizes existing information and was initially reported in the 2001 SAFE report. The information indicates that a few thousand vessels either target, or feel they could catch, Atlantic HMS. However, HMS, particularly Atlantic marlin and North Atlantic swordfish, are generally not the primary target species for most charter boats and headboats, overall.

In 1998, a survey was completed of a number of charter boats (96 of an estimated 430) and party boats (21 out of 23) throughout Alabama, Mississippi, Louisiana, and Texas (Sutton *et al.*, 1999). The study provided some economic information related to HMS. Charter boats were defined as for-hire vessels that carry six or fewer passengers in addition to the crew, while party boats were defined as for-hire vessels that carry more than six passengers (up to 150 passengers). The study found that the average charter boat base fee was \$417 for a half day trip, \$762 for a full day trip, and \$1,993 for an overnight trip, and that 60 percent of all trips were taken from May through August. The average party boat base fees were \$41 for a half day trip, \$64 for a full day trip, and \$200 for an overnight trip, and 48 percent of all trips were taken from May through August. It found that 55 percent of charter boat operators reported targeting tuna at least once, 38 percent targeted sharks at least once, and 41 percent reported targeting billfish at least once. Percentages by state are summarized in Table 4. Snapper (49 percent), king mackerel (10 percent), red drum (6 percent), cobia (6 percent), tuna (5 percent), and speckled trout (5 percent) were the species that received the largest percentage of effort by charter boat operators.

In the Sutton *et al.* study, party boat operators in the Gulf of Mexico did not frequently target sharks, tunas, or billfish. A total of 65 percent of party boat operators reported targeting sharks at least once, and 55 percent indicated they had targeted tunas at least one time. Ninety percent reported that they did not target billfish. Snapper (70 percent), king mackerel (12 percent), amberjack (5 percent), and sharks (5 percent) were the species that received the largest percentage of effort by party boat operators. The economic information is summarized in Table 5.

Holland *et al.* (1999) conducted a similar study on charter boats (boats that carry six or less passengers and charge for the entire boat) and headboats (boats that carry 10 or more passengers and charge by the person) in Florida, Georgia, South Carolina, and North Carolina. The survey interviewed 403 charter operators (24 percent of the estimated number of charter boats) and 52 headboat operators (35 percent of the estimated number of headboats). The average fees for charter and headboats are listed in Table 6. Charter and headboat operators did not target HMS as frequently as they did other species such as mackerel, grouper, snapper, dolphin, and red drum. The percentage of charter and headboat operators who reported targeting HMS is found in

Table 7. Table 8 shows the economic information regarding these businesses.

According to these studies (Sutton *et al.* (1999), and Holland *et al.* (1999)), the average annual gross revenue for charter boats in the Gulf of Mexico was \$68,934; in Florida, the average annual gross revenue for charter boats was \$56,264; and, in other Southeast Atlantic states, the average annual gross revenue for charter boats was \$26,304 - \$60,135.

Overall, charter and headboats appear to provide a substantial amount of employment and are economically important to coastal communities. Although billfish are targeted, they do not appear to be the primary objective for the majority of operations. In the Southeast, the states with the largest percentage of charterboats targeting billfish are North Carolina, South Carolina, Alabama, Louisiana, and Texas. The state with the largest overall economic output generated by charter boats (all species) is Florida.

Table 4. The percent of charter boat operators in Alabama, Louisiana, Mississippi, and Texas who reported targeting HMS at least once. Source: Sutton *et al.*, 1999.

Target		Alabama	Louisiana	Mississippi	Texas
Tuna	Yes	61.9	66.7	6.3	65.2
	No	38.1	33.3	93.8	32.6
	Incidental	0.0	0.0	0.0	2.2
Sharks	Yes	4.5	16.7	75.0	67.4
	No	95.5	66.7	18.8	42.7
	Incidental	0.0	16.7	6.3	32.6
Billfish	Yes	61.9	41.7	6.3	43.5
	No	38.1	58.3	93.8	56.5

Target		Alabama	Louisiana	Mississippi	Texas
	Incidental	0.0	0.0	0.0	0.0

Table 5. The financial operations and economic impact of charter and headboat operators in Alabama, Louisiana, Mississippi, and Texas. Source: Sutton *et al.*, 1999.

		Charter boats	Headboats
Average capital investment	Hull and superstructure	\$97,713	\$214,922
	Engine	\$9,058	\$2,571
	Electronics	\$5,231	\$7,429
	Other equipment and tackle	\$7,298	\$6,686
Annual costs	Wages and Salaries	\$19,725	\$64,064

		Charter boats	Headboats
	New hull or superstructure	\$18,300	\$23,076
	Maintenance and repair	\$8,584	\$26,919
	Engine	\$4,890	\$15,153
	Insurance	\$3,799	\$11,491
	Other costs	\$6,020	\$28,404
Average annual gross revenues		\$68,934	\$137,308
Average annual net revenues (includes capital expenses - e.g. purchase of new hull)		-\$12,099	-\$128,703
Average annual operating profit (does not include capital expenses - e.g. purchase of new hull)		\$14,650	-\$73,064
Economic output	Alabama	\$13.8 M	\$0.8 M
	Mississippi	\$6.6 M	-
	Louisiana	\$4.4 M	-
	Texas	\$17.6 M	\$3.5 M
Employment generated	Alabama	\$5.6 M (282 jobs)	\$0.3 M (16 jobs)
	Mississippi	\$2.1 M (211 jobs)	-
	Louisiana	\$1.8 M (118 jobs)	-
	Texas	\$6.1 M (385 jobs)	\$1.7 M (77 jobs)

Table 6. The average fees for charter and headboats in Florida, Georgia, South Carolina, and North Carolina. Source: Holland *et al.*, 1999.

State	Length of trip	Charter boats	Headboats
Florida	Half-day	\$348	\$29
	Full day	\$554	\$45
	Overnight	\$1,349	--
Georgia	Half-day	\$320	--
	Full day	\$562	--

State	Length of trip	Charter boats	Headboats
	Overnight	\$1000-\$2000	--
South Carolina	Half-day	\$296	\$34
	Full day	\$661	\$61
	Overnight	\$1000-\$2000	--
North Carolina	Half-day	\$292	\$34
	Full day	\$701	\$61
	Overnight	\$1000-\$2000	--

Table 7. The percent of charter and headboat operators in Florida, Georgia, South Carolina, and North Carolina who reported targeting HMS at least once. Source: Holland *et al.*, 1999.

Target species	Florida		Georgia		S. Carolina		N. Carolina	
	Charter	Head	Charter	Head	Charter	Head	Charter	Head
Tuna	8.5	0.0	8.3	-	0.0	-	60.0	-
Sharks	22.6	9.7	33.3	-	35.0	-	23.3	-
Billfish	9.9	0.0	8.3	-	20.0	-	40.0	-

Table 8. The financial operations and economic impact of charter and headboat operators in Florida, Georgia, South Carolina, and North Carolina. Source: Holland *et al.*, 1999.

		Charter boats		Headboats	
		Florida	Other states	Florida	Other states
Average capital investment	Hull and superstructure	\$90,989	\$39,445	\$214,158	\$178,833
	Engine	\$40,518	\$5,900	\$40,000	\$38,181
	Electronics	\$5,568	\$5,900	\$5,560	\$6,277
	Other equipment and tackle	\$5,878	\$4,463	\$9,183	\$3,600
Annual costs	Wages and Salaries	\$25,810	\$17,928	\$52,000	\$33,077
	New hull or superstructure	\$3,020	\$793-1,340	\$3,333	\$0.00
	Maintenance and repair	\$5,720	\$4,991-6,910	\$13,385	\$16,577
	Engine	\$6,334	\$172-2,738	\$9,450	\$14,545
	Insurance	\$2,970	--	\$8,570	--
	Other costs	\$24,723	\$971-18,883	\$48,999	\$40,846
Average annual gross revenues		\$56,264	\$26,304-\$60,135	\$140,714	\$123,000
Average annual net revenues (Gross revenues - Annual costs)		-\$12,313	\$3,069-13,237	\$4,977	\$17,955
Economic output		\$128 M	\$34.4 M	\$23.4 M	\$5.8 M
Employment generated		\$31 M (3,074 jobs)	\$15.6 M (1,066 jobs)	\$5.8 M (450 jobs)	\$2.2 (81 jobs)

HMS Tournaments

The most recent economic information associated with HMS tournaments can be found in the HMS FMP and in the Billfish Amendment. Tournaments are often sponsored by vessel and engine manufacturers, equipment manufacturers, marinas, civic organizations, communities and fishing clubs. An internet search for HMS tournaments found that HMS tournaments often charge large entry fees for a team (\$395 to \$5000). The number of vessels and participants at each tournament is diverse. The smallest tournament found on the internet had 18 vessels and 58 anglers participating. Some are likely smaller. The larger tournaments had between 250 and 400 vessels and over 1,300 anglers participating.

In general, it appears that billfish and tuna tournaments charge higher entry fees and award more

prize money than shark tournaments, although all species have a wide range. The internet search found that some tournaments award between \$500 and \$50,000 in prizes (third through first place), while others award much larger prizes ranging from \$81,000 to \$840,000 in prizes. Some tournaments also award equipment such as new cars, boats, fishing tackle with, or instead of, monetary prizes. The total amount of prize money distributed at any one tournament ranged from \$9,500 to \$2,385,900.

Many tournaments also hold a “calcutta” where anglers pay between \$200 to \$5,000 to win more money than the advertised tournament prizes for a particular fish. Tournament participants do not have to enter calcuttas. Tournaments with calcuttas generally offer different levels depending upon the amount of money an angler is willing to wager. Calcutta prize money is distributed based upon the percentage of the total amount entered into that calcutta. Therefore, first place winner of a low level calcutta (entry fee ~\$200) could win less than a last place winner in a high level calcutta (entry fee ~\$1,000). On the internet, it was not always clear if the total amount of prizes distributed by the tournament included prize money from the calcuttas or the estimated price of any equipment. As such, the range of prizes discussed above could be a combination of fish prize money, calcutta prize money, and equipment/trophies.

Tournaments also can generate a substantial amount of money for the surrounding communities and local businesses. Besides the entry fee for the tournament and possibly the calcutta, anglers may pay for marina space and gas (if they have their own vessel), vessel rental (if they do not have their own vessel), meals and awards dinners (if not covered by the entry fee), hotel, fishing equipment, travel costs to and from the tournament, camera equipment, and other miscellaneous expenses. Fisher and Ditton (1992) found that the average angler who attended a billfish tournament spent \$2,147 per trip and that billfish tournament anglers spent an estimated \$180 million in 1989. Ditton and Clark (1994) estimated that the total annual net economic benefits of billfish tournaments in Puerto Rico was \$18 million. These impacts have likely increased.

6.1.3 Variable Costs and Net Revenues to Fishermen

This section focuses upon the variable costs and net revenues of charter boats, because it is not possible to measure these parameters for recreational anglers and tournaments.

The Sutton *et al.*, study (1999) indicates that the average annual net revenue (gross revenues - annual costs) of charter boats in the Gulf of Mexico ranged from - \$12,099 to + \$14,650. The Holland *et al.*, study (1999) indicated that the average annual net revenue of charter boats in Florida was - \$12,313, and in other Southeast Atlantic states, average annual net revenues ranged from \$3,069 to \$13,237. These figures indicate that many charter boats are either marginally profitable or unprofitable. Wages and “other costs” constitute the largest category of annual variable costs.

6.1.4 Expected Economic Impact of the Alternatives

A detailed comparison of potential economic impacts of the marlin alternatives is provided in Section 8.6.

As discussed in Section 4.1, there are several factors which complicate an analysis of the economic impact of the marlin alternatives. First, there is no definitive measure of the number of marlin that have been landed in recent years. Although NOAA Fisheries has an accurate estimate of the tournament landings, non-tournament landings are largely unknown. With the recent implementation of a mandatory self-reporting system, a more accurate estimate is likely to be obtained in the future. For the time being, however, NOAA Fisheries cannot be certain whether a 250 fish landing limit will be constraining to the recreational fishery or not. As a result, it is not possible to accurately predict whether more restrictive measures, such as an increase in the minimum size or a landings prohibition, will need to be implemented to stay below the landing limit. Another complicating factor is the carryover provision which allows/requires underages/overages from one year to be added to/subtracted from the landing limit in a subsequent year. It is conceivable that underages will lead to a higher landing limit. Finally, the conservation ethic of the recreational fishing community is an important factor. The available information suggests that most billfish are currently released alive. It is difficult to predict whether anglers will continue to fish and/or book marlin trips on charter boats if more restrictive measures are implemented. Given these unknown factors, the following analysis of expected economic impacts assumes both a best case and a worse case scenario. The actual impacts are likely to fall somewhere between this range.

In a best case scenario, there would be no negative economic impacts under any of the alternatives. This would occur if: (1) Marlin landings remain below the 250-fish landing limit; or, (2) there is an underage of the landing limit in an earlier year and marlin landings remain below an adjusted landing limit; or (3) billfish anglers continue to fish and/or book fishing trips and/or participate in tournaments for catch and release fishing, even if the minimum size is temporarily increased marlin or landings are prohibited.

In a worst case scenario, there could be negative economic impacts associated with all of the alternatives. This would occur if anglers stop fishing, and/or booking trips, and/or participating in tournaments because the minimum size is temporarily increased or because marlin landings are prohibited as a result of exceeding the landing limit.

Any potential economic impacts hinge upon if, and when, the landing limit is exceeded and whether anglers continue to fish for marlin if landings are prohibited. Under the worst case scenario, which assumes that the limit is exceeded and anglers stop fishing, the impact would likely be most severe on charter boats, many of which appear to be only marginally profitable. Any significant reduction in fishing activity for charter vessels could result in some going out of business, especially for those that are highly dependent upon marlin fishing. Also, fishing tournaments and dependent shoreside businesses could be adversely affected if fishing activity is significantly curtailed. Fisher and Ditton (1992) reported that the impact of a potential zero bag limit (catch and release fishing only) would be greatest in the Caribbean, where 26 percent of captured billfish are retained, and in the Gulf of Mexico, where 19 percent of captured billfish

are retained.

In conclusion, NOAA Fisheries believes that there is a good possibility that the alternatives considered, with the possible exception of Alternatives 1b (catch and release only) and 1e (landings tag program), would not produce significant adverse economic impacts for several reasons. First, known U.S. marlin landings have been well below the 250 fish landing limit in recent years. Second, surveys indicate that between 74 to 99 percent of captured marlin are released alive, and this trend would not be expected to change. Third, the provision which allows underages of the limit to be carried over into subsequent years could result in a higher landing limit in future years. Finally, the available information suggests that billfish are not a major component of the catch for the majority of charter vessels. Nevertheless, if marlin landings are prohibited, either through Alternative 1b or as the result of exceeding the limit, charter vessels that depend heavily upon marlin fishing for a significant portion of their income would likely be negatively affected, although it is difficult to precisely quantify the magnitude. Also, fishing tournaments that occur after a landings prohibition is implemented could be negatively affected. Alternative 1d, the preferred alternative, which would increase minimum fish sizes for the remainder of a fishing year when 80 percent of the limit is achieved, is expected to have the least adverse economic impact among the alternatives by potentially allowing landings to continue throughout the entire fishing year without exceeding the landing limit and thereby enhancing confidence in U.S. compliance with ICCAT recommendation 00-13.

6.2 Clarify and Make Consistent Recreational Reporting Requirements by Specifying that Vessel Owners, Rather Than Anglers, Are Required to Report Non-Tournament Recreational Landings of HMS

The overall economic effects of the preferred and no-action alternatives are provided in Section 4.2. This section examines the economic effects upon charter vessels and other affected entities. No adverse economic impacts on vessels or vessel owners are expected under either of the alternatives because changes in fishing effort, fishing activity, or landings are not anticipated. It is possible that the number of required reports would be reduced under the preferred alternative, because only one report would be required for trips that land more than one fish by different anglers. However, reporting only involves a toll-free phone call with a minimal expenditure of time, thus no adverse economic impacts are expected in any event.

7.0 REGULATORY IMPACT REVIEW

7.1 Description of the Management Objectives

Please see Section 1.2 for a description of the objectives of this rulemaking.

7.2 Description of the Fishery

Please see Section 3.2 for a description of the fisheries that could be affected by this rulemaking.

7.3 Statement of the Problem

Please see Section 1.2 for a description of the problem and the need for this rulemaking.

7.4 Description of Management Alternatives

Please see Section 2.0 for a summary of each alternative and Section 4.0 for a complete description of each alternative and its expected ecological, economic, and social impacts.

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

NOAA Fisheries does not anticipate that national net benefits and costs would change significantly in the long term as a result of implementation of the preferred alternatives. The total amount of recreational landings of Atlantic marlin are not expected to change significantly relative to current landings, except under non-preferred Alternative 1b. Tables 9 and 10 indicate the possible net economic benefits and costs of each alternative.

7.6 Conclusion

Under E.O. 12866, a regulation is a “significant regulatory action” if it is likely to 1) have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; 2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; 3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights, and obligations of recipients thereof; or 4) raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order. The preferred alternatives described in this document do not meet the above criteria. Therefore, under E.O. 12866, the proposed actions 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 the alternatives may be found in Tables 9 and 10.

Table 9. Summary of the Net Economic Benefits and Costs for Marlin Alternatives

Alternative	Net Economic Benefits	Net Economic Costs
1a - No Action	<i>Status quo</i> relative to current baseline.	<i>Status quo</i> relative to current baseline. In short term would not be compliant with ICCAT recommendations. In long term, could reduce effectiveness of marlin rebuilding plan. If limit is achieved, would necessitate emergency action. No change if landing limit is not achieved.
1b - Catch & Release Only	In short term, would ensure compliance with 250-fish landing limit. In long term, marlin biomass could rebuild more quickly.	In short term, could put some marginally profitable charter vessels out of business and could cause cancellation of some “kill” fishing tournaments.
1c - Catch & Release when Landing Limit is Achieved	In short term, could ensure compliance with 250-fish landing limit. In long term, would help marlin biomass rebuild.	In short term, if landing limit is achieved, could result in some lost fishing opportunities for charter vessels and could cause cancellation of some “kill” tournaments, esp. late in year. No change if landing limit is not achieved.
1d - Increase Minimum Size at 80% of Landing Limit	In short term, could ensure compliance with 250-fish landing limit. In long term, would help marlin biomass rebuild. May or may not necessitate prohibition of marlin landings.	In short term, if 80% of limit is achieved, could slow rate of landing of current legal-sized marlin. Could result in some lost fishing opportunities relative to baseline. No change if 80% of landing limit is not achieved.
1e - Landings Tag Program	In short term, could ensure compliance with 250-fish landing limit. In long term, would help marlin biomass rebuild.	Could be difficult and costly to administer. Could result in some lost fishing opportunities for charter vessels and cause cancellation of some “kill” tournaments

Table 10. Summary of the Net Economic Benefits and Costs for Reporting Alternatives

Alternative	Net Economic Benefits	Net Economic Costs
2a - No Action	<i>Status quo</i> relative to current baseline.	<i>Status quo</i> relative to current baseline.
2b - Vessel Owner Reports	<i>Status quo</i> relative to current baseline.	<i>Status quo</i> relative to current baseline.

8.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS

8.1 Description of the Reasons Why the Actions are Being Considered

This action is necessary to comply with the ICCAT Atlantic marlin rebuilding plan and other specific ICCAT recommendations, to better conserve and manage Atlantic marlin, and to clarify and make consistent HMS recreational reporting requirements for enforcement purposes. This action proposes to implement a 250 fish Atlantic marlin landing limit with attendant compliance measures, and to amend HMS recreational reporting requirements. For a complete description of the need for this action, please see Section 1.2.

8.2 Statement of the Objectives of, and Legal Basis for, the Proposed Rule

This action is under the authority of the Magnuson-Stevens Act and the ATCA. The objectives of this action are to comply with the ICCAT Atlantic marlin rebuilding plan and other specific ICCAT recommendations, to better conserve and manage Atlantic marlin stocks and to implement, for enforcement purposes, consistent HMS recreational reporting requirements. For a complete description of the objectives of this action see Section 1.2.

8.3 Description and Estimate of the Number of Small Entities to which the Proposed Rule Will Apply

A description of the affected fisheries is provided in Section 3.2 of this document, the HMS FMP (NMFS, 1999b), the Billfish Amendment (NMFS, 1999a), and the 2001, 2002, and 2003 SAFE reports ((NMFS 2001; 2002b; and 2003).

The universe of affected vessel owners could potentially include the following: the 13,263 vessels permitted as of October 31, 2002, in the Atlantic tunas Angling (recreational) category and the 3,659 vessels permitted as of October 31, 2003, in the HMS Charter/Headboat permit category. The Atlantic tunas Angling category permit was replaced with the Atlantic HMS Angling (recreational) category permit, effective March 1, 2003. The Atlantic HMS Angling category permit is currently required to fish recreationally for Atlantic tunas, swordfish, sharks, and billfish. The extent of overlap between vessels that already had an Atlantic tunas angling category permit and those that are currently required to obtain an Atlantic HMS angling category permit is expected to be relatively high, possibly as much as 90 percent. This would result in approximately 1,326 additional HMS Angling category permit holders. Thus, the universe of affected vessel owners (i.e., those vessels with either an Atlantic HMS Angling category permit or an HMS Charter/Headboat permit) could potentially be as high as 18,248 vessels.

The total population of recreational billfish anglers has not been quantified. Not all vessels possessing these permits participate in the recreational billfish fishery. Many fish primarily for tuna. For purposes of analysis, this document assumed that approximately 10,000 vessels, all of which are considered small entities, could be affected by the proposed marlin actions.

8.4 Description of the Projected Reporting, Record-Keeping, and Other Compliance Requirements of the Proposed Rule

The preferred alternatives do not contain any new collection-of-information, reporting, record

keeping, or other compliance requirements. Although this action would clarify that vessel owners, rather than anglers, must report non-tournament HMS recreational landings, this clarification does not result in a new reporting requirement as all fish currently must be accounted for.

8.5 Identification of all Relevant Federal Rules which may Duplicate, Overlap, or Conflict with the Proposed Rule

The proposed action does not duplicate, overlap or conflict with any other Federal rules.

8.6 Description of any Significant Alternatives to the Proposed Rule that would Accomplish the Stated Objectives of the Applicable Statutes, and that Minimize any Significant Economic Impact of the Proposed Rule on Small Entities

A description of the significant alternatives is provided in Section 2.0. All of the alternatives would accomplish the stated objectives of the applicable statutes, with the exception of the *status quo* alternatives.

At present, NOAA Fisheries believes that a 250-fish landing limit is not likely not be achieved, so any negative economic impacts are expected to be non-existent or minimal under any of the alternatives, except for the year-round catch and release alternative (1b) and, possibly, the landings tag alternative (1e). This statement is based upon RBS data (primarily tournament landings) which show that 191, 127, 97, and 129 Atlantic marlin were landed, respectively, during the 1999, 2000, 2001, and 2002 (2002 numbers are preliminary) fishing years. However, the RBS data does not fully capture all non-tournament billfish landings, so they remain largely unknown. Although the landing limit is not presently expected to be exceeded, it is possible for documented landings to increase in the future because the recreational marlin fishery is an open access fishery (*i.e.*, no limits on entry) and because new recreational HMS reporting requirements have recently been implemented.

There are several unknowns that make an assessment of economic impacts of the marlin alternatives difficult to quantify. These include the absence of a reliable estimate of current aggregate marlin landings, uncertainty regarding the number of marlin fishermen, and uncertainty regarding angler behavior when confronted with a catch and release only fishery. Nevertheless, as described below, the preferred alternative is expected to have the least adverse economic impact on small entities, while simultaneously achieving the objectives of the Magnuson-Stevens Act, ATCA, and relevant ICCAT recommendations.

In order to quantitatively compare the relative economic impact of the marlin alternatives, several assumptions are necessary. NOAA Fisheries acknowledges that these assumptions are debatable, but they provide a framework to analyze the range of economic impacts of the alternatives. Also, as NOAA Fisheries has no data predicting angler behavior, these assumptions are inferred from available data on current and past behavior and, in general, present worst case

scenarios.

First, for the purposes of analysis, it must be assumed that a 250 fish marlin landing limit will constrain the recreational fishery in some manner. Second, the analysis assumes that marlin anglers will reduce their demand for charter fishing vessels and HMS tournaments by 1 - 26 percent if landings are completely prohibited. This estimate is derived from data indicating that 74-99 percent of marlin are currently released and assumes a worst-case scenario where all fishermen who do not practice catch and release marlin fishing exit the fishery. This is not expected to occur, but this assumption is being used to establish an upper boundary for the range of possible impacts. Third, in the event that minimum sizes are increased, the analysis assumes that marlin anglers will reduce their demand for charter vessels and tournaments by 1 to 26 percent of the projected percent reduction in the number of landed fish. For example, if the minimum size for blue marlin is increased 4 inches from 99 to 103, this is expected to result in a reduction in landings of 23.4 percent (128 fish landed in 1999 with 99 inch minimum size; 98 BUM projected landed with 103 inch minimum size; $128-98=30$; $30/128 = .234$ projected percent reduction in BUM landings at 103 inch minimum size), providing a range of possible reduction in demand by $(.234 \text{ projected percent reduction in BUM landings at 103 inch minimum size} * .01 \text{ to } .26 \text{ percentage of trips that land fish})$.2 to 6.1 percent of current levels. NOAA Fisheries believes that the upper end estimate of the decline in demand is a significant overestimate of the true impacts of increasing fish size. However, as stated above, this assumption is being made to establish an upper boundary for the range of possible impacts.

Several other estimates are needed to conduct a relative comparison of the alternatives. To determine an upper boundary for the range of possible impacts of this proposed action, NOAA Fisheries examined historical landing patterns. NOAA Fisheries has assumed that if effort or reporting increases and 80% of the 250-fish limit is achieved, that benchmark will be reached at approximately the same time as when 80% of landings have historically occurred (approximately October 15th). Similarly, for the purposes of analysis, NOAA Fisheries has chosen to use the date at which 95% of historical landings have traditionally been landed as a proxy for achieving the 250 fish cap (May 15th). Again, these assumptions are made for the sake of analysis. U.S. landings of marlin documented by the RBS have been below both the 250 fish limit and the 80 percent benchmark (200 fish).

Thus, the specific assumptions are: (1) 200 marlins (80 percent of the limit) would be landed by October 15; (2) 250 marlins would be landed by May 15; (3) 103 marlin related tournaments are held annually on average; (4) 10 percent is the proxy used to represent the number of tournaments that would cease operating during an entire fishing year if all marlin fishing were catch and release, this number is derived from the fact that 90% of all tournament fish are released ; (5) a full day charter vessel fishing trip costs, on average, \$675; (6) fishing tournaments generate, on average, \$600,000 in associated economic benefits to communities (\$180 m/300 tournaments) (Ditton and Clark 1994); (7) 10,370 marlin charter trips are taken annually (3,659 permitted vessels * 109 trips each * 0.026 (Sutton, *et. al.*, 1999)); and, (8) 20 percent of marlin landings occur between October 15th and May 31.

Relative Economic Comparison of Marlin Alternatives

Alternative 1a (no-action) - no landing limit - This alternative would not produce any negative short-term economic impacts, however it is not consistent with the goals and objectives of the FMP and fails to bolster compliance with ICCAT recommendations. It could produce negative economic impacts if the limit is exceeded and emergency action becomes necessary.

Alternative 1b (catch and release only) - For charter vessels, this alternative could result in a 1 to 26 percent reduction in charter trips (104 to 2,696 lost trips) for a total annual lost revenue of between \$70,200 and \$1.82 million ($104 \text{ trips} * \$675 \text{ per trip}$). If 10 tournaments cease operations under this alternative, the resulting total annual gross revenue loss could be as high as \$6 million.

Alternative 1c (catch and release when 250 marlin landed) - This alternative is expected to result in the loss of between 2 and 47 charter trips ($.234 \text{ projected decrease in marlin landings over fishing year} * .075 \text{ percentage of marlin landed past May 15} * .01 \text{ to } .26 \text{ loss of interest due to inability to retain fish} * 10,370 \text{ trips}$) with an annual gross revenue loss of between \$1,350 ($2 \text{ trips} * \675 per trip) and \$31,750 ($47 \text{ trips} * \675 per trip), if the 250 fish limit is reached on May 15. NOAA Fisheries does not expect this alternative to result in the cancellation of any tournaments because no marlin-only tournaments are known to occur during the projected time period for any closure (May 15 - May 31). However, if landings patterns change from current patterns and result in achievement of the 250 fish limit earlier in the fishing year, then this alternative may create sizeable negative economic impacts on charter vessels and billfish tournaments, particularly in areas where fishing activity occurs later in the fishing year.

Alternative 1d (increase minimum size when 200 marlin are landed) - Preferred Alternative- This alternative is not expected to result in a reduced number of charter trips if less than 200 marlin are landed, or if it is projected that less than 250 fish will be landed, as has been the case in recent years. It is intended to allow some level of landings for the entire duration of the fishing season, without having to resort to catch and release only. Thus, it is expected to minimize adverse economic impacts, yet be consistent with ICCAT recommendations. If minimum sizes are increased, this alternative could potentially result in a reduction of charter trips by 6 to 145 trips ($.234 \text{ projected decrease in marlin landings over fishing year} * .23 \text{ percentage of marlin trips taken past projected date of size increase} * .01 \text{ to } .26 \text{ loss of interested due to reduced ability to retain fish} * 10,370 \text{ annual trips}$) in aggregate, equating to an industry wide annual gross revenue loss of \$4,050 ($6 * \675 per trip) to \$97,875 ($145 * \675 per trip). NOAA Fisheries projects that no tournaments will cease operations as no marlin-only tournaments are known to occur during the projected time period for any size increase (October 15 to May 31). Further, many tournaments that include marlin among other award species currently have a minimum tournament size equal to or greater than 103 inches. If 250 marlin are still landed, even with the increased size limit, then any negative economic impacts would be greater because landings would then have to be prohibited. The objective of this alternative is to slow down landings by increasing minimum sizes to prevent a landings prohibition, while still complying with ICCAT Recommendations.

Alternative 1e (landings tag program) - There are several options for distributing landings tags,

all of which would have varying impacts. For analytical purposes, NOAA Fisheries assumes a random distribution of permits to the universe of HMS Angling and Charter/Headboat permit holders. This alternative would be expected to result in a reduction of between 103 and 2,671 charter trips annually with a potential decrease in total gross revenues of between \$69,525 to \$1,802,925. For tournaments, this alternative could be expected to result in the cancellation of up to 10 tournaments with an economic impact of \$6.0 million dollars.

Relative Economic Comparison of Reporting Alternatives

Alternative 2a (*Status quo*) - This alternative would not produce any significant negative economic impacts. The toll-free reporting system takes less than 3 to 5 minutes for each no-cost report and an additional 3 to 5 minutes for a confirmation call-back. However, the *status quo* has caused confusion in the regulated community because it is inconsistent with other HMS recreational reporting requirements (*i.e.* bluefin tuna landings in the Angling category) requiring the vessel owner to report. Furthermore, because vessel permits are issued to vessel owners, enforcement is compromised under this alternative because permit sanctions cannot be used as a potential compliance mechanism.

Alternative 2b (vessel owners report) - For the same reason as Alternative 2a, this alternative would not produce any significant negative economic impacts. It would achieve consistency in recreational HMS reporting requirements and facilitate enforcement. Because vessel permits are issued to vessel owners, reporting requirements should logically, and for enforcement purposes, be similarly incumbent upon vessel owners. Also, it is possible, under this alternative, for the number of required reports to be reduced, because only one report would be required for trips that land more than one fish by different anglers.

No other alternatives were considered for this action because no other alternatives would meet the stated purpose of clarifying the regulations for enforcement purposes and making them consistent.

9.0 COMMUNITY PROFILES

Section 102(2)(a) of the National Environmental Policy Act (NEPA) requires Federal agencies to consider the interactions of natural and human environments by using “a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences...in planning and decision-makings.” The Magnuson-Stevens Act also requires consideration of social impacts. Federal agencies should address the aesthetic, historic, cultural, economic, social, or health effects which may be direct, indirect, or cumulative. Consideration of the social impacts associated with fishery management measures is a growing concern as fisheries experience variable participation and/or declines in stocks.

Many towns were identified in the Atlantic Billfish Amendment as containing billfish communities. They are: (1) Florida - Cape Canaveral, Dania, Daytona Beach, Fort Lauderdale, Fort Pierce, Islamorada, Jacksonville, Key West, Lighthouse Point, Marathon, Miami, New

Smyrna Beach, Pompano Beach, Port Orange, St. Augustine, Apalachicola, Clearwater, Destin, Ft. Myers, Ft Walton Beach, Gulf Breeze, Madeira Beach, Panama City, Pensacola, St. Petersburg, Tampa and Tarpon Springs; (2) North Carolina - Atlantic Beach, Beaufort, Harkers Island, Cape Hatteras, Manns Harbor, Manteo, Morehead city, Nags Head, Oregon Inlet, Swansboro, Wanchese, Wilmington, and Wrightsville Beach; (3) Louisiana - Cameron, Cut Off, Dulac, Grand Isle, Houma, Larose, Leeville, New Orleans, Port Fourchon, and Venice; Puerto Rico - Arecibo. In the locations described in a Rutgers University study (Wilson *et al*, 1998), and summarized in the Billfish Amendment, researchers found recreational billfish fishing to play an important role in Venice, LA; Panama City, FL; Madeira Beach, FL; Islamorada, FL; Pompano Beach, FL; Arecibo, PR; and Hatteras, NC. These communities are discussed in detail in Chapter 7 of the Billfish Amendment.

The HMS FMP identified towns with sizeable recreational HMS fishing communities. These include: Fairhaven, MA; New Bedford, MA; Barnegat Light, NJ; Cape May, NJ; Point Pleasant, NJ; Morehead City, NC; Atlantic Beach, NC; Wilmington, NC; Wrightsville Beach, NC; Miami, FL; Ft. Pierce, FL; Pompano Beach, FL; Destin, FL, and Tarpon Springs, FL. Several of these communities are discussed in detail in Chapter 9 of the HMS FMP.

The social impacts of the alternatives are described in Section 4.1 and Section 4.2. The impacts of the preferred alternatives are expected to be minor in all of these communities because they are not expected to significantly change current fishing practices, fishing effort, landings, or time spent fishing.

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 C.F.R. part 600 regulations.

This rule is consistent with NS 1 in that it would help to prevent overfishing of Atlantic marlin. Because the alternatives associated with the marlin fishery (see section 2.1) are being implemented to comply with ICCAT recommendations and are based on the most recent SCRS stock assessments, the alternatives are based upon the best scientific information available (NS 2), including self-reported, observer, and stock assessment data which provide for the management of these species throughout their ranges (NS 3). The preferred 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 preferred alternatives take into account variations that may occur in the fishery and the fishery resources. Additionally, NOAA Fisheries considered the costs and benefits of the alternatives using social and economic inputs in Sections 4, 6, and 8 of this document, as required by NS 7 and NS 8. The preferred alternatives ensure that, to the extent that bycatch cannot be minimized, that mortality from bycatch is minimized (NS 9). Finally, the preferred alternatives would not require fishermen to fish in an unsafe manner (NS 10).

10.2 Paperwork Reduction Act

The proposed actions do not contain any new collection-of-information, reporting, record keeping, or other compliance requirements. The call-in reporting requirement for recreational non-tournament landings was previously approved under OMB 0648-0446.

10.3 State Jurisdiction Pertaining to Atlantic Tunas Convention Act

The effects of the proposed actions do not have an impact on State or local regulations.

11.0 CONSIDERATION OF NOAA AND CEQ SIGNIFICANT IMPACT CRITERIA

NOAA Administrative Order 216-6 (NAO 216-6) identifies nine criteria, in addition to the Council on Environmental Quality's (CEQ) regulations at 40 C.F.R. § 1508.27, for determining the significance of the impacts of an action for purposes of NEPA. For the EA in this document, the NAO 216-6 and CEQ criteria are addressed as follows:

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

The proposed actions are not expected to jeopardize the sustainability of Atlantic blue and white marlin stocks or other HMS species, which are the target species affected by this proposed action. They are anticipated to facilitate rebuilding Atlantic marlin stocks. The proposed actions are not expected to result in significant changes to fishing practices, fishing effort, or marlin and other HMS landings. Implementing measures to prevent exceeding an annual landing limit of 250 blue and white marlin, combined, and a provision requiring the deduction of quota overages in subsequent years is necessary of the United States under ATCA, in order to comply with ICCAT recommendations. Achieving consistency in recreational reporting requirements will not affect fishing effort or fishing practices.

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

The proposed actions are not expected to jeopardize the sustainability of any non-target species. Both of the actions would affect only pelagic recreational fisheries, which are conducted primarily with rod and reel or handgear, and are relatively selective. If some fishing effort is redirected due to a marlin landings prohibition, then it is possible that other pelagic species such as tuna, sailfish, pelagic sharks, dolphin and wahoo could be affected. However, NOAA Fisheries does not anticipate any significant changes to fishing practices, fishing effort, or marlin landings as a result of the proposed actions.

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, or adversely affect entities listed in, or eligible for*

listing, in the National Register of Historic Places, or cause loss/destruction of significant scientific, cultural, or historic resources?

Because these proposed actions are not expected to impart significant changes to fishing practices or fishing effort, substantial damage to ocean and coastal habitats and/or EFH is not expected. Both of the actions would affect only pelagic recreational fisheries, which are conducted primarily with rod and reel or handgear. These gear types are not likely to damage bottom substrate, EFH, entities listed, or eligible for listing, in the National Register of Historic Places, or significant scientific, cultural, or historic resources.

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

The proposed actions are not expected to have substantial adverse impacts on public health or safety. Significant changes to fishing practices or fishing effort are not anticipated because available information, although incomplete, suggests that the United States has been below the marlin landing limit in recent years. Finally, because the proposed actions would affect only recreational fisheries, any “race for the fish” in unsafe conditions as a result of management measures is not expected.

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?*

The proposed actions are not expected to have adverse impacts on endangered or threatened species, marine mammals, or critical habitat of these species. Significant changes to fishing practices or fishing effort are not anticipated largely because available information, although incomplete, suggests that the United States has been below the marlin landing limit in recent years. Recreational fishing interactions with protected species (e.g., marine mammals, sea turtles, sea birds) are not widely monitored, but are receiving increased attention by various management entities including NOAA Fisheries. Improved bycatch monitoring measures may be implemented in future rulemaking to better assess impacts of recreational fishing on protected species.

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

The proposed actions are not expected to result in cumulative adverse impacts that could have a substantial effect on the target species or non-target species. The proposed actions are not expected to significantly change current fishing practices or create impacts that have not been previously addressed in the HMS FMP or in the Billfish Amendment. The actions are required under ATCA in order to comply with ICCAT Recommendations and to achieve consistency in recreational reporting requirements. Thus, NOAA Fisheries considers that the actions are consistent with past and current actions with no adverse, cumulative impacts on the environment resulting from the proposed measures.

7. *Can the action be reasonably expected to have a substantial impact on biodiversity and ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.) or result in the introduction/spread of nonindigenous species?*

The proposed actions are not expected to have a substantial impact on biodiversity and ecosystem function within the affected area, because the actions are not expected to change fishing activity or practices, or interactions with non-target and endangered or threatened species. Implementation of measures to comply with an annual marlin landing limit and to establish consistent recreational HMS reporting requirements are not expected to result in the introduction or spread of nonindigenous species.

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

The proposed actions are not expected to have any significant, positive or negative, social or economic impacts or result in cumulative adverse social or economic impacts. Over the long term, the preferred alternatives may have some positive social and economic impacts as marlin and other HMS stocks rebuild.

9. *To what degree are the effects on the quality of the human environment expected to be highly controversial, highly uncertain, unique or unknown? Do the proposed actions establish any new precedence? Will there be any impact on State or local regulations outside the EEZ or other laws applicable to EEZ?*

The proposed actions are not expected to be highly controversial because the available information suggests that U.S. fishermen have been below the proposed landing limit in recent years. However, the actual level of marlin landings outside of tournaments is not fully known. Because of this, it is somewhat difficult to precisely forecast what the impacts will be. NOAA Fisheries believes that the actions are not likely to change fishing activity or practices because surveys indicate that 74 to 99 percent of marlin are released. A mandatory reporting system for marlin landings was recently implemented in March, 2003, so any uncertainties are expected to be remedied in the near future. The proposed actions do not establish any new precedence, nor will there be any impact on State or local regulations outside the EEZ or other laws applicable to the EEZ.

12.0 LIST OF PREPARERS

This EA/RIR/IRFA was prepared by Richard A. Pearson and Russell B. Dunn from the Highly Migratory Species Management Division, Office of Sustainable Fisheries, National Marine Fisheries Service, National Oceanic and Atmospheric Administration.

13.0 LIST OF AGENCIES AND PERSONS CONSULTED

Discussions relevant to the formulation of the preferred alternatives and the analyses for this EA/RIR/IRFA involved input from several NOAA Fisheries components and constituent groups, including: the Southeast Fisheries Science Center of NOAA Fisheries, the Southeast Regional Office of NOAA Fisheries, NOAA Fisheries Law Enforcement, NOAA Fisheries Headquarters Staff, and members of the Highly Migratory Species Advisory panel (includes representatives from the commercial and recreational fishing industries, environmental and academic organizations, state representatives, and fishery management councils).

14.0 REFERENCES

- ASA, 2001. The economic importance of sport fishing. Funded by U.S. Fish and Wildlife Service under Cooperative Grant Agreement 14-48-0009-1237.
- Ditton, R. B. and D. J. Clark. 1994. Characteristics, attitudes, catch, and release behavior, and expenditures of billfish tournament anglers in Puerto Rico. Report prepared for The Billfish Foundation, Ft. Lauderdale, FL. 27p.
- Ditton, R.B. and J.R. Stoll. 1998. A socio-economic review of recreational billfish fisheries. Texas A&M University and University of Wisconsin-Green bay, Green Bay, WI.
- Fisher, M. R. and R. B. Ditton. 1992. Characteristics of billfish anglers in the U.S. Atlantic Ocean. *Marine Fisheries Review* 54(1):1-6.
- Holland, S. M, A. J. Fedler, and J. W. Milon. 1999. The operations and economics of the charter and head boat fleets of the Eastern Gulf of Mexico and South Atlantic Coasts. University of Florida, Gainesville, FL. MARFIN grant number NA77FF0553.
- Jones, C.D., M. Ortiz, M.T. Judge, and E.D. Prince. 1997. A review of the cooperative tagging center release and recapture activities for highly migratory species: 1954 to present. SCRS/97/70 23 pp.
- Lucy, J.A., E.A. Bochenek, and N.J. Chartier, 1990, Fleet characteristics and boat-owner expenditures associated with Virginia's recreational marlin-tuna fishery, in planning the future of billfishes, Part 2. 253-262. National Coalition for Marine Conservation.
- NMFS 1988. Atlantic Billfish Fishery Management Plan.
- NMFS 1999a. Amendment One to the Atlantic Billfish Fishery Management Plan. 386 pp. + Appendices. April 1999.
- NMFS 1999b. Final Fishery Management Plan for Atlantic Tunas, Swordfish and Sharks. Three Volumes. April 1999.
- NMFS 2000. Regulatory Amendment One to the Atlantic Tunas, Swordfish and Sharks Fishery Management Plan. 195 pp. + Appendices. June 2000.
- NMFS 2001. Stock Assessment and Fishery Evaluation for Atlantic Highly Migratory Species.
- NMFS 2002a Environmental Assessment prepared pursuant to a Final Rule to Improve Monitoring and Management of Billfish and Swordfish Recreational Fisheries. 38 pp. + Appendix. October 2002.

NMFS. 2002. Stock Assessment and Fishery Evaluation for Atlantic Highly Migratory Species.

NMFS 2003. Stock Assessment and Fishery Evaluation for Atlantic Highly Migratory Species.

Sutton, S.G., R .B. Ditton, J. R. Stoll, and J. W. Milon. 1999. A cross-sectional study and longitudinal perspective on the social and economic characteristics of the charter and party boat fishing industry of alabama, Mississippi, Louisiana, and Texas. Department of Wildlife and Fisheries Sciences, Texas A&M University, college Station, TX Report # HD-612. MARFIN grant number NA77FF0551. 198 p.

USFWS. 2002. 2001 National Survey of fishing, Hunting, and wildlife Associated Recreation. U.S. Department of Interior, U.S. Department of Commerce, Bureau of the Census.

Wilson, D., B.J. McCay, D. Estler, M. Perez-Lugo, J. LaMarque, S. Seminski, A. Tomczuk. 1998. Social and cultural impact assessment of the Highly Migratory Species Management Plan and the Amendment to the Atlantic Billfish Fisheries Management Plan, NOAA-NMFS-HMS Contract 178 pp.

15.0 APPENDIX: 2000 ICCAT RECOMMENDATIONS FOR ATLANTIC BLUE AND WHITE MARLIN

The 2000 ICCAT recommendation to establish a plan to rebuild Atlantic blue and white marlin populations:

Understanding that the landings reductions required by ICCAT's Recommendation Regarding Atlantic Blue Marlin and Atlantic White Marlin, adopted in 1997, extended in 1998, and in effect through 2000, though accomplished, *are not sufficient to rebuild these stocks* (emphasis added) and that, according to the SCRS, the assessments conducted in 2000 indicate that the stock of blue marlin has been reduced to a level of 40 percent of that needed to produce MSY that the stock of white marlin has been reduced to a level of 15 percent of that needed to produce MSY, although these estimates particularly for white marlin are uncertain, and that neither stock is likely to recover if the current levels of mortality continue in the future;

Taking into account that the SCRS recommended, after considering the high uncertainty involved in the stock assessment, that the Commission take steps to reduce the catch of blue marlin and white marlin as much as possible;

Recalling that the objective of the Convention is to maintain populations of tuna and tuna-like species in the Atlantic Ocean at levels that will permit the maximum sustainable catch (usually referred to as MSY) for food and other purposes;

Recognizing that the great diversity of gears and fleets by which these species are caught, both as target species and a by-catch, makes it necessary to establish a general regulatory framework valid for developing and implementing domestic regulatory measures in each case, with the aim of seeking the maximum efficiency for the adequate management of these species.

The International Commission for the Conservation of Atlantic Tunas Recommends That:

1. A two phase program be undertaken to rebuild blue marlin and white marlin populations to levels sufficient to support MSY. Phase I measures are to commence in 2001 and apply through 2002, with re-evaluation and adjustment in 2002 for the beginning of Phase II.
2. All Contracting Parties, Non-Contracting Parties, Entities, and Fishing Entities shall take steps aimed at reducing the uncertainty in the SCRS stock status evaluations by substantial investment into SCRS research on blue and white marlin habitat requirements and further verification of the historical catch and effort data for these species from all fisheries.

Phase I

3. During Phase I, the annual amount of blue marlin that can be harvested in years 2001 and 2002 by pelagic longline and purse seine vessels and retained for landing must be no more than 50% of the 1999 landing levels. During Phase I, for white marlin, the annual amount of white marlin that can be harvested by pelagic longline and purse seine vessels and retained for landing must be no more than 33% of the 1999 landing levels. All blue and white marlin brought to pelagic longline and purse seine vessels alive shall be released in a manner that maximizes their survival. The provisions of this paragraph shall not apply to marlin that are dead when brought along side of the vessel and that are not sold or entered into commerce.
4. During Phase I:
 - (a) All Contracting Parties, Non-Contracting Parties, Entities, and Fishing Entities shall maintain daily records of live and dead releases of blue and white marlin from longline and purse seine vessels, by area no greater than 5 degrees by 5 degrees;
 - (b) To improve information for future stock assessments of blue and white marlin, all Contracting Parties, Non-Contracting Parties, Entities, and Fishing Entities shall establish or maintain systems to collect scientific information on total catch composition and the release of marlin through new or on-going observer programs for their industrial and recreational fleets. The purse seine and longline fleets will aim to have coverage at levels recommended by SCRS;
 - (c) The United States shall monitor the landings of billfish tournaments through scientific observer coverage of at least 5% that includes collection of data on marlin landings from each observed billfish tournament. The United States shall endeavor to attain 10% scientific observer coverage on billfish tournament landings by the end of 2002. The United States shall limit its landings to 250 recreationally-caught Atlantic blue and white marlin combined on an annual basis for the period 2001 through 2002;
 - (d) All Contracting Parties, Non-Contracting Parties, Entities, and Fishing Entities other than the United States shall adopt domestic regulations that establish minimum size limits for landings of blue and white marlins in their recreational fisheries, such as, for example, blue marlin not smaller than 251 cm LFJL and white marlin not smaller than 168 cm LJFL.
 - (e) All Contracting Parties, Non-Contracting Parties, Entities, and Fishing Entities shall require nationals to maintain records (in terms of weight or number) of landings of blue and white marlin. Such countries shall collect catch and effort data on all marlins landed, and size data on at least 50% of the landings.
 - (f) The SCRS shall present at the 2001 Commission meeting, work plans to achieve Phase II
5. Contracting Parties, Non-Contracting Parties, Entities, and Fishing Entities shall encourage the initiation of research programs on technological improvements in the various fishing gears which promote the maximum reduction in mortality of these

species, for example, the use of circle hooks as a means of minimizing post-release mortality of marlins;

6. Contracting Parties, Non-Contracting Parties, Entities, and Fishing Entities shall develop intensive research programs during 2001 and 2002 to reduce the uncertainties identified in the scientific assessments of both species, with special attention to the habitat requisites of both species, the historical records of catch, effort and catch per unit effort of the various fleets.

Phase II

7. The SCRS shall conduct stock assessments of Atlantic blue and white marlins in 2002.
8. For blue and white marlins at the 2002 Commission meeting, the SCRS shall present its evaluation of specific stock recovery scenarios that take into account the new stock assessments, any new information and any re-evaluation of the historical catch and effort time series.
9. Based on SCRS advice, at its 2002 meeting, the Commission shall, if necessary, develop and adopt programs to rebuild blue and white marlins to levels that would support MSY. Such rebuilding programs shall include a timetable for recovery to a scientifically derived goal consistent with the objectives of the Convention, with associated milestones and biological reference points. This objective could be reached through general plans of monitoring of effort and/or time-area closures and/or other measures practical to apply by the various Contracting Parties, Non-Contracting Parties, Entities, and Fishing Entities, taking the specific characteristics of their fisheries into account.